

**KARL
MARX
FREDERICK
ENGELS**

**Collected
Works**



Volume 33
Marx: 1861-1863

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1861-1863

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Translated by

BEN FOWKES

(For the translators of the section from
the *Theories of Surplus Value* see Preface, p. XII)

Preface

Volume 33 of the *Collected Works* of Marx and Engels contains the continuation of Marx's Economic Manuscript of 1861-63 (Notebooks XV to XX, pp. 944-1251 of the manuscript, and the continuation of Notebook V, pp. 211-19). The preceding part of the manuscript will be found in volumes 30 to 32. The whole manuscript is presented here in accordance with its new publication in the languages of the original in *Marx-Engels Gesamtausgabe* (MEGA), Zweite Abteilung, Bd. 3 (Teile 1-6), Berlin, 1976-1982.

In the text contained in this volume Marx continues his analysis of the capitalist economy, concentrating, in particular, on the theory of surplus value and its relation to profit, and proceeds with his critique of earlier political economists (Thomas Hodgskin, Sir George Ramsay, Antoine Elisée Cherbuliez, Richard Jones).

Obvious slips of the pen in Marx's text have been corrected by the editors without comment. The proper and geographical names and other words abbreviated by the author are given in full. Defects in the manuscript are indicated in footnotes, places where the text is damaged or illegible are marked by dots. Where possible, editorial reconstructions are given in square brackets.

Foreign words and phrases are given as used by Marx, with the translation supplied in footnotes where necessary. English phrases and individual words occurring in the original are set in small caps. Longer passages and quotations in English are given in asterisks. Some of the words are now somewhat archaic or have undergone changes in usage. For example, the term "nigger", which has acquired generally—and especially in the USA—a more profane and unacceptable status than it had in Europe during the 19th century. The passages from English economists quoted by

Marx in French or German are given according to contemporary English editions. In all cases the form of quoting used by Marx is respected. The language in which Marx quotes is indicated unless it is German.

The text and apparatus to Volume 33 were prepared by Alexander Chepurenko and Lyubov Zalunina (Institute of Marxism-Leninism of the CC CPSU). Svetlana Kiseleva (IML) took part in compiling the Name Index and the Index of Quoted and Mentioned Literature. The bulk of the text in this volume was translated by Ben Fowkes (Lawrence & Wishart) and edited by Victor Schnittke and Andrei Skvarky. The translation of pp. 1084-1157 of Marx's manuscript was taken from the three-volume edition of Marx's *Theories of Surplus Value*, issued by Progress Publishers, Moscow. It was made by Emile Burns, Renate Simpson and Jack Cohen and edited by Salo Ryazanskaya. This section was editorially checked with the new MEGA edition by Natalia Karmanova and Alla Varavitskaya (Progress Publishers). The volume was prepared for the press by Svetlana Gerasimenko (Progress Publishers).

The scientific editor for this volume was Larisa Miskievich (Institute of Marxism-Leninism of the CC CPSU).

KARL MARX

ECONOMIC WORKS

1861-1863

**ECONOMIC MANUSCRIPT
OF 1861-63**

(Continuation)

A CONTRIBUTION TO THE CRITIQUE
OF POLITICAL ECONOMY¹

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[MERCANTILE CAPITAL. MONEY-DEALING CAPITAL]¹²

[XV-944]¹³ It appears entirely correct to say:

The division of profit into interest and industrial profit becomes evident as soon as there exist 2 classes of CAPITALISTS, MONIED and INDUSTRIAL. The existence of these 2 classes is an expression of that division; but the split must be there (must be possible) for it to appear in the separation of the 2 classes. The profit may, however, be so low, e.g. 2%, that small capitalists are unable to live from it as MONIED CAPITALISTS; but this would not prevent big capitalists from doing so, since the sum total, THE ABSOLUTE AMOUNT, of interest, depends not only on its rate but on the size of the interest-bearing capital.

The level of interest for COMMON AGRICULTURISTS in India, for example, by no means indicates a profit of an extraordinary size. *Firstly*, the profit as well as the interest is appropriated in the form of interest, and so is part of wages. (Indirectly also *property* in capital itself, i.e. here in the conditions of labour.) *Secondly*: the rate of profit is the higher the lower the mode of production, i.e. the more variable capital is expended in proportion to the total capital; [or] the [XV-945] smaller the amount of AUXILIARY capital in proportion to the capital paid out on labour.¹⁴ *Thirdly*, to be sure, there is the paucity of the Indian's needs, determined by particular (physical) circumstances. HENCE THE LOW VALUE of his labour capacity.

With the development of monetary wealth (it is this development itself) as opposed to the more restricted forms of AGRICULTURAL and artisan wealth, the relation in which on the one hand the worker still appears as independent, hence not as a wage labourer, but on the other hand the objective conditions of his labour or the

product already possess an independent existence alongside him—form the joint property of a special class, the usurers—necessarily develops in all modes of production resting more or less on exchange. This relation shows itself as a detachment of the conditions of labour, which increasingly derive from circulation and depend on it, from the economic existence of the worker, their attainment of autonomy. On the other hand, the worker has not yet been subsumed under the process of capital. Therefore the mode of production, too, is not essentially changed. Where this relation reoccurs within the bourgeois economy, it is in backward branches of industry, or those which are still resisting the transition to the modern mode of production. And it is in those branches that the most odious exploitation of labour takes place. Moreover, the relation between labour and capital does not here bear within itself any kind of basis for the development of new productive power, or the germs of new historical forms. In the mode of production itself, capital still appears here as materially subsumed under the individual worker or the worker's family, whether in handicraft production or in small-scale agriculture. Exploitation of capital takes place, without the mode of production of capital. The rate of interest is very high, because 1) the rate of profit is high, since the proportion of AUXILIARY CAPITAL is small; 2) the interest includes profit; 3) it even includes part of the wage; and 4) it is not only surplus value and wages but the appropriation of the conditions of labour themselves. A part of the interest cannot be paid; the conditions of labour are themselves mortgaged (as in India). With industrial capital it goes without saying that the part of the product which represents the conditions of labour falls to the share of the capitalist. This form of usury, in which capital does not take control of the mode of production, hence is capital only formally, presupposes pre-bourgeois modes of production as dominant; but it is reproduced again in bourgeois society in subordinate spheres. In so far as the effect of this capital is not political—dissolution of existing conditions, as in antiquity, etc.—in so far as it has an historical meaning, it is the separation of the conditions of labour from the worker on the one hand; which is the same thing in other words as the formation thereby of monetary wealth which later buys the conditions of production as commodities.¹⁵

Another historical form of interest (wherever there is slavery, serfdom, and wealth and income founded thereon): lending of capital to wealth engaged in consumption. This *appears historically important here as itself a process by which capital originates*, in that the

income, rent and often the LAND TOO OF THE LANDED PROPRIETORS ACCUMULATES AND BECOMES CAPITALISED IN THE HANDS OF THE USURERS. This is one of the forms in which money, circulating capital, accumulates in the hands of a class independent of landed property.

Trade develops with the development of capitalist production, and at the same time the necessity arises for the producer to produce commodities, partly to buy the elements of these, partly to sell the product, to pay within certain due dates, etc. In short, the money form of the commodity becomes essential to him. This leads to an extension of usury, which now already begins to perform increasingly the function of interest-bearing capital in the modern sense. But the money still lies in part in the hands of old-fashioned usurers, a few money-dealers, monopolists, who thus hold sway over the emerging industries. Hence the struggle, in the 17th century for example.¹⁶

It is clear that where trade and industry develop in towns, money-dealing also develops. Here usury is already more subsumed in relation to *this form of capital* (merchants' capital). It first becomes subordinated with the development of forms of credit in which payment in cash or payment in gold, silver, loses its significance. But a new class of parasites develops on this basis.

For the development of usury nothing is needed except a certain development of commodity production and of the necessity of making payments in money. There exists on the one hand, in the SLAVEHOLDER, FEUDAL LORD, a person who possesses SURPLUS labour and who turns it over to or shares it with the usurer. Similarly a class of merchants, alongside whom the *hoard-builder who has developed into a usurer* settles down, sharing with them their profits, which are for the most part PROFIT UPON EXPROPRIATION.¹⁷ In relation to the small-scale producers, finally, it is a manner of reducing their income to a mere wage and appropriating the conditions of labour.

[XV-946] Thus as long as money capital retains its old-fashioned structure of usury, the rate of interest is compulsorily forced DOWN by law. As soon as the form of credit has been created—in which all the latent money capital of society is placed at the disposal of industrial production—as soon as money capital has become a commodity, subjected to competition, there is an end to the forcible methods of subjecting it to industrial capital and reducing it to a mere form, a moment of the latter.

We have seen^a: The less developed the character of the product

^a K. Marx, *A Contribution to the Critique of Political Economy*. Part One (present edition, Vol. 29, p. 367).—Ed.

as commodity, the less exchange value takes control of production over the whole of its breadth and depth, the more does *money* appear as actual wealth, as abstract wealth, vis-à-vis the restricted modes of representation it has in use values. *Hoard formation* is based on this. Leaving aside its functions of world money and hoard, it is precisely in the form of the *means of payment* that money appears as the absolute form of the commodity. And it is its development as means of payment which chiefly gives rise to *interest*, and develops money as money capital.¹⁸ What spendthrift or corrupting wealth wants is money as money, AS THE GENERAL POWER OF PURCHASING. (Also for paying debts.) Where the small producer needs money above all, is for *payment*. In both cases money is used as money. Hoard formation, on the other hand, only becomes real, fulfils its dream, in *usury*. What is demanded of the usurer is not capital, but money as money, and through interest he converts this hoard of money for himself into capital, self-valorising value, a means whereby he takes control of part of the surplus labour and part of the conditions of production themselves, even if they remain nominally independent of him. *Usury* exists apparently in the pores of production, like the gods in the system of Epicurus.¹⁹ This form of interest-bearing capital admittedly presupposes that production has developed the circulation of commodities so far that it has progressed to the formation of money, and developed money in its various functions. But it depends on a situation in which the part of the product which is converted into a commodity still only forms a relatively small part of production, and in which the conversion of the commodity into money is still difficult, and money itself, the existence of the commodity as exchange value, is still exceptional. This kind of money capital, although it presupposes the production of commodities, cannot be derived directly from the relation between commodity and money. The more the commodity develops as a commodity, the more does money develop as its pure form; and the more is the price at which the commodities are sold determined by their value. It is competition as form of realisation of capital, in which this is paid. That money is paid for money loaned is a simple consequence of the need TO HAVE IT ON ANY PRICE, and the hoard-forming usurer exploits this need.²⁰ Money is a condition, a necessary condition, and it is the more difficult to obtain the less the commodity form is the general form of the product. It is a condition for production, even though still very extraneous, and a condition for extravagance and to fulfil the need for corruption. As such a condition, as money, it is sold. *Merchants' wealth* is older than

interest-bearing money capital to the extent that it emerges directly from the circulation of commodities, whereas *money capital* emerges from the privileged position of money which grows out of circulation, and from the need for it as a condition. In the first case the form of circulation is $M-C-M$ (or $C-M-C$). In the second the result is $M-M'$; that more money can be made with money. In so far as it attaches itself to *commercial capital* it has the same relation to it as interest-bearing capital does to capital on the basis of capitalist production in general. In contrast to this, where it exploits small-scale property or extravagant wealth (which itself appropriates the labour of slaves or serfs), it emerges simply from money as money—as hoard, in its function of means of payment, etc., and the price at which it is granted is determined purely by the price the usurer succeeds in extorting. That “nothing is given for nothing”, hence nothing is lent free of charge, is already evident from the fact that [XV-947] with the development of the commodity every divestiture appears as an appropriation.²¹

Commercial capital, or money as it appears in merchants' wealth, is the first form of capital, i.e. value which proceeds exclusively from circulation (from exchange), preserves, reproduces, and increases itself within it; and thus the exclusive purpose of this movement is exchange value. There are two movements: buying in order to sell, and selling in order to buy, but $M-C-M$ is the predominant one. Money and its increase predominate as the exclusive purpose of the operation. Commercial capital is money as the mediating movement of circulation. Money similarly appears here as an end in itself, without on that account rigidifying in its metallic existence. It is here the living transformation of value into the two forms of the commodity and money; the indifference of value towards the particular use values in which it is incorporated, and at the same time its metamorphosis into all of these forms, which appear, however, merely as disguises for it. Thus while the action of commerce gathers together the *conditions of circulation*, and merchants' wealth is therefore on the one hand the first form of capital's existence, and also appears historically in this way, on the other hand this form appears as contradictory to the concept of *value*. To buy cheap so as to sell dearer is the law of commerce. Hence not the *exchange of equivalents*. The concept of value is present to the extent that the different commodities are all *value*, and therefore *money*; equal, from the qualitative point of view, expressions of social labour. But they are not equal *magnitudes of value*. It should in general be noted that when products are first exchanged as commodities the *quantitative ratio*

in which they are exchanged is *d'abord*^a directly a matter of accident. They are posited as commodities to the extent that they are *exchangeable* at all, i.e. expressions of *the same thing*. But it is not thereby posited that they are *equivalents*, in so far as each contains the same amount of labour time. Continued exchange and therewith reproduction increasingly eliminates this accidental character. At first, however, this does not operate for the producer on the one side and the consumer on the other, but rather for the mediating movement between both of them, for the merchant, who compares the money prices and pockets the difference. He posits the *equivalence* through his own movement. He compares the prices. If the whole of production is based on the exchange value of the product, the value of the commodity is regulated not only by its *qualitative* but by its *quantitative* identity. Money as commercial wealth, as it appears embedded in the most divergent forms of society, and at the most distinct stages of the development of the social forces of production, is merely the mediating movement between extremes it does not dominate and presuppositions it does not create.

Money emerges from the mere form of commodity circulation $C-M-C$ not only as measure of values and means of circulation but as absolute form of the commodity and thereby of wealth, as hoard, etc., and its retention and increase as money appears as an end in itself; in the same way, money, the hoard as self-preserving and self-increasing by alienation, emerges from the mere form of merchants' wealth, $M-C-M'$, as a value which increases itself merely by being alienated. *Usurers' capital* has the same relation to *merchants' wealth* as *interest-bearing money capital* has to *industrial capital*. Usurers' capital, in and for itself, is as far from having an internal limit as is merchants' wealth, which rests on PROFIT UPON EXPROPRIATION. The second depends on fraud, which goes as far as it can, and the first depends on force, which goes as far as it can. That both develop *monetary wealth* means in fact that they appropriate for themselves the wealth of society in the form of money; that they monopolise the monetary wealth of society.

Independent merchants' wealth—as predominant form of capital—is the achievement by the process of circulation of an independent position vis-à-vis its extremes—and these extremes are the exchanging producers themselves. These extremes remain independent towards this process, this process is, conversely, independent towards them. Here the product becomes a commod-

^a At first.—Ed.

ity through trade. Trade does not exist because the product is produced from the outset as a commodity (or if it is this is only within narrow limits). Here it is trade which develops the forming of products into commodities; trade is not the movement of produced commodities. Here, therefore, capital first makes its appearance as capital in the circulation process, because this process is altogether the form in which exchange value first moves as in its element; exchange value dominates this form, whose *development is the circulation process*. What is produced, as a result of this money developed in the circulation process into capital, is money capital *quand même*,^a usurers' capital.

[XV-947a] The long and short of this story, the reason why capital develops as commercial capital and usurers' capital—in these two forms as monetary wealth—before its actual shape emerges, the shape in which it subjects production to itself, the shape in which it constitutes the fundamental form of modern society, is this, that the product is first developed as exchange value *in circulation*, that it first becomes *commodity* and *money* in circulation. Capital can be formed in the circulation process, and must be formed in it, before it dominates the extremes of the process—the different spheres of production between which the circulation process mediates. The circulation of money and commodities—hence also money and commodity capital—can *mediate* between the spheres of production of the most diverse organisations, which by virtue of their internal structure are still chiefly directed towards the production of use value. This *achievement of an independent position by the circulation process*, whereby the spheres of production are related to each other by a third element, expresses two things. It expresses both that circulation has not yet taken control of production, but rather relates to it as an indifferent presupposition, a *given* presupposition, and that the process of production has not absorbed that of circulation as a mere moment of itself. Both these things are apparent in capitalist production. The process of production rests entirely on circulation, and circulation is a mere moment of production, merely the realisation of the product produced as a commodity. The form of capital which it obtains *directly* out of circulation, that of commercial capital, appears here as merely a *form* of capital in its movement of reproduction; the same is true of all the forms it assumes as money capital, and the valorisation of money capital as such—through its mere alienation as

^a All the same.—Ed.

commodity—appears as a particular form merely through its valorisation in the production process itself.

Wealth as the subject of consumption. This is at bottom more akin to productive capital than to commercial capital or usurers' capital, because it is a direct appropriation of surplus labour (of the slave, the serf, etc.) through the possession of the conditions of production. But here the worker himself still belongs *d'une manière ou d'une autre*^a to the objective conditions of production. What is predominant is use value. The agents do not come to meet each other as buyers and sellers. The independent forms of exchange value as money and as commodity do not condition the process itself. The slave (not the serf) may be bought as a commodity. But his exploitation does not take place in the form of the exchange of commodities between exploiter and exploited. Slavery, serfdom, are posited by relations independent of production itself—in so far as it is directed to exchange value. The SLAVEHOLDER, FEUDAL LORD, possesses surplus labour in the form of HOMEY VALUES IN USE. The merchant brings him commodities, of which he exchanges very few for the mass of these products. Usury attaches itself here to anticipate the income of the LANDLORD, etc., to provide for him the means with which to purchase the merchant's commodities, and altogether to advance to him that form of wealth through which it *always* holds power over men and things. On top of this there is the *necessity for payment*.

Productive classes.

To the extent that usury becomes attached to merchants' wealth itself, the latter aims to gain a profit. It therefore pays interest in order to make more profit. Here the interest must already become more moderate, because it must allow the possibility of a profit; it may however, where things are on a small scale, also lead simply to an increase in *prices*, to which interest and a proportional amount of profit are added. There are natural limits to this increase. With the merchant there is never the compulsion to buy from him BEYOND A CERTAIN PRICE. Thus reproduction is slow despite the high prices, because the market is restricted. Here, then, usury dominates the small, nascent COMMERCIAL and INDUSTRIAL TRADE. On the other hand, trade whose wealth exists only in circulation leads to the absolute dependence of that wealth on circulation, [XV-947b] to the development of due dates of payment, to dependence on the RETURNS, on the payments of others, etc. But in so far as money is *means of payment* it must absolutely be procured, AT WHATEVER COST.

^a In one way or another.—Ed.

Here therefore usury—which advances the money—rules unconditionally, prescribes the conditions.

*Petty-bourgeois and small peasant industry.*²²

Needs money either as *means of purchase* or *means of payment*.

As *means of purchase* chiefly when, in forms of production where the worker must still be the proprietor of his conditions of production, must possess the conditions of production, those conditions are lost to him through accidents or extraordinary vicissitudes, or at least fail to be replaced in the customary course of *reproduction*. For example, harvest failure or cattle plague, etc. These [corn and cattle] also belong among the conditions of production as means of subsistence and raw material. A mere rise in their price can make him incapable of buying them back with the yield of his product or even replacing them *in natura*. *Examples*: the same wars through which the Roman patricians ruined the plebeians, forcing them into military services which prevented them from reproducing their conditions of labour, hence *impoverishing* them (and this is here the predominant form—impoverishment is here the loss of the conditions of reproduction), filled up their storehouses and cellars with captured copper, the money of that epoch. Instead of giving the plebeians directly the commodities—corn, horses, etc.—they lent them this useless copper, and used the situation to charge enormous, usurious interest rates. Under Charlemagne, who similarly ruined the peasants, all they could do was become serfs instead of debtors. Thus we know that in Africa, as in the Romanian principalities,²³ etc., starvation leads people e.g. to sell themselves as slaves to those who are richer. This for the epoch-making moments at which money develops as usurers' capital. If this is considered in detail, the retention or the loss of the conditions of production depends for the individual producer on 1,000 fortuities, and every such accident of loss—of *impoverishment*—is a point at which the usurer-parasite can strike root. For a small peasant it merely needs the death of a cow, for a small cobbler it merely needs a rise in the price of leather, to make both of them unable TO BEGIN their reproduction ANEW on the previous scale: and here usury steps in, seizing control of their surplus labour, etc., by alienating from them their conditions of production juristically if not yet economically. Here money is demanded purely as means of purchase, yet the intention is neither to consume nor to make a "profit", but rather to recover control of the conditions of labour which have been lost.

Means of payment. This is the true terrain of usury, large in

extent and peculiar to it. Here money steps forth in its absolute form, and indeed in the usual sphere of the production process, in the native sphere of the circulation process. In the narrowest circle. Every monetary obligation to be fulfilled on certain *TERMS*, tribute, taxation, involves the necessity to pay money. And with the slightest degree of division of labour, and emerging from commodity production itself, the relation of creditor and debtor develops from that of buyer and seller, as I have proved,^a partly from the particular form of alienation which flows from the particular nature of use values, partly from the failure of the different times and periods of production of the different *TRADES* to coincide. Here it is absolutely essential to have the commodity in the form of money at the particular time appointed. Use value as such, the commodities themselves, appear here as worthless rubbish. Money is absolute, counts for everything, and this all-embracing power of money is the power of the usurer.

[XV-948] Even on the basis of modern capital, e.g. in monetary crises, where interest=20%, the price of the commodity is far below its production costs. Then usury holds sway even here. And the same usury is the chief means of developing the necessity of money as means of payment, for it pushes the producer more and more deeply into debt, and nullifies his usual means of payment, his total production being insufficient for him to pay the interest. Here usury sprouts from money as *means of payment* and creates and extends this form of money, hence its own terrain.

Means of purchase—as soon as the usual reproduction is dislocated and fails to provide for the replacement of the conditions of labour, which therefore have to be derived from circulation. *Means of payment* as the form of money in which it appears, in general, as the absolute form vis-à-vis concrete wealth. In both forms money is required not as capital but as money: In one case *money* must, by way of exception, be first converted into the conditions of labour. In the other case we have the necessity of conversion *into money*. In both forms money capital develops on a basis independent of capitalist production. In both forms it can lead to the latter. In their direct form, usury and trade *merely exploit given relations of production*. They do not create these relations; are external to them. Direct usury endeavours to preserve them in order to be able to exploit them again and again; it is conservative, it merely makes them more wretched. The less

^a K. Marx, *A Contribution to the Critique of Political Economy*. Part One (present edition, Vol. 29, pp. 375-76).—*Ed.*

the conditions of production enter the process and emerge from it again as a commodity, the more does their creation out of *money* appear as a specific act. The less the whole of production depends on circulation, with payments exclusively in cash, with the sale of commodities restricted to a narrow sphere, with little accumulation and little money in circulation, with slow and interrupted metamorphoses, little intertwining therefore of the production process of one person with the circulation of the other, the stronger is the power of money as *means of payment*. Hence the greater the area for usury. Just as money as hoard is the more important, the less exchange value is developed, so money as usurers' capital is the more important, the less money is a form naturally implied by the mode of production.

The development of *monetary wealth* as a particular form of wealth means with regard to usurers' capital that all its claims are possessed in the form of *monetary claims*. The more the bulk of production in a given country is restricted to payments in kind, etc., and use value, the more does monetary wealth develop there.

Adam Smith has this to say with regard to merchants' capital:

"The inhabitants of a city, it is true, must always ultimately derive their subsistence, and the whole materials and means of their industry, from the country. But those of a city, situated near either the sea-coast or the banks of a navigable river, may draw them from the most remote corners of the world, either in exchange for the manufactured produce of their own industry, or by performing the office of carriers between distant countries, and exchanging the produce of one for that of another. A city might, in this manner, grow up to great wealth, while not only the country in its neighbourhood, but all those to which it traded, were in poverty. Each of those countries, perhaps, taken singly, could afford it but a small part either of its subsistence or of its employment; but all of them taken together, could afford it both a great subsistence, and a great employment" ((Garnier,) t. II, liv. III [pp. 452-53; McCulloch's edition, Vol. III, p. 209] ²⁴).

Just as money first developed [in exchange] between communities, so did trade first develop as foreign trade and intermediary trade. On a large scale first as *CARRYING TRADE*.

"The cities of Italy seem to have been the first in Europe which were raised by commerce. The crusades gave extraordinary encouragement to the shipping of Venice, Genoa, and Pisa, sometimes in transporting men, and always in supplying them with provisions. These republics were the commissaries, if one may say so, of those armies" (l.c. [p. 454; Vol. III, p. 210]).

[XV-949] "The inhabitants of trading cities, by importing the improved manufactures and expensive luxuries of richer countries, afforded some food to the vanity of the great proprietors, who eagerly purchased them with great quantities of the rude produce of their own lands. The commerce of a great part of Europe in those times, accordingly, consisted in the exchange of their own rude, for the manufactured produce of more civilised nations" ([pp.] 454-55 [ibid.]).

Luxury manufactures, the offspring of *FOREIGN COMMERCE*, established by merchants ([pp.] 456-57 [Vol. III, p. 211]) (worked up foreign materials).

Adam Smith speaks of a second kind, which

"grow up naturally, and ... of their own accord, by the gradual refinement of household manufactures. Worked up HOME-GROWN MATERIALS" ([p.] 459 [Vol. III, p. 213]).

The trading peoples of antiquity, like the gods of Epicurus, exist in the spaces between the worlds, OR RATHER like the Jews in the pores of Polish society.¹⁹

The first independent trading peoples or cities attained their magnificent development through the *CARRYING TRADE*, which rested on the barbarism of the producing peoples, between which they played the part of intermediary.

In the preliminary stages of bourgeois society, trade dominates industry; in modern society the reverse. Trade will naturally react back to varying degrees upon the communities between which it is carried on. It will subjugate production more and more to exchange value; force direct use value more and more into the background, by making enjoyment and subsistence more dependent on the sale than on the immediate use of the product. It dissolves the old relations. It increases the circulation of money. It does not merely seize hold of the overflow of production; it progressively bites into production itself. (Certain branches of production are still based on trade.) Yet its solvent effect depends to a great extent on the nature of the producing communities between which it operates. For example, [it] has hardly shaken the old Indian communities and Asiatic relations in general. Fraud in exchange is the basis of trade where it appears independently.

Commercial wealth, like usury, as an independent economic form and as the foundation for trading peoples and trading cities, exists and has existed between peoples standing at very different stages of economic development, and production in the guild form, etc., can continue to exist in the trading city itself (the old Asian cities, the Italian cities of the Middle Ages, the Greek cities, etc.).

* "*Trade* is an operation, by which the wealth, or work, either of individuals, or of societies, may be exchanged by a set of men called merchants, for an equivalent, proper for supplying every want, without any interruption to industry, or check to consumption"* ([James] Steuart, [*An Inquiry etc.*], Dublin edition, [1770,] Vol. I, [p.] 166).²⁵ * "While wants continue simple and few, a workman finds time enough to distribute his work: when wants become more multiplied, men must work harder; *time becomes precious*; hence trade is introduced with the merchant as middleman between workmen and consumers" ([p.] 171). "The *collection*"*

(of products. The *TRADE* is concentrated at first, but in circulation, while the work itself continues to be carried on in isolation.)

* "*into a few hands* is the introduction of trade"* [ibid.].

(This COLLECTION INTO A FEW HANDS is not yet a feature of the process of production itself.)

"The CONSUMER does not buy so as to sell again. The merchant buys and sells solely WITH A VIEW TO GAIN" ([p.] 175). "The most simple of all TRADE, is that which is carried on by BARTERING (the necessary articles of subsistence)" (barter between the SURPLUS fund of the farmers and the FREE HANDS²⁶) ([p.] 175). "When reciprocal wants are SUPPLIED BY BARTER, there is not the smallest occasion for money: this is the most simple of all combinations. When wants are multiplied, BARTERING BECOMES more difficult; UPON THIS MONEY IS INTRODUCED. This is the COMMON PRICE of all things: it is a PROPER equivalent in the hands of those who WANT. This OPERATION OF BUYING AND SELLING is a little more complex than the former" [ibid., p. 177].

Thus 1) BARTER; 2) SALE; 3) COMMERCE. The merchant must be introduced. What before we called WANTS is here represented by the CONSUMER; what we called industry, by the MANUFACTURER; what we called money, [XV-950a] by the merchant.

// Money is on the one hand the first metamorphosis of the commodity, its existence as exchange value. Secondly, however, it is the beginning of the 2nd metamorphosis, as the form in which the commodity is converted into the other commodity. The merchant represents these two points, the 2 moments of money in $M-C-M$, but in such a way that money itself appears as the aim. //

"...This OPERATION of BUYING and SELLING is TRADE: IT RELIEVES both parties of the whole TROUBLE of TRANSPORTATION, and ADJUSTING WANTS to WANTS, OR WANTS to MONEY; THE MERCHANT REPRESENTS BY TURNS THE CONSUMER, THE MANUFACTURER, AND THE MONEY. To the CONSUMER he appears as the whole body of MANUFACTURERS; to the manufacturer as the whole body of CONSUMERS; and to one and the other class HIS CREDIT SUPPLIES THE USE OF MONEY" ([pp.] 177-78).

"Merchants are supposed to buy and sell not by necessity, but with a view to profit" (l.c., [p.] 201).

Gilbart (J. W.), *The History and Principles of Banking*, London, 1834, has this to say about *interest*:

"That a man who borrows money with a view of *making a profit* by it, should give some portion of his profit to the lender, IS A SELF-EVIDENT PRINCIPLE OF NATURAL JUSTICE. A man makes a profit usually by means of TRAFFICK. But in the Middle Ages the population was purely agricultural. And under such conditions, as under FEUDAL GOVERNMENT, there can be but little TRAFFICK, and hence little PROFIT. Therefore, the laws on usury in the Middle Ages were justified" [pp. 163, 164]. "Besides, IN AN AGRICULTURAL COUNTRY A PERSON SELDOM WANTS TO BORROW MONEY EXCEPT HE BE REDUCED TO POVERTY OR DISTRESS BY MISERY" (p. 163).

"Henry VIII limited interest to 10%, James I to 8, Charles II to 6, Anne to 5%" (pp. 164-65). "In those times, the lenders were in fact, if not legally, monopolists, and hence it was necessary that they, like other monopolists, should be placed under RESTRAINT" (l.c., [p.] 165). "In our times, it is the rate of profit which regulates the rate of interest; in those times, it was the rate of interest which regulated the rate of profit. If the money-lender charged a high rate of interest to

the merchant, the merchant had to charge a higher rate of profit on his GOODS. Hence, a large sum of money was taken from the pockets of the purchasers to be put into the pockets of the MONEY-LENDERS. This ADDITIONAL PRICE, put upon the goods, made the capital less able and less inclined to purchase them" ([p.] 165).

In the 17th century, Josiah Child, in his *Traité sur le commerce et sur les avantages qui résultent de la réduction de l'intérêt de l'argent* (written in 1669, translated from the English), Amsterdam and Berlin, 1754 //a *Traité contre l'usure*, by Thomas Culpeper, 1621, is there as well argues against Thomas Manley (whose TRACT is called *Interest of Money Mistaken*), calling him the "CHAMPION OF THE USURERS".²⁷ The starting point, as with all the discussions of the English political economists of the 17th century, is naturally the wealth of Holland, where "the RATE OF INTEREST IS LOW". Child makes this LOW RATE OF INTEREST the reason for the wealth [of the Dutch], Manly says it is only the result of it.

"Insomuch that to know whether any country be rich or poor no other question needs to be resolved, but this, viz. What interest do they pay for money?" ([J. Child, *Brief Observations Concerning Trade and Interest of Money*, London, 1668, p. 9] l.c., [p.] 74).^a "Like a stout champion for the sly and timorous herd of usurers, he plants his main battery against that part which I confessed to be weakest. ... And he positively denies that the lowness of interest is the cause of wealth and affirms it to be only the effect thereof" ([J. Child, *A New Discourse of Trade...*, London, 1775, p. 39; *Traité...*, p.] 120).^b "When interest is abated, they who call in their money must either buy land (whose price goes up as a result of the number of buyers) or trade with it" ([*A New Discourse...*, p. 47; *Traité...*, p.] 133).^a "Whilst interest is at 6 per cent no man will run an adventure to sea for the gain of 8 or 9 per cent which the Dutch, having money at 4 or 3 per cent at interest, are contented with" ([*ibid.*; *Traité...*, p.] 134). "The low rate of interest and the high price of land force the merchant to stick to commerce" ([*ibid.*, p. 52; *Traité...*, p.] 140). "The reduction of interest inclines a nation to thriftiness" ([*ibid.*; *Traité...*, p.] 144).^a "If trade be that which enriches any kingdom, and lowering of interest advances trade, then the abatement of interest, or more properly restraining of usury, is doubtless a primary and principal cause of the riches of any nation; it being not absurd to say that the same thing may be both [XV-950b] a cause under certain CIRCUMSTANCES and an effect under others" ([*ibid.*, p. 58; *Traité...*, p.] 155).^a "An egg is the cause of a hen, and a hen the cause of an egg. The abatement of interest causes an increase of wealth, and the increase of wealth may cause a further abatement of interest. But that is best done by the midwifery of good laws" ([*ibid.*, p. 59; *Traité...*, p.] 156).^a "I am an advocate for industry, my adversary for idleness and sloth" ([*ibid.*, p. 71; *Traité...*, p.] 179).^b

Child appears here as the direct champion of industrial and commercial capital. //

^a Marx quotes partly in German and partly in French.—Ed.

^b Marx quotes in French.—Ed.

The number of turnovers of capital can only increase profits in so far as it increases the number of reproductions, *hinc*^a the amount OF SURPLUS LABOUR, or the amount of reproduction (its scale) in the same period of time. Engaged capital cannot be utilised to extend the scale of reproduction. But with COMMERCIAL CAPITAL the situation is different.

If the productivity of industry increases, the price of the individual commodity falls. It contains less labour, less paid and unpaid labour. Let us assume 300 yards of linen instead of 100. Let these 300 be the work of 10 men (as linen, and let yarn remain equally expensive, etc.); while previously the 100 were the work of 10 men. In the latter case 10 yards would contain the work of one man, for instance=12 hours of labour. 10 yards=12 hours of labour; 1 yard= $\frac{12}{10}=\frac{6}{5}=1\frac{1}{5}$ hours of labour. In the former case 30 yards=12 hours of labour; 1 yard= $\frac{12}{30}$ hours of labour= $\frac{4}{10}=\frac{2}{5}$ hours of labour. In one case the yard contains $\frac{6}{5}$ hours of labour, in the other $\frac{2}{5}$, hence 3 times less. Assume that 1 hour of labour=3 shillings.²⁸ Then in the first case the yard costs $1\frac{1}{5}$ s. and in the second $\frac{2}{5}$ s. In the first case ls. $2\frac{2}{5}$ d. and in the second case $4\frac{4}{5}$ d. Assume now that the yarn, etc., the constant capital contained in the yard,=ls. Then in the first case the yard costs 2s. $2\frac{2}{5}$ d. and in the second ls. $4\frac{4}{5}$ d. Assume the wage= $\frac{1}{2}$ of the value added; then in the first case the yard contains $7\frac{1}{5}$ d. and in the second $2\frac{2}{5}$ d. [of the wage]. The surplus value is equal to this. The ratio between the wage and the surplus value has remained the same. If the individual commodity is considered, the profit (and the wage) contained in it is 3 times smaller than in the other case. But if the total amount is considered, the total of wages and profits has remained the same, because $10 \times 7\frac{1}{5} = 30 \times 2\frac{2}{5}$. The rate of profit, in contrast, would have fallen, because the capital laid out in yarn, etc., would be tripled. The rate of profit could only remain the same if the yarn, etc., had also fallen three times in value or there had been a threefold reduction in wages.

In the first case the 10 yards cost 10 (2s. $2\frac{2}{5}$ d.)=£1 2s.

In the second case the 30 yards cost 30 (ls. $4\frac{4}{5}$ d.)=£2 2s. (but in the first case 30 would have cost £3 6s.)

Let us now assume that the cost of the yarn, etc., falls threefold in the second case as well.

Thus in the first case the 10 yards cost £1 2s., and one yard costs 2s. $2\frac{2}{5}$ d.

^a Hence.—Ed.

In the second case the 30 yards cost £1 2s. and one yard costs $8\frac{4}{5}$ d.

In this case too, the total amount of profit (and wages) is as much for the 30 yards as it was previously for the 10; despite the big fall in the price of the commodity, of each individual yard. The rate of profit is the same on the individual yard, for in the first case it comes to $7\frac{1}{5}$ d. on an outlay of ls. $7\frac{1}{5}$ d. In the second case the ratio is $2\frac{2}{5}:6\frac{2}{5}$. In both of them the ratio is 3:8. But from the point of view of the individual yard the amount of profit is reduced. In the first case it was $7\frac{1}{5}$ d., while in the second it is now only $2\frac{2}{5}$ d.²⁹

[XV-950] If 300 yards are the work of 10 men, who previously produced 100 yards, there would be in the first case 30 yards from 1 man, in the second 10 yards from 1 man. In the first case the yard contains $\frac{1}{30}$ of a day's labour, in the second case $\frac{1}{10}$.

Let us therefore assume that the price of the yarn, etc., remains the same, e.g. = x ; then in one case the price of the yard = $x + \frac{1}{10} M$,^a in the other it = $x + \frac{1}{30} M$. The 100 yards cost in the first case $100(x + \frac{1}{10} M) = 100x + 10 M$; and in the second $300(x + \frac{1}{30} M) = 300x + 10 M$. It is clear, therefore, that if the wage remains the same, e.g. $\frac{1}{2}$ of the day's labour, the *amount of profit* will remain the same in both cases. In the first case the profit on 100 yards = $\frac{100}{20} M = 5 M$, and in the second case the profit on 300 yards = $\frac{300}{60} M = \frac{100}{20} M = 5 M$. The amount of profit is the same here because 100 ($\frac{1}{20}$) is not more than 300 ($\frac{1}{60}$). But the *rate of profit* has fallen; for in the [first] case the outlay on one yard = $x + \frac{1}{20} M$ and the profit = $\frac{1}{20} M$. In the second case [the outlay] = $x + \frac{1}{60} M$ and the profit = $\frac{1}{60} M$. If the man's cost = 20s., and the x (yarn, etc.) = 1s., then $x + \frac{1}{20} M = 1s. + 1s. = 2s.$ And the profit similarly = $\frac{1}{20} M = 1s.$ The price would therefore be 3s., and the profit within that would be $\frac{1}{3}$. In the other case $x + \frac{1}{60} M = 1s. + 4d. = 1s. 4d.$ And the profit would = $\frac{1}{60} M = 4d.$ Therefore the price = 1s. 8d. and the profit within that would be $\frac{1}{5}$. Disregarding this fall in the rate of profit, the *total amount of profit* on each yard would in the first case = $\frac{1}{20} M$ and in the second $\frac{1}{60} M$, hence 3 times less. But the latter profit is repeated on 3 times as many yards as the former.

Let us posit the second case, namely that the yarn becomes cheaper TO THE SAME DEGREE AS weaving becomes more productive.

Under the old mode of production 100 yards would have been produced by 10 men. The price of the whole product =

^a "M" designates one worker's working day.—Ed.

= 100 x + 10 M. The price of a single yard = $x + \frac{1}{10} M$. And the profit on that is $\frac{1}{20} M$.

In the second case the yarn, etc., for 300 yards costs $\frac{300}{3} x = 100 x$. The 300 yards cost $100 x + 10 M$. The price of a single yard is $\frac{2}{3} + \frac{1}{30} M$. The profit = $\frac{1}{60} M$. So if x again = 1s. and 1 M = 20s., the yard cost $\frac{1}{3}s. [+ \frac{20}{30}s. = \frac{1}{3} [s.] + \frac{2}{3}s. = 1s.$ The profit out of this would be $\frac{1}{60} M = \frac{20}{60}s. = \frac{1}{3}s.$ The rate of profit would therefore be $\frac{1}{3}$ of the whole, as in the old production. But the amount of profit on a single yard would in the first case be $\frac{1}{20} M$ or 1s.; in the second it would only be $\frac{1}{60}$ of a man = $\frac{1}{3}s.$, hence 3 times less. The profit on the total number of yards would be the same, for 100 or 100s. = $300 \times \frac{1}{3}s. = \frac{300}{3} = 100s.$

Assume a third case, in which it is not the yarn but the wage which falls in the same measure as weaving becomes more productive.

In the old mode of production the yard = $x + \frac{1}{10} M$. The profit = $\frac{1}{20} M$. In the new mode of production the yard = $x + \frac{1}{30} M$. But the profit = $\frac{2}{90} M$. The outlay is $x + \frac{1}{30} M$. Therefore if $x = 1s.$ and 1 M = 20s., [XV-951] $\frac{1}{30} M = \frac{20}{30}s. = \frac{2}{3}s.$ $\frac{3}{90} M = \frac{1}{30} M = \frac{2}{3}s.$ and $\frac{1}{90} M = \frac{2}{9}s.$ The profit would therefore be $\frac{4}{9}s.$

The price of the commodity = $1\frac{2}{3}s.$ The profit contained within that = $\frac{4}{9}s.$ The price of the commodity = $1\frac{5}{9}s.$, of which $\frac{4}{9}$, hence more than $\frac{1}{4}$, is profit.

Positing the fourth case: yarn and wages fall equally.

So we have the following four cases:

Case I. Price of yarn, etc., remains the same in both modes of production = 1s. per yard. The value of a man or a day's labour = 20s.

a) 10 M produce 100 yards, 1 M 10 yards; 1 yard therefore contains $\frac{1}{10}$ of a man = $\frac{20}{10}s. = 2s.$ The yard therefore costs 1s. yarn + 2s. labour = 3s. The 100 yards cost 300s. = £15. If the rate of surplus value amounts to half the labour, the profit on 1 yard = 1s. = $\frac{1}{3}$ of the [price of the] product. Or, calculated on the outlay, the rate of profit is 1s.:2 = 50%. On the 100 yards it is 100s. = £5 = 5 men.

b) 10 M produce 300 yards, 1 man 30 yards; 1 yard therefore = $\frac{1}{30} M = \frac{20}{30}s. = \frac{2}{3}s.$ A single yard therefore costs 1s. (yarn, etc.) + $\frac{2}{3}s.$ (labour) = $1\frac{2}{3}s.$ The 300 yards cost 300 $(1 + \frac{2}{3})$ or 500s. = £25. Rate of surplus value as previously, thus the surplus value on 1 yard is $\frac{2}{6}s. = \frac{1}{3}$ of the product. Or, calculated on the outlay, it is $\frac{2}{6}$ or $\frac{1}{3}s.$ to 1s. + $\frac{1}{3} = \frac{4}{3}s.$ Therefore the rate of profit = 1:4 = 25%. On the 300 yards, = 300 $(1 + \frac{2}{3}s.) = 500s.$, this makes $\frac{300}{3}s. = £5 = 5 M$ as above.

In this case, I [b)], the rate of profit falls, the *amount of profit on a single yard falls from 1s. to $\frac{1}{3}$ s., from $\frac{1}{20}$ M to $\frac{1}{60}$ M.* The amount of profit on the whole product remains the same.

Case II. The price of yarn, etc., falls under the 2nd mode of production in line with the [rise in the] productivity of the weaving, hence a 3fold fall. The yarn, etc., for the 300 yards then costs as much as it cost previously for 100, namely 100s. A yard therefore costs $\frac{1}{3}$ s. yarn, etc. + $\frac{2}{3}$ s. labour = 1s. The 300 yards cost 300s. = £15, as in case a) of I. The profit = $\frac{1}{3}$ s. = $\frac{1}{3}$ of the product. Or, calculated on the outlay, $\frac{1}{3}$ against $\frac{2}{3}$ = 50%, which is *the rate of profit.*

In this case the rate of profit remains the same, while the *amount of profit on a single yard, compared with Ia), falls from 1s. to $\frac{1}{3}$ s.* The amount of profit on the whole product remains the same, for $\frac{300}{3}$ = 100s. = £5 = 5 M.

Case III. The price of yarn, etc., remains the same as under I, while the rate of surplus value undergoes a threefold increase with the tripling of productivity:

Yarn for the 300 yards costs 300s. One yard costs 1s. yarn + $\frac{2}{3}$ s. labour = $1\frac{2}{3}$ s., as under I b). But now only $\frac{1}{3}$ s. = $\frac{2}{9}$ s., of the $\frac{2}{3}$ s. labour represents wages. Hence the profit = $\frac{4}{9}$ [s.] = $\frac{2}{5}$ of the product = 40% on the product.³⁰ [XV-952] The outlay is 1s. yarn + $\frac{2}{9}$ wages = $1\frac{11}{9}$ s. And the profit is $\frac{4}{9}$; the ratio is therefore 4:11, which gives a *rate of profit of $36\frac{4}{11}\%$.* The rate of profit is lower than in I a) and II, but higher than in I b).

The 300 yards cost $300(1 + \frac{2}{3}) = 500$ s. = £25, as in I b). The *amount of profit on a single yard is $\frac{4}{9}$ s.,* whereas under I a) it came to 1s.; under I b) it was $\frac{1}{3}$ s., under II it was $\frac{1}{3}$ s. Therefore in comparison with I a), at $\frac{9}{9}$, it has fallen by over a half; in comparison with I b), at $\frac{1}{3}$ s., or $\frac{3}{9}$, it has risen by $\frac{1}{9}$; and similarly in comparison with II, where the amount of profit was also $\frac{1}{3}$ s., or $\frac{3}{9}$. The amount of profit on the whole product rises from 100s. to $133\frac{1}{3}$ s. It is now $6\frac{2}{3}$ M instead of 5 M.

Case IV. The price of yarn falls in the new mode of production, and similarly the rate of wages, in the same proportion as the productivity of labour grows.

As before, there are 10 men producing 300 yards. 1 M for 30 yards. 1 yard = $\frac{1}{30}$ M.

The price of yarn = $\frac{1}{3}$ s. Therefore the price of yarn, etc., for the 300 yards = $\frac{300}{3}$ s. = 100s., as under I and II. The price of the product = $\frac{1}{3}$ s. yarn + $\frac{1}{30}$ M, or $\frac{1}{3}$ s. yarn + $\frac{20}{30}$ s. = $\frac{1}{3} + \frac{2}{3}$ = 1s., as under II and I a).³¹ But out of this 1s., or $\frac{9}{9}$ s., $\frac{4}{9}$ are profit. And if we calculate the outlay, we have $\frac{1}{3}$ s. + $\frac{2}{9}$ s. wages, or $\frac{3}{9} + \frac{2}{9}$, or

for the first part of the work...

the first part of the work is to be done in 30 days...

the second part of the work is to be done in 40 days...

the third part of the work is to be done in 50 days...

the fourth part of the work is to be done in 60 days...

the fifth part of the work is to be done in 70 days...

the sixth part of the work is to be done in 80 days...

the seventh part of the work is to be done in 90 days...

the eighth part of the work is to be done in 100 days...

Day	Work	Time	Cost	Profit	Loss	Net	Percentage
I	300	1 1/2 hr	500	75 + 1/2 sh. = 125 sh.	100	25	50%
II	300	1 hr	300 sh.	75 + 1/2 sh. = 125 sh.	100	25	50%
III	300	1 1/2 hr	500	75 + 1/2 sh. = 125 sh.	100	25	50%
IV	300	1 hr	300 sh.	75 + 1/2 sh. = 125 sh.	100	25	50%
<p>Summary of costs and profits:</p> <ul style="list-style-type: none"> Costs: 500, 400, 300, 200, 100, 100, 100, 100 Profits: 25, 25, 25, 25, 25, 25, 25, 25 Net: 25, 25, 25, 25, 25, 25, 25, 25 Percentage: 50% 							

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$\frac{5}{9}$. The profit is therefore in the ratio $\frac{4}{9}:\frac{5}{9}$, or 4:5, = a rate of profit of 80%. The amount of profit on a single yard is $\frac{4}{9}$ s., as under III, hence higher than under I b) and II but it continues to be more than 50% lower than under I a). The amount of profit on the whole product = $300 \times \frac{4}{9} = 133\frac{1}{3}$, = $6\frac{2}{3}$ M, hence as under III.

If we now compare these 4 cases with each other, we see that in all those cases where the productivity of labour grows, there is a decline not only in the value of the individual commodity and therewith in its price, but in the amount of profit in proportion to the individual commodity, whether the rate of profit rises or falls. The same labour produces 3 times the product; hence $\frac{2}{3}$ less labour is contained in the individual product, and since the amount of profit can be nothing other than a portion of this quantity of labour contained in the individual commodity, the amount of profit on the individual commodity must decline. In all the cases the amount of profit on the whole product does not fall below the original amount of profit, for the number of products increases in the same proportion as the amount of profit on the individual product declines.

The amount of profit remains the same as long as the rate of exploitation remains the same, and the same number of workers are employed, however the amount of profit is divided among the number of commodities; there is no change either in the amount or in the division of that amount between workers and capitalist. Thus under I a), with 100 yards and a profit of 1s. per yard, a profit of 100s. or £5 results; the same with 300 yards and a profit of $\frac{1}{3}$ s. under I b) and II.

In comparing II with I a) we found that the rate of profit remained the same, for in the 2nd case the profit on an outlay of 3s. was 1s. and in the other case it was $\frac{1}{3}$ s. on $\frac{2}{3}$ s. outlay. This happens when, firstly, the rate of wages remains the same, but, secondly, when, as labour becomes more productive in a particular sphere, it becomes more productive in the same proportion in the spheres which provide constant capital, yarn, etc. In this case the rate of profit remains the same because the proportional values of the raw material, etc., contained in the individual commodity and of paid labour, the proportion between the two, remains the same; just as does the ratio between paid [XV-953] and unpaid labour.

In I b), where the productivity of weaving increases threefold and wages remain the same, but the yarn, etc., retains its old price, we have a fall in the rate of profit. In this case the rate of profit falls from 50% to 25%, by half therefore. It falls because the value of the added labour³² falls in relation to the value and not merely

in relation to the quantity (as under II) of the constant capital *applied*, and the division of this added labour between capitalist and worker remains the same; under II, where the *rate of profit remains the same*, the total price of the individual commodity falls in the same proportion as the productivity of labour [rises]. Previously³³ the yard cost 3s., under II it costs 1s. Under I b), in contrast, it costs $1\frac{2}{3}$ s. Here, therefore, where the *rate of profit falls*, the total price of the commodity does not fall in the same proportion as the productivity of labour in the weaving process [increases].

We have equally a fall in the *rate of profit* under III, where wages fall in the same proportion as the productivity of labour [rises]. But raw materials, etc., remain the same here as before the threefold increase in the productivity of labour, as under I a). The value of the whole of the labour³⁴ falls here in relation to the constant capital, and with it the rate of profit too. *But the amount of profit on the whole product* rises here, whereas in the 3 cases I a), I b), and II, it remained the same.

The amount of profit, namely, in I a), $=100 \times 1s. = 100s.$ In I b) $it = 300 \times \frac{1}{3}s. = 100s.$ And in II $it = 300 \text{ yards} \times \frac{1}{3}s. = 100s.$; namely in I a) the *number is 100 yards* ($=100s.$) $\times 1s.$ In I b) the number is $300 \text{ yards} \times \frac{1}{3} = 100s.$ And in II the number is $300 \text{ yards} \times \frac{1}{3}$. Nevertheless, the yard costs 3s. in the first case, $1\frac{2}{3}s.$ in the 2nd, and only 1s. in the 3rd. In the first case as in the third the $profit = \frac{1}{3}$ of the product.

In Case III the amount of profit rises, for 300 ($\frac{4}{9}$) is more than 100×1 or $300 (\frac{1}{3})$, which only $= 300 \times \frac{3}{9}$. The amount of profit on the individual [product] has fallen (compared with I a)) from $\frac{9}{9}$ to $\frac{4}{9}$; more than a half. But the number of yards has tripled. The amount of profit on a single yard has therefore not fallen in the same proportion as the number of yards has increased. Hence an increase in the amount of profit on the *product taken as a whole*.

In Case IV, finally, the price falls as under II to a 3rd of I a), from 3s. to 1s. But there is a rise in the rate of profit and the amount of *profit on the whole product*. The amount of profit on the individual yard, as under III, $= \frac{4}{9}s.$, but this amount of profit forms a higher rate on the constant capital in the individual yard.

Let us put these results together.³⁵

[XV-956]³⁶ These results follow from the foregoing investigation: If the increase in the *productive power of labour* has an equal effect on all components of the commodity, as under II and IV, the price of the commodity will fall in the *same proportion* as the productivity of labour increases. In this case, therefore, where the

Number of yards	Price of yard	Total product	Outlay	Profit	Labour in a yard	Rate of surplus value	Amount of profit on 1 yard	Profit on total amount	Rate of profit
I a) 100	3s.	300s.	1s. yarn+1s. wages	1s.	$\frac{1}{10}$ M	100% = $\frac{1}{20}$ M	1s. = $\frac{1}{20}$ M	100s. = 5 M	50%
I b) 300	$1\frac{2}{3}$ s.	500s.	1s. yarn + $\frac{1}{3}$ s. wages	$\frac{1}{3}$ s.	$\frac{1}{30}$ M	100% = $\frac{1}{60}$ M	$\frac{1}{3}$ s. = $\frac{1}{60}$ M	$\frac{300}{3}$ = 5 M	25%
II) 300	1s.	300s.	$\frac{1}{3}$ yarn + $\frac{1}{3}$ s. wages	$\frac{1}{3}$ s.	$\frac{1}{30}$ M	100% = $\frac{1}{60}$ M	$\frac{1}{3}$ s. = $\frac{1}{60}$ M	$\frac{300}{3}$ = 5 M	50%
III) 300	$1\frac{2}{3}$ s.	500s.	1s. yarn + $\frac{2}{9}$ s. wages	$\frac{4}{9}$ s.	$\frac{1}{30} = \frac{3}{90}$ M	200% = $\frac{2}{90}$ M	$\frac{4}{9}$ s. = $\frac{2}{90}$ or $\frac{1}{45}$ M	$\frac{300 \times 4}{9} = 6\frac{6}{9}$ M	$36\frac{4}{11}$ [%]
IV) 300	1s.	300s.	$\frac{1}{3}$ yarn + $\frac{2}{9}$ s.	$\frac{4}{9}$ s.	$\frac{1}{30} = \frac{3}{90}$ M	200% = $\frac{2}{90}$ M	$\frac{4}{9}$ s. = $\frac{2}{90}$ or $\frac{1}{45}$ M	$\frac{300 \times 4}{9} = 6\frac{6}{9}$ M	80[%]

Composition of Capital

Total outlay	Total product	Constant	Variable	Surplus value	Amount of profit	Rate of profit
Under I a) 200s.	300	I a) 100	100	100	100	50%
I b) 400	500	I b) 300	100	100	100	25%
II) 200	300	II) 100	100	100	100	50%
III) $366\frac{2}{3}$	500	III) 300	$66\frac{2}{3}$	$133\frac{1}{3}$	$133\frac{1}{3}$	$36\frac{4}{11}$ %
IV) $166\frac{2}{3}$	300	IV) 100	$66\frac{2}{3}$	$133\frac{1}{3}$	$133\frac{1}{3}$	80%

productivity of labour is tripled, the price of the individual yard undergoes a 3fold reduction, it falls from 3s. to 1s. Similarly, the *ratio* of the IMMEDIATE LABOUR contained in the commodity to the REALISED LABOUR contained in it remains the same. If for that reason the value of the wage remains the same, or the ratio between paid and unpaid labour, the division of the product of the IMMEDIATE LABOUR between capitalist and worker, then the *ratio between variable and constant capital* also remains the same, hence the *rate of profit*. Compare II with I a).

If, on the other hand, wages (the value of labour capacity), and therefore the necessary labour time, fall in the same proportion as the productivity of labour grows (the middle stages, e.g. a fall, but not a very deep one, only bring about a modification in the level), the *rate of profit* will rise, as in IV, and the *amount of profit* on the whole product will grow. (The rate of profit = the ratio of the amount of profit to the capital laid out.)

This is the situation with cases II and IV, where the price falls from 3s. to 1s.; in II the rate of profit remains the same and the *total amount* of profit ditto; in IV the rate of profit rises and the *total amount of profit* ditto.

I b) and III, in contrast, both represent cases in which the productivity of labour is multiplied by three in the FINISHING PROCESS, but the value of raw material, etc., remains UNALTERED. Here there is a reduction in I b): if wages remain the same, the *proportion* of variable to constant capital falls to the same degree as constant capital grows. Hence a fall in the rate of profit. If, as in III, the value of labour falls,³⁷ the rate of profit admittedly falls, because the surplus value is calculated on a greater total capital. But, firstly, the total capital does not rise as high as in I b), where firstly the constant capital rises from 100 to 300 and secondly the variable capital, 100, remains the same, the total capital therefore rising by 200 (the excess of the constant capital in I b) over the constant capital in I a); whereas the surplus value remains the same as in I a); whereas in III the constant capital admittedly rises from 100 to 300, but the variable capital, in contrast, falls from 100 to $66\frac{2}{3}$, the total capital therefore does not rise by the whole amount of the growth of the constant capital; and, secondly, the surplus value grows from 100 to $133\frac{1}{3}$, therefore rises by $33\frac{1}{3}\%$ in comparison with I a). The rate of profit therefore falls, but not in the same proportion as in I b), and the *amount of profit* on the whole thing rises, because the rate of profit is admittedly lower than in I a), but the AGGREGATE surplus value is greater, or, in other words, the rate of profit in III falls in a lesser proportion, as

compared with I a), than the total capital advanced in III rises, as compared with I a).

We can therefore see that with a fall in the *price of the individual commodity* resulting from an increase in the productivity of labour and therefore a simultaneous increase in the *numbers* of these LOWER-PRICED COMMODITIES, the rate of profit may fall, or rise, or remain the same. At least the AGGREGATE amount of profit remains *always the same*, if the same number of workers remain in employment (and wages do not rise); it may rise if the further condition is added to these that wages fall as the productivity of labour increases. But *the aggregate amount of profit only remains equal* under the condition that the same number of workers remains in employment. This is only possible, in case NO CHANGE OF VALUE occurs in the constant capital, if the capital outlay is increased. For example, compare I b) with I a). If the expendable capital remained the same in I b) as it was in I a), namely 200, the amount of profit could not remain the same. $\frac{3}{4}$ of this 200 would now have to be laid out in constant capital, and $\frac{1}{4}$ in variable capital. Therefore 150 in constant capital and 50 in variable capital. 100 represented 10 M; 50 would therefore only represent 5.³⁸ And we should have:

Constant capital	Variable capital	Surplus value	Product	Number of yards	Price of yard	Rate of profit	Amount of profit
150[s.]	50[s.]	50s.	250s.	150	1 $\frac{2}{3}$ s.	25%	50[s.]

The capital laid out would be the same. The number of yards would have grown from 100 to 150, hence by 50%; the amount of profit, on the other hand, would have fallen from 100 to 50, hence by 50. The exploitation of labour would remain the same; *hinc* the rate of surplus value too. Both the amount of profit and the *rate of profit* can remain the same if, as in II, productivity grows simultaneously and *in the same measure* in those branches of industry which produce constant capital and those which USE IT UP. It can only grow if, *apart from this condition*, another is added to it, that there is a fall in wages.

[XV-954]³⁶ It would appear, according to this, that the rate of profit cannot *fall* unless:

1) the *relative value of labour capacity* rises (while the value of the constant capital remains the same). This is Ricardo's assertion, but he does not include the restrictive clause, without which the statement is absolutely incorrect.³⁹

2) or there is a rise in the *value of constant capital in relation to variable*. And the latter would appear to be restricted to cases

where the productive power of labour does not rise *equally* and *simultaneously* in all the branches of production which contribute to produce the commodity.

Let us assume a threefold increase in productivity in spinning and weaving. If productivity in the production of cotton itself is simultaneously tripled, the proportion of constant to variable capital *SO FAR* remains the same (in so far as the raw material comes into consideration). If £100 can command 10⁴⁰ men, and these ten previously worked up cotton for £300, and they now work up 3 times as much cotton, 3 times *x* cotton now cost only £300, which is what *x* cotton cost previously, since the *value of cotton* has fallen three times. Even in this case a *fall in profit* would prove not that the yield of cotton cultivation had declined, but only that it had not become more productive in *the same ratio* as cotton manufacturing. Therefore only a *relative* reduction in its productivity, despite the absolute increase in it. Ricardo, however, thinks that agriculture must become more unproductive absolutely. It would only demonstrate that industry and agriculture do not develop to *the same degree* in *bourgeois* production. If they do not do this, that alone is sufficient to explain the decline in the rate of profit.

But the presupposition that the value of constant capital, despite the increase in its amount, falls in *the same proportion as the productivity of labour increases*, can be reduced to the presupposition that the value of constant capital *consists of present labour alone, and no past labour enters into reproduction*. The value of the past labour does indeed fall once its product can be reproduced more cheaply. If, with a threefold increase in the productivity of spinning, a worker sets 1,800 spindles into action instead of 600, it must be assumed that 1,800 spindles could now be reproduced with the same labour as was required previously for 600. We shall postpone any further discussion of this question, and pass on to why we took up this investigation again at all at this point.

We have seen that in all cases where the productivity of labour grows, hence the same amount of labour is represented in a greater quantity of commodities, hence the price of the individual commodity falls (because the value does), *the amount of profit made on the individual commodity is reduced*, whether the rate of profit rises, falls, or stays the same, and even if there is an increase in the amount of profit on the total product.

// It turns out, incidentally, that the investigation always goes awry when one looks at the *price of the individual commodity in itself*. Or when one merely measures the labour IN REGARD TO THE QUANTITY OF COMMODITY PRODUCED BY IT. Everything depends on the magnitude of

the total amount of capital laid out. Even if we analyse the price of the individual commodity, e.g. in the above case, where the price of the yard falls from 3s. to $1\frac{2}{3}$ s.; if we know that 1s.=yarn, etc., $\frac{1}{3}$ s.=wages and $\frac{1}{3}$ s.=profit, we do not know whether the total amount of profit has remained the same or not. For example, in case I b), if the capital laid out continues to be, as before, only 200, the amount of profit falls; if it is 400 it remains the same. Even in case III, if *the capital* remains *the same* at this price of $1\frac{2}{3}$ s. per yard, while the rate of wages is reduced, the amount of profit on the whole product does not grow.

The situation would then be as follows:

Constant capital	Variable capital	Surplus value	Product	Number of yards	Price of yard	Rate of profit	Amount of profit
$163\frac{7}{11}$	$36\frac{4}{11}$	$72\frac{8}{11}$	$272\frac{8}{11}$	$163\frac{7}{11}$	$1\frac{2}{3}$ s.	$36\frac{4}{11}$	$72\frac{8}{11}$

Total capital is 200 instead of 100 as previously.⁴¹ //

[XV-955] The phenomenon—which derives from the nature of capitalist production—that with a growing productive power of labour the price of the individual commodity falls, the number of commodities increases, the *amount of profit on the individual commodities declines in all circumstances*, the rate of profit rises, falls or remains the same, but the *amount of profit on the total number of commodities* remains the same or *grows* (even when it *falls* in the cases we have explained, in which the capital ought to have grown but remains *the same*, it in fact remains the same or grows, because the capitalist who applies the improved mode of production sells *below* the old market price *alias* above *his own* individual production price, until competition has balanced this out; the second requisite, the growth of the capital laid out, proceeds hand in hand with this period of adjustment)—this phenomenon only presents itself on the surface in: a fall in the amount of profit on the individual commodity, a fall in its price, a stable or growing amount of profit on the increased total number of commodities. This is conceived in such a way that the capitalist, of his own free choice, adds less profit on each single commodity but finds compensation through the increased number of commodities he sells. This view rests on the notion of “PROFIT UPON ALIENATION”,¹⁷ which is in turn for its part abstracted from the attitude of mind of *merchants’ capital*, of *commercial capital*. If a merchant were to sell 100 yards, which cost him 3s. per yard (I a), hence 300s. per year, with a 10% increase in the price, he would make a profit of 30s. And he would sell one yard at 3s. $\frac{3}{5}$ d. ($\frac{3}{5}$ d. or $\frac{18}{5}$ d. or $\frac{36}{10}$ of a penny= $\frac{3}{10}$ s., since 3s.= 3×12 d.=36d., hence $\frac{3}{10}$ s.= $\frac{36}{10}$ d.). If,

in contrast, he sells 300 yards (case II), each yard costing him 1s., he must equally make a profit of 30s. in order to gain 10% on the capital of 300s. But whereas the first merchant adds $\frac{3}{10}$ s. to each yard, this one only needs to add $\frac{1}{10}$ s.; the first merchant adds $3\frac{3}{5}$ d., he only adds $1\frac{1}{5}$ d. He therefore sells a yard at 1s. $1\frac{1}{5}$ d., whereas the first merchant sells it at 3s. $3\frac{3}{5}$ d., and he makes the same profit thereby as the first merchant. If he sold at 1s. $1\frac{1}{2}$ d., he would make a much greater profit than the other, despite adding much less to the individual yard, and even so he would still sell it more than twice as cheap.

If we now look at merchants' capital as a whole, e.g. here the whole section of MERCANTILE CAPITAL INVESTED IN THE SELLING OF LINEN, it is clear that it by no means depends on merchants' capital whether it has 100 or 300 yards to sell, and whether it has to advance 300s. for 100 yards or for 300, whether its cost price per yard is 1s. or 3s., and it therefore depends just as little on merchants' capital whether it makes its 10% profit by adding $3\frac{3}{5}$ d. per item on a smaller number of yards or $1\frac{1}{5}$ d. per item on a greater number. The rate of surcharge itself—again from the point of view of the whole—depends just as little on the merchant; it is determined rather by the general law of AVERAGE PROFIT, namely that he can obtain the same profit, e.g. 10%, for *capital of equal magnitude*, whatever particular sphere it may be invested in, and however much or however little labour it may set in motion. This is just as valid for capital which remains constantly in the *process of circulation* as it is, let us say, for fixed capital, which never (*in natura*) dwells anywhere but in the sphere of the *direct process of production*. The *production price* of industrial capital appears as the *cost price* for commercial capital. But since industrial capital does actually buy, does replace on the market the elements, in part of its constant capital, in part of its variable capital (the latter in so far as the value of labour capacity is determined by the price of the worker's means of consumption)—and since these elements pass from the hands of the merchant into the hands [XV-957]⁴² of the industrialist, it is clear that not only does the production price of one commodity pass over into the cost price of the other, but the *industrial production price* of one commodity together with the *commercial addition to this price* appear as an element in the cost price of the other commodity.

The *industrial production price* of one commodity always enters into the *cost price* of the other, even when the industrialists exchange directly, without the interposition of merchants. The weaver, for example, pays the production price of the yarn. This

therefore forms an outlay for him, it enters into his constant capital, it is an advance for him, an element in the cost price. It is therefore not only in the form of interest that SURPLUS VALUE, even from the point of view of the individual capitalist, forms a part of his advances, enters into the cost price of his commodity. But this is also the case for all the elements of his constant capital, and for wages (variable capital) in so far as the value of labour capacity is determined by the production price of the worker's means of consumption.

Profit—and therefore the difference between price of production and cost price—appears to him as a *surplus over the cost price* only as regards his own commodity. As regards all the other commodities which *enter* into the price of production of his own commodity, *their cost price*, hence the costs of his production, *appear to him* as determined by the price of production, and profit therefore appears as *an element which enters into the price of production, not as a result which emerges from it.*

This is the case if the price of production is considered quite independently of the interposition of merchants' capital. But how do things stand with the latter's inclusion? Is the additional charge it makes to be regarded as a merely *nominal raising of the price over the value*, or how otherwise? If this is the case on an average—since the commercial price of the commodities enters as an element into their reproduction—then all commodities are sold *above* their value. For included in the price of production are, 1) the whole of the capital advanced, and 2) the whole of the surplus value, divided among the different capitals *pro rata*^a their magnitude. But, firstly, the capital advanced consists of the *objectified labour* in the means of labour, etc., secondly it is replaced by an equal quantity of living labour (wages), and thirdly the whole of the surplus value comprises the totality of the surplus labour. So if yet a further element is added to this, which raises the price of production, the price of the total commodity is > than its value, and the price of the individual commodity > than its price of production, i.e. greater than its price as determined by the value of the total commodity. But this seems to be the case with commercial capital.

A distinction must be made in dealing with capital included in the process of circulation.

D'abord,^b functions are confused with merchants' capital, or are

^a In proportion to.—*Ed.*

^b In the first place.—*Ed.*

to be found in practice *plus ou moins*^a bound up with it, which *belong to the process of production itself*, although they do not proceed in the workshop of the producer.

The first of these functions is the *transport industry* (THE CARRIAGE OF COMMODITIES). The use value of the commodity is admittedly in its finished form, but this use value does nevertheless undergo an alteration. Its *location, its spatial existence*, is changed. This process belongs to the process of production itself. The commodity is not on the market, hence is not yet in circulation, before it has passed through this change of location. Everything that occurs in connection with this process belongs to the process of production.

Secondly: The use value of the commodity must first be divided into the amounts appropriate to it as use value, it must be separated out, before the commodity really exists as a commodity. 1 qr of wheat, for example, first exists as a quarter when a quarter has been weighed out from the total amount of wheat, etc. This measuring, weighing, *real* reduction of the commodity to the units of measurement which are appropriate to it as a use value—and which at first only exist notionally—forms a part of the preparation of the commodity, a part of its *process of production*. It is a process which the commodity must pass through before it is present wholesale or retail as a commodity, and it is an operation which use value [XV-958] must itself pass through before it is ready as *use value of the commodity*. Since capitalist production produces on a large scale, whereas individual consumption takes place on a small scale, this operation constitutes a very significant part of the RETAIL trade. The packer, WAREHOUSEMAN, weigher, etc., in the workshop belong to the productive workers just as much as do the spinner, dyer, etc.; the capital expended on those functions is just as much productive capital as that directly laid out for spinning, etc. In the same way, this employment of capital, even when it takes place and is repeated in capital's sphere of circulation, belongs entirely to the *process of production* of the commodity.

Thirdly: What is the situation with the fixed and circulating capital which is necessary for the conservation, storage, preservation of the commodities whilst they are on the market, hence have already left the actual production process and entered the sphere of circulation?

The answer to this is most obvious when we look first at commodities which are only placed on the market once a year,

^a More or less.—*Ed.*

because they can only be reproduced once a year, as e.g. corn, cotton, etc. If the COTTON IMPORTERS in Liverpool had NO WAREHOUSES, DOCKS, etc., the manufacturer in Manchester, etc., would himself have to store the quantity of cotton he needed during the year, expending on the one hand capital for WAREHOUSES, buildings (fixed capital), and on the other hand variable capital, to buy the wage labour⁴³ to perform the OPERATIONS necessary for the preservation of the cotton. Exactly the same situation holds for the miller and his corn, the baker and his flour, etc. All these things are *conditions of production*, and the operations and expenses, etc., required for conservation and storage themselves belong among the conditions of production. The only difference is that a part of the capital required for the manufacture of COTTON or bread, which has these particular functions allotted to it, is to be found and operates in the hands of COTTON IMPORTERS, CORN DEALERS, etc., instead of COTTON MANUFACTURERS, MILLERS and BAKERS. But the capitals engaged in these functions are directly productive capitals, they are engaged in the process of production although they are to be found in the sphere of circulation. They are parts of productive capital which are to be found OUT OF DOORS (i.e. outside the immediate workshop). This is true for all capitals invested in WAREHOUSING, in so far as the commodities WHICH ARE KEPT AND PRESERVED form the elements of a further process of production; their WAREHOUSING and PRESERVING would be the responsibility of the immediate producer if it had not been MADE OVER, through the division of labour, TO OUT OF DOORS CAPITALISTS.

We come now to the second sort of commodity, those which enter directly into individual consumption. It is clear from the outset that, in so far as they form the workers' means of consumption—IN FACT variable capital which has shed its monetary form—the preservation and WAREHOUSING of these commodities *belongs among the direct conditions of the process of production*. They form part of variable capital in exactly the same way as the first sort forms part of constant. Therefore the same thing is true here as well. But looking now at the WAREHOUSING of commodities which do not form part either of constant or of variable capital, can we say of them that the capital and labour required for this enter the *direct process of production* of the commodities? Certainly not. Nevertheless they do enter by a roundabout route. They enter into the *direct cost of consumption*. WAREHOUSING of the first sort enters into the cost of *industrial consumption*, hence of direct production; that of the second sort enters into the cost of *individual consumption*, hence the *cost of consumption*. If all such

commodities, instead of being bought *au fur et à mesure*,^a had to be drawn, e.g. AT ONCE, to the amount of their production over a year e.g., [XV-959] the private consumers would have to expend capital for buildings to store them and for wage labour to preserve those commodities in a usable condition. Consumption costs *en général*—e.g. the fact that I must have my furniture cleaned, my house scrubbed, my meat cooked, my shoes polished—do not enter the commodity's process of production and therefore do not enter its price of production. They only occur after the commodity has ceased to be a commodity and become a mere use value. But in so far as the costs of consumption are anticipated the consumer receives the commodity in a form ready for consumption, in a form in which the price of production requires no additional private payment. For example, if yarn is manufactured and linen woven at home, the weaving belongs to the cost of consumption of the yarn. If it is woven industrially, the weaving process belongs to the cost of production. And so it is in the case mentioned above. If I have my meat cooked at home, the cooking belongs to its cost of consumption. If I get it ready cooked from the cook-SHOP, it belongs to its cost of production, it enters into its production process, but it also emerges from the production process in a more advanced form, and it enters into the process of consumption in a more finished form.

To that extent, then, the WAREHOUSING of the second sort of commodity, which does not enter as an element into either constant or variable capital, is also included in the *direct process of production*. And the capital employed therein is directly *productive capital*. Productive capital can in general have 2 meanings: 1) capital entering directly into the production process; 2) capital which enters into the process of reproduction (which includes circulation).

In connection with this 3rd category, capital INVESTED IN WAREHOUSING (which includes storage and preservation), it must be noted: these actions are only more productive in so far as they are required by the AVERAGE conditions of production. If instead the markets are overstocked, etc., goods cannot be sold, there follows a STOPPAGE OF COMMODITIES IN THE CIRCULATING RESERVOIRS; if this results from an *interruption* in the process of circulation, it belongs to the *faux frais de production*^b for the industrial producer. It increases the *cost price* for him by contracting the difference between price of

^a Piecemeal as required.—Ed.

^b Overhead costs of production.—Ed.

production and cost price. The FINAL market price is not increased thereby, but, rather, mostly stands in an inverse ratio to the *faux frais*, just as do transport costs, when they arise from blockages of this kind in the process of circulation, e.g. when a commodity which is sent from Manchester to China finds the markets overstocked there, travels from there to Australia, suffers the same fate here, and is finally disposed of in South America.

Apart from that, what all these INVESTMENTS OF CAPITAL IN TRANSPORTING, DIVIDING ACCORDING TO MEASURE AND WEIGHT, AND WAREHOUSING OF COMMODITIES have in common is that they are employed in processes which *directly alter and affect the use value of commodities*, give it another form, whether through change of place or through a real reduction of the use value into parts corresponding to its natural quantities, or through the preservation of that use value. It is precisely the direct relation of these processes to the use value of the commodity as use value which makes them into directly *productive processes* and the capital employed in them into *PRODUCTIVE CAPITAL, EMPLOYED IN PECULIAR SPHERES OF IMMEDIATE PRODUCTION, ACCORDING TO THE GENERAL DIVISION OF LABOUR.*

It was necessary to strip off these FEATURES OF THE CIRCULATING CAPITAL—in other words to separate them from the CIRCULATING CAPITAL. The processes of production, which continue within the sphere of circulation, extend beyond the direct process of production. This is all the more necessary in that the capital which functions merely in circulation, merchant's capital especially, in part combines these functions too with its own, hence does not step forth in its *pure* form. But *after* these features have been stripped off we have the pure form of circulating capital.

[XV-960] Before we now pass on to this particular kind of capital, it must further be noted:

Firstly: TRANSPORTING, RETAILING (DIVIDING) (MEASURING) AND WAREHOUSING CAPITAL, which have the appearance of belonging to the circulation process, are IN FACT not distinguished from other productive capital except in that they form particular spheres, just as AGRICULTURAL, MINING, MANUFACTURING CAPITAL (alongside their subdivisions) are distinguished only as *particular spheres*; except in that they create different use values. This therefore does not give rise to any new distinctions in the form of *capital in general*,⁴⁴ separate from consideration of the peculiarities of its process of production which arise from the nature of the use value created by it.

Secondly: As in all other spheres of capital, profit here is derived partly from the wage labour directly exploited in these spheres, and partly, when the organic composition of the capital is not

average, e.g. when it contains less variable, more fixed capital, from the share, *pro rata* the magnitude of the capital, of the surplus value created in other spheres of production.

We come now to the particular shapes of capital which are confined within the process of circulation and have absolutely nothing to do with the use value of the commodity and THE DIVERS DEGREES OF ITS FINISHING. They are not only distinguished as particular spheres of application of capital; but they also form a kind of capital which is distinct from productive capital as such.

Since they are only concerned with the functions of the circulation process as such, their peculiar functions must be explained from the form of metamorphosis of the commodity, hence from the movements of form which are peculiar to circulation as such.

Capital is in circulation only *qua commodity* or *qua money*; commodity or money capital. The movement of the commodity (and therefore of commodity capital) is $C—M—C$, selling in order to buy, and, in so far as this process is constantly repeated, selling in order to buy and buying in order to sell. It is this latter movement which makes the metamorphosis of commodities into the metamorphosis of commodity *capital*. For it emerges here that what is in question is not only a CHANGE in the form of commodity and money, but the preservation and increase of value in this process. This is therefore the function of *merchants' capital*. It presents the total movement of the metamorphosis of commodities as a movement of commodity capital, and apart from this change of form and its movement merchants' capital as merchants' capital has no function.

The second is money, in so far as it possesses functions apart from those of being merely means of circulation (the sole form in which it functions in *merchants' capital* (commodity capital) as such, namely as the purely evanescent form of the commodity). As I showed in the first part,^a this reduces itself, these peculiar and apparently independent movements of money which emerge from the metamorphosis of the commodity reduce themselves, to 1) *hoard formation*; 2) the function of money as *means of payment*; 3) the functions of *money as world money*, in which it has a double movement, running backwards and forwards between the national

^a K. Marx, *A Contribution to the Critique of Political Economy*. Part One (present edition, Vol. 29, pp. 359-84).—Ed.

spheres of circulation on the one hand, and movement from its sources of production over the world market and the division of this influx between the national spheres of circulation [on the other].

From the standpoint of the exchange of commodities, as we have seen,^a *hoard formation*—viewed merely as a form of money—is the petrification or autonomisation of the commodity in its first metamorphosis. But here as presence of capital, the *money* which is precipitated as hoard is capital (or at least the aliquot part), productive capital which has completed its process of production and been converted back from money into commodity and from commodity into *more* money. The different determinations of money as hoard now appear as determinations of *money capital*. The *first* form of the hoard, or function of the [XV-961] hoard, was to serve as *reserve fund of coin*. Now, in this quality, in which it has to function as means of circulation held READY, i.e. as means of purchase, it is the part of *circulating capital* which the industrial capitalist (or commercial, which in respect of money capital is *the same thing*) must always keep in store as *money capital*, in order to defray current expenses—to pay wages, to COVER HIS OWN PERSONAL EXPENSES (WHAT HE SPENDS AS REVENUE) and to buy other ingredients of production which need to be paid for in cash.

The second function of money as hoard was to form a reserve fund for *payments*, the fund from which money flows as means of payment. We shall soon come to this point when we arrive at means of payment.

The third function of money as hoard was to be a reserve fund of world money, a fund of means of purchase or payment in foreign markets, and apart from this in particular to represent the form in which new supplies of money for the world market are drawn from the sources of production of money, etc., in exchange for commodities.

Whether the hoard is to serve as reserve fund for *means of payment* in the home market, or as *means of payment and means of purchase* in the foreign market, this form of functioning as *means of payment* or *world money* alters absolutely nothing, IN REGARD TO THE CAPITAL, in the fact that it is the part of *circulating capital* which the industrialist always needs in the form of *money*, just as in the case of the reserve fund of coin.

Finally: The hoard, in so far as it did not function as reserve fund of coin, means of payment and world money, was *hoard as*

^a *Ibid.*, pp. 359-70.—*Ed.*

such, the commodity petrified in its *first metamorphosis*, made independent, and conserved. But for capital the hoard is *capital lying idle*—a part of it lying idle in the form of money, which it is unable to valorise directly in its own business. For the capitalist, who does not share the DELUSIONS of the hoarder, and to whom money has value not as absolute form of the commodity but only as absolute form of capital—self-valorising and functioning value—this form of capital lying idle is *unproductive capital*, loanable capital, which ought at least to be converted into *interest-bearing capital* if he himself is not to utilise it as profit-bringing capital. For the capitalist, therefore, it is money which is to be found on the market as *money capital*. It may be newly accumulated profit, i.e. profit converted into capital. But a part of this capital which lies idle may also flow from rent or other sources of income of the unproductive workers (and even of the productive ones), who want to sell as *capital*, i.e. loan out, a part of their revenue which is available in money.

As far as the *hoard* as such is concerned, whether it serves in any particular function or not, it makes only one operation necessary, that of *preservation*. The costs of preservation can be reduced to buildings, *coffre fort*,^a hence SOME fixed capital; the counting of the hoard; and if it is large, perhaps the wage labour of a number of unproductive workers for the “protection” of the hoard, not against moth and rust, but against thieves.⁴⁵

If it is the exclusive task of particular capitals to perform the operations which emerge from the circulation of capital, these can only be operations which emerge from the functions of circulation as such. Functions *separated off* from the total process of capitalist production, peculiar to the process of circulation, and distinguishing it.

Hence *commodity capital*, *merchants' capital*, *commodity dealers*, as the operation of a particular capital, exclusively concerned with this, have as such nothing else to do but to buy and sell commodities, an operation which costs labour time, but in this case lays claim to the whole labour time, both the capitalist's and that of his wage labourers, clerks, etc. The movement which represents the constant metamorphosis of the commodity appears here as his exclusive *operation*, as proceeding through his *mediating activity* or RATHER the specific activity of capital through which it functions.

[XV-962] Similarly, the function of a specific capital as *money*

^a Safe.—Ed.

capital, in short the *trade in money*, can only obtain content from the specific functions of money—and therefore of capital as money, in its mode of existence as money—as opposed to the functions performed by money as a moment of merchants' capital (where it always acts as means of purchase).

These functions are therefore firstly: *hoard formation* as such, which consists merely in the *preservation* of money precipitated from circulation (capital precipitated in the form of money and profit or REVENUE in general). We have already seen,^a in examining money, that whereas the money hoard is fragmented in pre-bourgeois stages of production, within capitalist production it becomes centralised in large repositories. This is the first function of the money dealer or the trade in money.

The industrial capitalist (like the commercial capitalist) *must* constantly have READY a definite part of his circulating capital in the form of money capital, i.e. as hoard (in its form), as a reserve fund for coin and means of payment, whether at home or abroad. And this part stands in a definite proportion to the scale on which he produces, e.g. to the wages he has to pay every week, etc. And the magnitude of the cash operations currently in progress, e.g. with the merchant. But although *this part is determinate* (changing of course at different moments of reproduction), it is *dissolved* again and again, i.e. as means of purchase and means of payment (here as payment of the balance) its form as hoard is dissolved, the hoard is emptied, and in turn constantly refilled by the sale of commodities or payment for sold commodities. Its parts therefore change constantly; on the one hand it dissolves as means of purchase and means of payment, on the other hand it is constantly reconstituted by the constant conversion of the commodity back into money. *C'est un continuel va-et-vient*^b; by no means the static hoard of the hoarder. Thus the second function of the trade in money consists in constantly receiving the money taken in by the industrialist and the merchant, collecting it as a hoard, and constantly returning it as means of purchase or payment. This operation makes accountancy necessary, constant payment and calculation. This movement of the hoard (money capital)—its constant formation and dissolution—and the maintenance of an equilibrium between the two, is mediated by the activity of the money dealer, who does nothing else. In so far as money in

^a K. Marx, *A Contribution to the Critique of Political Economy*. Part One (present edition, Vol. 29, p. 370).—*Ed.*

^b It is a continual coming and going.—*Ed.*

particular functions as means of payment—a function in which, as we explained previously,^a reciprocal claims have to be calculated, and only the balance has to be paid in money—the money dealer has to perform this function of money as means of payment, to settle the claims, at one time to pay money as a balance, at another time to accept money as a balance. This balancing and mediating operation of money as means of payment is particularly developed in capitalist production, where the whole of production is based on exchange value, on circulation, and therefore accounts must constantly be settled among the producers (and the merchants).

In so far as payment or buying on the foreign market makes special operations necessary, necessitates, creates special forms of transmitting the balance or of money as means of purchase (rate of exchange, etc.) these again form a particular function of the money trade.

In the same way, the RETURN of money from the sources of production in exchange for commodities can achieve independence as a separate operation and function (BULLION dealing, etc.). This is in turn a particular function of the money trade.

Finally, money which lies idle is lent out, i.e. thrown onto the market as money capital; it is borrowed by others, and this appears in turn—in different forms (LOAN, DISCOUNT, etc.)—as a particular function of the money trade, which is thus at once for loanable money capital the same thing as the merchant is for commodities, the intermediary through which supply of and demand for money capital are balanced out and centralised.

Lastly, we may add yet a further point: Money as world money sheds its national [XV-963] character as the money of a particular country, and is reduced to its gold and silver content, while gold and silver, as the two commodities which circulate as world money, have simultaneously to be reduced to the ratio of their values, which constantly changes. This, too, happens through the mediation of the money dealer, who makes it his particular business to perform this adjustment of national money to world money. (*Rate of exchange*; in this case the current state of the balance of payments is a further factor, but this is a detail which does not belong here.⁴⁶) On the other hand, this operation too ultimately comes down to the simple exchange for each other of the kinds of money used in different countries, just as within a single country

^a K. Marx, *A Contribution to the Critique of Political Economy*. Part One (present edition, Vol. 29, pp. 377-78).—Ed.

the kinds of money belonging to the various particular spheres of circulation are exchanged. (Simple money changers.) All these functions together form the business of the *money trade*, which splits in turn into different branches, just as the commodity trade does.

Just as the operations of the *commodity dealer* (*merchant*) are absolutely nothing but the independent form of the movements, functions, the *commodity* and therefore capital in its shape of *commodity capital* must pass through in the whole of its process of circulation or the movements of its metamorphosis as a whole; in the same way the operations of the *money dealer* (operations of *specific* money capital) are absolutely nothing but the movements which flow from the functions of money as such as opposed to itself as means of circulation (in the way that it functions in trading capital), hence they also fall within the sphere of capital in its shape as money, as *money capital*.

It therefore appears in fact from a more exact analysis—//the sale of money as capital too, the throwing of money into circulation as capital, only initiates the process of production, which proceeds from money; that this representation of capital as initiating the whole process in the form of money appears here as a particular function, that the person who lends the money throws it into production or circulation as capital only indirectly, through the industrial capitalist or merchant, this intermediate operation, the changing hands of the money before it opens the process, does not change the essence of the matter at all//—that *trading capital*, i.e. commodity capital as a *specific* capital, and on the other hand *money capital*, as capital which is INVESTED AND SHUT UP in a specific business, the *money trade*—that these are nothing but *independent* modes of existence of these forms of money capital and commodity capital, which *productive* capital assumes in passing through the whole of the reproduction process, the forms which it assumes in *its own* sphere of circulation, in the interval between leaving the actual process of production and returning to it.

Nothing can be more incorrect than to view *COMMERCIAL CAPITAL* and *MONEYED CAPITAL* (here in the sense of the money trade) as particular departments of *PRODUCTIVE CAPITAL*, somewhat in the same way as MINING, FISHING, FARMING, MANUFACTURING, ETC., CAPITAL. It is rather that *every* *PRODUCTIVE CAPITAL* IS *COMMERCIAL CAPITAL*, in so far as it passes through the whole movement of its process of production, $C-M-C$ or $M-C-M$, and is looked at in this form in isolation. It is in fact its form as *CIRCULATING CAPITAL*, this being viewed as a unity of the opposed phases of the metamorphosis.

Similarly, every *productive capital* is *MONEYED CAPITAL* in one phase, whether this takes the form of $M—M'$, or in so far as the functions which it performs in its form of money, hence its monetary functions, are viewed in isolation. Moreover, productive capital does not cease to perform the functions of *COMMERCIAL CAPITAL* and to appear in one phase as *COMMERCIAL CAPITAL* because of the interposition of *COMMERCIAL CAPITAL* as a particular *kind of capital*, capital INVESTED IN A PECULIAR SPHERE AND MANAGED BY A PECULIAR SET OF CAPITALISTS; or because of the interposition of *MONEYED CAPITAL* as a particular kind of capital, the capital of the money dealers; just as little does it cease to be *MONEYED CAPITAL* and to perform the functions of *MONEYED CAPITAL*.

[XV-964] A *reduplication* therefore takes place (at least in appearance). *COMMERCIAL CAPITAL* (commodity capital) and *MONEYED CAPITAL*^a are on the one hand *general formal determinations* of productive capital, and the particular movements it passes through AS *COMMERCIAL CAPITAL* (commodity trade) and *MONEYED capital* (money trade) are particular functions which productive capital performs in its process of reproduction in both those forms. On the other hand, *particular capitals* (therefore also *PECULIAR SETS OF CAPITALISTS*) are exclusively engaged, whether in the form of *COMMERCIAL CAPITAL* OR in the form of *MONEYED CAPITAL*. As particular forms of productive capital in general, they also become the spheres of particular capitals; *particular spheres* of the valorisation of capital.

It is well known that, *STRICTLY SPEAKING*, a banker does not need to possess any *capital of his own* besides the capital of his customers; and it is a fact not less well known that e.g. commercial AGENTS only administer the capital of their customers (the industrialists) as MANAGERS, and do not need to have any particular capital in addition to this. *GENERALLY* speaking, the *private* capital of *commercants* and BANKERS is only the basis on which an immense superstructure is erected, and it bears no relation at all (the larger it is, the less the relation) to the capital of other people, which they turn over, and with which they conduct their business.

Assume that a merchant possesses £1,000 of capital and turns it over 40 times in the year; in the course of the year he will lay out a money capital of £40,000, and purchase commodity capital to the amount of £40,000, so that altogether a capital of £80,000 passes through his hands. This *turnover of merchants' capital* (in so far as it relates to the £1,000 which form the specific capital of the merchant) is *very different from the turnover of productive capital*. In

^a Marx adds the German equivalent in brackets.—Ed.

fact it represents nothing but the law of the circulation of money, that the quantity of prices realised by the money is represented by the rapidity of its circulation, by the *number* of circuits it performs within a given period. What is true of money in general—money as means of circulation, as means of purchase and means of payment, and this is how it functions in MERCANTILE capital—is true here as a function of *capital*. Admittedly, it makes a profit with each turnover, and this is what makes the sum of money WITH WHICH HE STARTS into capital //For the individual merchant, who can seize hold of a greater or lesser amount of the total business and make a SURPLUS PROFIT because his counterpart makes a smaller than AVERAGE PROFIT, it is correct to say: If the rate of profit and the prices of commodities are given, the total amount of his profit depends on the number of turnovers in the year or the amount of business he does. If the rate of profit and the number of turnovers are given, it depends on the prices of the commodities. If prices and number of turnovers are given, it depends on the rate of profit//, but this profit too is determined in another manner than in the case of productive capital. The turnover of productive capital is by no means an expression of the number of circuits performed by money as means of circulation. It is rather the opposite: the number of circuits of money is here an expression of the frequency of renewal of the process of reproduction, of how often money is converted into capital. Here it turns over a given number of times because it functions as capital a given number of times. In commercial capital it functions a given number of times as capital because it turns over a given number of times. The number of turnovers is therefore important with productive capital because they express the number of periods within which the *creation* of surplus value, hence of profit, is repeated. Here the turnover enters the *rate of profit* as a determining factor, because it expresses the circulation time within which capital exploits a definite quantity of labour, appropriates unpaid labour. The turnover itself has nothing to do with the creation of profit. It expresses rather 1) the periods of its realisation; and 2) the degree to which labour time is limited by circulation time. With COMMERCIAL CAPITAL there are two points to make. *Firstly*: Profit is only made through turnover, which represents nothing but the circulation of money; the number of *circuits performed by the same* sum of money; i.e. *the repetition of the acts of buying and selling*. Even the simple $C—M—C'$ in the circulation process of productive capital has another meaning. C is the result of the process of production, the commodity which

results from the process of production; C' , in contrast, is the commodities which enter as elements of the commodity into its process of production, which represent its conditions of production. But, as against this, looking at $C—M—C'$ in commercial capital, C is distinguished from C' only as *price*, not as commodity, [XV-965] and even if C' is another use value, the relation of this to C is no different from if it were the same use value.

Secondly, however, although the *profit* is made here by the turnover itself, not first realised within the turnover, as was the case with productive capital, the number of turnovers is not a factor in determining the rate of profit here, but rather the opposite. The (AVERAGE) *rate of profit* determines the profit on each individual turnover. If the general rate of profit is e.g. 10%, that is also the rate of profit of merchants' capital. For a merchants' capital of e.g. £1,000 to realise a profit of 10% over the year, it may only take, if it turns over ten times, a profit of 1% in each turnover on a quantity of commodities of £100, hence adding 10 to 1,000. Thus, for example, only £ $\frac{1}{100}$ on a commodity priced at £1 = $\frac{20}{100}$ s. = $\frac{2}{10}$ s. = $\frac{1}{5}$ s. = $2\frac{2}{5}$ d. If it turned over 20 times, it would need to make only $\frac{1}{2}\%$ on each turnover, for $20 \times \frac{1}{2} = 10$. $\frac{1}{2}$ per 100 is $\frac{10}{2}$ or 5 on 1,000. Thus on a commodity priced at £1, for example, it is only £ $\frac{1}{200}$ = $\frac{20}{200}$ s. = $\frac{2}{20}$ s. = $\frac{1}{10}$ s. = $1\frac{1}{5}$ d. The average number of turnovers in the different spheres of the trade in commodities is presupposed as given here. Thus in merchants' capital everything appears entirely on the surface.

Let us now take, e.g., the rotation of a capital in the manufacture of CALICO. The product, 10,000 yards of calico = (e.g.) £1,000. The manufacturer sells these 10,000 yards to a MERCHANT, a CLOTHDEALER, who pays him £1,000. (We shall ignore credit as not yet developed.) The 10,000 yards of calico are now in the hands of the MERCHANT, and they represent there *commodity capital*, merchants' capital. In the hands of the MANUFACTURER they represented CAPITAL + PROFIT. Let this MERCHANT be MERCHANT I. The manufacturer now uses his £1,000 to buy yarn for £700, coal, etc., for £100, and with a further £100 he buys labour.⁴³ The remaining £100 he spends as revenue. If we analyse the latter transaction further, we find that, BY and BY, *au fur et à mesure*,^a as the workers receive the £100, they buy commodities from *épiciier*, just as the manufacturer buys means of consumption from the *épiciier* with his £100. MERCHANT II, the *yarn dealer*, now has £700 instead of the yarn, his commodity capital. The same applies to the coal dealer, MERCHANT III,

^a Gradually.—Ed.

who has £100 instead of his coal, and finally to the *épicier*, MERCHANT IV, who has £200 for his commodities. It is clear at the outset that the CALICO continues to be available on the market as a commodity, even though it has passed from the hands of the MANUFACTURER into those of the MERCHANT. It is the capital of the MANUFACTURER, which has not yet passed through its first metamorphosis, has not yet been reconverted from commodity into money. For the MANUFACTURER this conversion has taken place. He has £1,000 instead of his CALICO. But for the CALICO itself the conversion has not taken place. It has not yet been converted into money, it has not yet passed over either into industrial or into individual consumption as a use value. MERCHANT I now represents on the market the same commodity capital as the MANUFACTURER originally represented. For the latter, the process of metamorphosis has been cut short by merchant I, but only to be taken up again, perforce, in the hands of the merchant. If the MANUFACTURER had had to wait until his CALICO really ceased to be a commodity, until it was converted into money, had passed through its first metamorphosis, had been sold to the actual buyer—the industrial or individual CONSUMER—his process of reproduction would have been interrupted. Or, in order not to interrupt it, he would have had to restrict his operations, expend a smaller part of his capital for yarn, etc., wage labour, etc., in short, for the elements of the production process, and retain a greater part of it in money as a reserve fund, so that, whilst a part of it was on the market as a commodity, another part could be converted afresh into productive capital, and then, whilst the second part entered the market as a commodity, the first part could return to him. This division is also necessary with *trade*. But, without the latter, the part of circulating capital held *en reserve* in the form of money would always have to be greater in proportion to the part involved in the process of production, and the scale of reproduction would therefore have to be restricted. Instead of that, the MANUFACTURER can now keep a larger part of his capital in the actual production process, a smaller part as money reserve. But instead of that a part of the capital of society—initially in the form of merchants' capital—is always to be found within the process of circulation; it never enters directly into the process of reproduction. It is always and exclusively employed in the purchase of commodities. There therefore appears to have taken place no more than A CHANGE in the persons who have in their hands this portion of capital.

[XV-966] If the merchant were to employ the £1,000 productively himself, instead of using it to buy COTTON, there would be an

increase in the size of the productive capital. But of course in that case the MANUFACTURER would have to keep a more significant part back as money reserve, and the same would be true of MERCHANT I, now turned into a MANUFACTURER. In the one case the productive part of the MANUFACTURER'S capital would be increased; but in return for this the whole of the merchants' capital would be withdrawn from production. In the other case both of them would have to increase their money reserve, but then a large part of the merchants' capital would also be devoted to production. Thus it looks like six of one and half a dozen of the other; what is gained on one side is lost on the other. Nevertheless, it is not so (unless merchants' capital exceeds its necessary proportions). And indeed it is not so because the reproduction of merchants' capital and the reproduction of productive capital are two different processes, although the first is only a moment of the reproduction process of the total capital. In the best case, i.e. if he works to order and receives his money as soon as the commodity is finished, the COTTON MANUFACTURER can still only turn over his capital e.g. 4 times in the year, because he cannot produce and reproduce more than 10,000 yards in 3 months. The repetition of his reproduction process is not only determined by the actual act of circulation— $C-M-C$ —the circulation his commodity must pass through from the moment at which it emerges from the process as a finished commodity, in order to enter it once again in the form of the elements of the production of the commodity. It is determined further by the duration of the production process itself. If his capital were [£]900, and he always had to have $\frac{1}{3}$ in the money reserve, there would never be more than £600 present in the production process, and he would only be able to produce 6,000 yards in one rotation, hence if his capital turned over 4 times he would produce 24,000 yards, whereas in the other case⁴⁷ he produces 40,000. When and how much he converts back into capital is by no means dependent on the character of his money as money; it is rather that this reconversion of money into productive capital, and the repetition of this reconversion, depends on the specific nature of his productive capital, on the use value of the commodity it produces, and the particular kind of labour which produces this use value and the conditions under which it is produced.

If I now consider the £1,000 of MERCHANT I in relation to this single MANUFACTURER, the *reproduction* of his capital is in fact entirely dependent on the reproduction of this productive capital. He buys the 10,000 yards today, and sells them it doesn't matter when, say

in a week. He cannot convert the money used in this way back into yards until the MANUFACTURER'S second turnover time arrives, at the end of the first 6 months, when the latter again places 10,000 yards on the market, and so on. But merchants' capital, after the 10,000 yards of COTTON MANUFACTURER I have been sold, can again buy 10,000 yards there from COTTON MANUFACTURERS II, III, IV. If we assume the merchant needs a month to make the sale, he could buy 12,000 yards every month, hence in the course of a year $12 \times 12,000 = 144,000$ yards; and thus with his capital of £1,000 he could buy and sell the commodities of 36 MANUFACTURERS, each of them producing 40,000 yards in the year and having a total capital of £32,400 (each of them £900) fixed in their TRADES.⁴⁸ Admittedly, we are assuming here that the merchant sells more quickly than the MANUFACTURER could. If this were not the case, merchants' capital would represent absolutely nothing but the capital of the MANUFACTURER lying idle. And it would be the same thing as if the latter always had £1,000 in the process of production and £1,000 as reserve or as means of purchase available in the process of circulation. But this more rapid sale, i.e. the more rapid finding of buyers, results from the *principle of the division of labour*, since the merchant has nothing else to do but find buyers and sellers. The *first moment* is therefore that the merchant not only enables the MANUFACTURER to convert his commodity, his calico, into money at an earlier stage, but also enables this *calico* itself to pass through its first metamorphosis more rapidly, to be sold more rapidly.

With this presupposition, the *turnovers of merchants' capital* by no means represent the turnovers or the repetition of the reproduction process—conversion of the commodity into money—of MANUFACTURER I, of a single capital in a particular sphere, but rather the turnovers of 36, perhaps, or ANY OTHER AMOUNT, of capitals functioning in this sphere.

[XV-967] Or if the merchant is a GENERAL MERCHANT, he will be able, after the sale of the 10,000 yards of calico for £1,000, etc., to buy silk, etc., with the result that the turnover of his capital can represent not only the turnovers of many capitals in a single sphere of production, but the turnovers of a number of capitals in various spheres of production.

His money capital thus performs the same function towards the productive capitals to be found on the market in the shape of commodity capitals as money performs towards the commodities whose prices it realises in sequence through the number of its circuits in a given period. Its turnover is absolutely nothing but the turnover of money as means of purchase, i.e. means of

circulation, since in fact it merely represents $C—M—C—M$, etc. After the merchant has converted the commodity (of the MANUFACTURER) into money and therefore his own money into a commodity, he converts this money into a commodity again, etc. These turnovers of his *money capital* as means of purchase, as an intermediary in the circulation of commodities, depend on the total reproduction process, or at least on a substantial part of it (for the individual merchant), but they do not depend on the reproduction process of the individual capital. In so far as he, because of the process as a whole, always finds commodities on the market—and this is the prerequisite for him—his *turnover* consists in the *mere* repetition of purchases, a repetition mediated by the repetition of sales. His turnover merely represents the repetition of the circuit of money. The difference between his turnover and the simple circuit of money is this: *the same piece of money* repeats purchases. E.g. A buys from B with £10, B buys from C with the same £10, C from D and so on. Here the buyer is always a different person, although the £10 always remain the same. The money changes hands. But the MERCHANT who buys calico from the MANUFACTURER with £1,000 sells the same calico again to a third person, and the same amount of money returns to his hands. Whether it consists of the same coins is a purely accidental matter. It is at the same time $M—C—M$, the form of capital. But how often the merchant can renew the same operation depends on how often the same amount of money, his capital as money capital, returns to his hands. If we start from the merchant as commodity owner—and he has become a commodity owner by the purchase of the 10,000 yards—he sells the commodity, and he buys a new commodity with the money into which it has been converted. $C—M—C$. *The same money* changes places twice: it comes into the hands of the merchant as seller and it leaves his hands as buyer. This is the movement of the metamorphosis of the commodity in general, a movement which the merchant represents in so far as he first sells (the commodity) and buys with the price of that commodity; first converts the commodity into money, then the money into a commodity. Here the money is mere means of circulation, although it represents capital for him. Nevertheless, this is not the peculiar movement of merchants' capital, although that movement does form a moment of its own movement; in so far as the movement includes a twofold movement of the same piece of money. But merchants' capital, as separated from productive capital, in so far as this itself circulates, always steps forth first as buyer, as money which is to be converted into a

commodity. It never makes its first appearance as a commodity, for the commodity appears in the hands of its first owner as product, and it never appears as such in the hands of the actual merchant. The real movement of merchants' capital is this:

$$1) \quad 2)3) \quad 4)5) \quad 6)7) \quad 8)9) \quad , \text{ etc.} \\ M - C - M - C - M$$

Money is exchanged for a commodity, the same commodity is exchanged for money, the same money is exchanged for a commodity, the same commodity is exchanged for money, etc. The difference between this and the metamorphosis of the commodity, in which money only functions as means of circulation, is this: There it is only the same piece of money which changes hands twice and is to be found in the same hand in a double determination (first as realised price of the commodity, second as means of purchase), while the two extremes, the two different commodities, only change their place once and then fall out of circulation. But here it is *the same, the identical commodity* which changes hands twice. It is sold twice, first by the producer to the merchant, and then by the merchant to the consumer, industrial or individual. There the twofold change of place of *the same pieces of money* is the mediation of the real exchange of commodities, the real exchange of matter. Here, in contrast, the twofold change of place of *the same commodity* is not the means whereby the same amount of money (increased) returns to the hands of the same person. It is merely through this twofold change of place of the same commodity—it is the means of pulling back the money—that the money constantly returns here, so that its movement appears as a movement of capital, although it constantly functions in the process as means of circulation. [XV-968] The sale of the commodity—the same phase of its metamorphosis—is here passed through twice.

This is true if we consider the first rotation $M - C - M$ ¹⁾²⁾. It is otherwise in the reproduction, the continuity, the repetition of this process, and the movement of merchants' capital is this constant repetition.

$$M - \ddot{C} - \dot{M}/\dot{M} - \ddot{C} - \dot{M}, \text{ etc.}$$

In the first rotation the same commodity only changes its position twice, and *the same* sum of money comes back. (This return of the same sum of money—hence the same sum of value (*capital*, because every sum of value appears in its return as self-preserving and self-valorising and [as] value relating itself

to itself)—is very different from the twofold functional displacement of the same piece of money. The money performs the latter function in its determination as money and indeed as means of circulation. The return may, it is true, also be purely formal. For example, when the capitalist pays wages in money, and the worker buys the commodity from the capitalist with the same money. This means only that the same persons confront each other as seller and buyer, the same money can therefore serve both of them as means of purchase.) But the sum of money which has thus returned—it is capital with reference to the money laid out, with which the process began; but it is also the realised price of the commodity which has been sold, hence the first metamorphosis of this commodity—the *same identical pieces of money* now in turn buy commodities, which are in turn sold, etc. Here, then, there is in addition to the twofold displacement of the commodity a twofold displacement of the same money, or its displacement as means of circulation. The *RETURN of the money as capital*, accomplished by the twofold displacement of the commodity or its sale twice (or more times) in succession. But the repetition of this process, and therefore the purchase of the commodity, is mediated by the *twofold displacement* of the money which has returned, or its function as means of circulation. The rapidity of *turnover* of merchants' capital is therefore dependent on 2 moments: 1) On the rapidity with which its money capital performs the circuit as means of circulation, or, and this is the same thing, repeats its purchases. Here the purchase is always repeated with the money which has returned. Its rapidity is therefore the same as the rapidity with which the money changes its place twice, passes from the buyer of the commodity to the merchant, and from the merchant to the seller of another commodity. Rapidity in the turnover of merchants' capital, and rapidity in the circuit of money are therefore identical here. This repetition naturally depends upon a constant flow of new commodities onto the market, hence a constant flow of reproduction. If the self-renewing merchants' capital is large, the reproduction of the commodity must be not only constant and rapid but also on a mass scale. [The rapidity of turnover of merchants' capital however also depends] 2) on the rapidity with which the same commodity changes hands twice, hence on the rapidity of circulation of *the same* commodity. It must pass quickly from the hands of the producer into those of the merchant. But this is already implied in moment 1). What is added here, essentially, is this, that it must pass quickly from the hands of the merchant into those of the

final buyer. He must sell quickly. He now sells either to the industrial consumer //we are leaving out of consideration the division of labour amongst the merchants themselves, by which WHOLESALE DEALER sells to RETAILER, etc.// or to the individual consumer. If to the former, this rapidity of re-sale will depend directly on the rapidity of reproduction. If to the individual consumer, consumption will form in reality a moment of the process of reproduction. It is $C—M—C'$ in the first sense, that in which the commodity is converted into means of consumption through the mediation of money. The more production as a whole rests on circulation, each producer therefore possessing his product only in the shape of a commodity or of money, his consumption therefore resting on sale (*qua ad* commodity) and purchase (*qua ad* money), the more is the rapidity of consumption, of the commodity's withdrawal from circulation, conditioned by the manner of the production process itself.

The rapidity of turnover of merchants' capital therefore depends on 2 moments: the rapidity with which the same money changes its position, performs its circuit, hence the rapidity of money as means of circulation (is expressed in this). Then the rapidity with which the double displacement of *the same commodity* takes place, the peculiar circulation which is appropriate to it as *commodity capital* (not as mere commodity). Both moments depend on the rapidity of the total reproduction process. The turnover of merchants' capital is not, however, identical with the turnover or the number of reproductions of a *productive capital of equal magnitude*. It represents rather the sum total of the turnovers of a number of such capitals, whether in the same sphere or in different spheres of production.

[XV-969] The more quickly merchants' capital turns over, the smaller it is in relation to the amount of productive capital. The more slowly it turns over, the greater is the part of the total money capital which figures as merchants' capital. Hence in modes of production, or at stages of production, at which circulation is undeveloped, because in general the exchange-value character and further the capitalist character of production is undeveloped, the total amount of merchants' capital (although small absolutely) is relatively large in proportion to the total amount of commodities thrown into circulation. The greater part of the actual money capital is therefore in the hands of the merchants, whose wealth thus forms *monetary wealth* as far as the others are concerned. (The actual *money trade* must be added to this. But we shall deal with this later.)

It further follows from the calculations:

In so far as *merchants' capital* appears as *commodity capital*, it is absolutely nothing but productive capital itself, which happens to be in the sphere of circulation *sub specie*^a commodity capital. It is true that it now appears in the hands of another commodity owner. But the fact that it is in reality just a phase of productive capital emerges immediately when the commodity capital in the hands of the merchant is unsaleable, when his money capital is therefore not returned to him, when he therefore cannot buy the commodity afresh. Then the same standstill in reproduction occurs as if the capital—in the form of commodity capital, in the first stage of its circulation process—were to be found unsaleable in the hands of the producer.

It is not necessarily the case that merchants' capital performs just the turnover considered above. The merchant may perform both movements *simultaneously*. Then his capital is divided into two parts. One consists of commodity capital, the other of money capital. From one he buys, thereby converting his capital into commodities. To the other he sells, thereby converting another part of his capital into money. On the one hand his capital flows back to him as money capital, while on the other hand his money capital is simultaneously converted into commodity capital or flows back to him as commodity capital. The larger the part which exists in one form, the smaller the part which exists in the other. But this division must balance out. E.g. £300 merchants' capital. He initially keeps £100 in reserve and buys commodities with £200. As long as this £200 exists in the commodity form he cannot buy with it. Now he buys with £100. At this point, however, £200 has been converted from commodities into money and £100 from money into commodities. But what is important here is that the merchant simultaneously buys with one part of his capital and sells with the other part. Assume he buys at 3 weeks' payment and he sells similarly at 3 weeks' payment. At the end of 3 weeks he owes £200 and is due to receive £100. He has thus a balance of £100 to pay, while he simultaneously possesses £200 in commodities. Instead of £300 he would then require only £100 to conduct the transaction. But if he has sold the commodities over the 3 weeks, he can pay the balance with the money he has made, and therefore does not need to lay out any money at all.

^a Under the aspect of.—*Ed.*

Therefore: 200 — 100	
<i>bought</i> x yards	x qrs <i>sold</i>
payable after 3	payable
weeks	after
— £200	3 weeks
<hr/>	<hr/>
£200 to pay	[£]100
	to take in

Thus he pays for the 200 x yards with the £100 made+£100 he will make, but he needs for the whole transaction only £100. I.e. he needs only £100 to buy 200 yards for £100^a and sell 100 qrs. at £100.

This employ- ment of mo- ney as means of payment in- volves the cir- cuit of money as means of circulation:	<i>Bought</i> x yards	—
	payable after 3 weeks with £200. Sold be- fore the end of the 3 weeks.	£100 to take in
	<hr/>	
	Owes £200, pos- sesses £200	

Thus he pays for the 100 x yards with the price he gained from their sale. I.e. the purchase of the 200 x yards costs him no monetary outlay. He has bought without money, sold for money. Hence instead of £100 to add he has £100 in his possession.

With the addition of money as means of payment, and the credit system founded on this, there is a further reduction in the quantity of money capital which forms *mercantile capital*, in proportion to the magnitude of the transactions this mercantile capital performs. If I buy £1,000 worth of commodities at 3 months' payment, and I sell the commodities before the end of 3 months, I do not need to advance a single farthing for *this* transaction. [XV-970] In this case it is also as clear as day that the *money capital*, which appears here as *mercantile capital*, is absolutely nothing other than productive capital itself in its form of *money capital*, its RETURN to itself in the form of money. (That the MANUFACTURER who sells the £1,000 of commodities for 3 months can discount the bill on the MERCHANT changes nothing in the situation, and has nothing to do with merchants' capital as such.) If the market prices of the commodities were to fall in the meantime, e.g. by $\frac{1}{10}$, the merchant would only receive £900 back IN RETURN, and would have to add £100 in order to pay. This £100 would therefore be merely a reserve to compensate for a possible difference in price. But the same thing is true for the MANUFACTURER.

^a Thus in the original. Presumably, it should be "£200".—Ed.

If he had himself sold at falling market prices, £900 would have come back instead of £1,000, and he could not have started the operation again on the same scale without a reserve capital of £100.

Let us now consider another phase of the above process.

The MANUFACTURER received £1,000 from the merchant to whom he sold his CALICO. With the £1,000 he buys yarn from the yarn dealer; MERCHANT II. His (the MANUFACTURER'S) capital has thereby completed its circulation process and is once again in the sphere of production. The £1,000 in the hands of the yarn dealer represent on the one hand the RETURN of his money capital, the reconversion of his money into money. But with reference to the yarn itself, hence productive capital, the £1,000 represent in fact its first metamorphosis, its conversion into money (although this has already happened for the yarn MANUFACTURER specifically through his sale to MERCHANT II). The phases of production of the capitals in the various spheres are intertwined with each other, in that what emerges from one phase as product (finished commodity) enters the other as condition of production, and indeed they may interlock with each other reciprocally in the way that iron enters the production of coal and coal the production of iron. The spheres of circulation are intertwined with each other in exactly the same way. Thus here the reconversion of the money capital of the CALICO MANUFACTURER into productive capital is the reconversion of the yarn into money, the RETURN of the money capital of the YARN MANUFACTURER. This represents at the same time the RETURN of the money capital of the YARN dealer. The money with which the CALICO MANUFACTURER pays the yarn dealer is not the money of MERCHANT I, for the latter has obtained commodities to the amount of £1,000 for this. It is his own capital in the form of money. These £1,000 now appear in the hands of the yarn dealer as MERCANTILE CAPITAL, but to what extent are they this, as distinct from this money as the money form the CALICO has shed, and the money form the YARN has assumed? If, for example, the YARN dealer bought on credit, and sold before he had to pay, the £1,000 would contain not a farthing of MERCANTILE capital as distinct from the money form, which productive capital itself assumes in its process of circulation. MERCANTILE capital, in so far as it is not a mere form of productive capital, which appears as a particular kind of capital because productive capital is to be found on the market in the hands of MERCHANTS in its shape as commodity capital and its shape as money capital, is therefore nothing but the part of money capital which belongs to the MERCHANT himself. This part represents—on a much

lessened scale (if this were not so, mercantile capital would be GOOD FOR NOTHING), on a highly reduced scale—nothing but the part of productive capital which must always be available in the hands of the MANUFACTURER as a reserve for means of purchase, as money; IN FACT it represents nothing but a part of the part of productive capital which must always circulate as money capital. (It also circulates when held in reserve as means of circulation, as means of purchase. But it would really circulate. E.g. the MANUFACTURER has [£]1,000 in commodities instead of £1,000. He cannot begin his process of reproduction with these commodities. He would need in addition £1,000 in money in order to buy means of production, etc.) This part is now to be found *much reduced in size* in the hands of a particular SET of capitalists, and it is always in circulation, always functioning in the circulation process. (To say that the merchant extends the market, that there is consequent division of labour, etc., amounts to saying that he finds buyers more quickly. For even finding more [XV-971] buyers only means finding buyers for more commodities.) It is very much reduced because it serves the turnover not of one capital but of many capitals. Apart from the part of productive capital which must constantly exist as money for current expenditure, another part must constantly circulate as means of purchase on the market, without ever itself being converted into productive capital, for the whole of the capitalist class, for the process of reproduction of the total capital—for the continuity of this process. This part forms *mercantile capital*. It is the smaller, relatively speaking, the more rapid the total process of reproduction, hence the circuit of money, and the more developed money is as means of payment, hence the *credit system*.

We saw when we considered the total process of reproduction⁴⁹ that in part capital is exchanged with capital, in part capital with income and capital, and, finally, in part capital with income. With MERCANTILE capital this is represented in the following way, that to the extent that it exchanges with industrial consumers (disregarding here movements from the hands of one buyer into those of another, from the WHOLESALER'S hands into the RETAILER'S, etc.) it is a mere TRANSFER of capital; to the extent that it exchanges with individual consumers it is exchange with income.

Mercantile capital is nothing but capital which functions within the sphere of circulation. The circulation process is a phase of the total process of reproduction. But no value is produced in the circulation process, hence no surplus value is produced either. There occur only changes of form *in a magnitude of value which*

remains the same. In fact what occurs is nothing but the metamorphosis of the commodity, which has nothing to do with value creation or value alteration as such. If surplus value is realised in the sale of the commodity, this is because the surplus value already exists in it; hence in the second act, the exchange back of the money capital in return for the commodity, no surplus value is realised (this can only be achieved here through the exchange of money for labour).⁵⁰ On the contrary. In so far as this metamorphosis costs circulation time—a time during which capital does not produce—hence does not produce surplus value either—it is a limitation on the creation of value, and the surplus value will be expressed as a rate of profit in an exactly inverse ratio to the duration of circulation time. *Mercantile capital* therefore creates neither value nor surplus value. That is to say, not directly. In so far as it contributes to the curtailment of circulation time, and in general mediates the metamorphosis without which capital cannot begin its process of production anew, it performs a function indispensable to the capitalist mode of production, and it may indirectly *help to increase the surplus value created by productive capital*, or at least establish it as a higher rate of profit, or both at once. In so far as it helps to extend the market and mediates the division of labour between the capitals—hence also enables the individual capital to work on a larger scale—its function promotes the productivity of productive capital and the process of accumulation, the reconversion of profit into productive capital. In so far as it curtails circulation time, it raises the ratio of surplus value to the capital advanced, hence the rate of profit. Finally, in so far as it inserts a smaller part of capital (money capital) into the sphere of circulation of the commodities, into the process of circulation of capital (to the extent that this circulation process excludes the exchange of capital and labour capacity), it increases the part of capital directly invested in production. But as we have said: in so far as it has an impact on the magnitude of value as such, and the ratio of surplus value to the value advanced, it does this only indirectly, through its impact on the productive capital. Within the sphere of circulation—the only sphere in which it functions—it does not itself create value or surplus value, apart from that which flows from the sphere of direct production into the sphere of circulation. The *profit* which *mercantile capital* brings in is therefore merely a part of the surplus value, which is created by the total productive capital, and of which an aliquot part is transferred to mercantile capital. What mercantile capital is exchanged for—whether it is capital, or

money representing income, profit (interest), rent, wages—is a fixed amount of value, which remains what it was through this exchange. Mercantile capital not only does not itself produce its profit, which is, rather, [XV-972] only a TRANSFER from the surplus value made, squeezed out, by productive capital; it is also preserved as *capital* only through the constant renewal of the process of production. But the latter point is already implied by the fact that *MERCANTILE CAPITAL* is in reality nothing but *productive capital* in its sphere of circulation; and it only appears alongside productive capital as *distinguishable* and *distinct* *MERCANTILE capital* because the part of *PRODUCTIVE capital* which would always have to be present in the hands of the *INDUSTRIAL capitalist* as circulating money capital is now to be found, on a much reduced scale, in the hands of a *particular SET OF CAPITALISTS*, whose function lies outside the actual process of production.

Indeed, *mercantile capital* does not function in the actual process of production, but in the process of reproduction of the commodity, of which the process of circulation forms a section of its own. Just as the industrial capitalist is an agent of capitalist production, or productive capital personified, so the *MERCHANT* is an *AGENT* of capitalist circulation, *IN FACT* a personification of circulating capital. But every capital which is engaged in the process of production or reproduction, which performs any necessary function of capital at all, draws, *pro rata* its size, an equal portion of the surplus value produced by the total capital within a definite period, hence e.g. annually. This is therefore true of *mercantile capital* as well, although it has nothing to do with the direct production of that surplus value, hence also nothing to do with the direct exploitation of the worker. (In so far as the *RETAILER*, etc., exploits the worker, he exploits him as a seller exploits the buyer. This cheating, this fraud, which we are not examining here at all, is not a form characteristic of capitalist production as such.) Just as a capital of 1,000 brings the same *AVERAGE PROFIT* as another capital of 1,000, even though it only employs perhaps $\frac{1}{3}$ of the workers, and returns perhaps only once whereas the other capital returns 4 times a year, hence has a longer circulation time, and employs less variable capital, so also with *MERCANTILE CAPITAL*. What is involved here is only the size of the capital outlay, and the functioning of that capital *IN WHATEVER WAY DURING A CERTAIN PERIOD, SAY [an] ANNUAL PERIOD*. Since the actual productivity of capital as capital consists in its producing profit; and since mercantile capital produces the same *AVERAGE PROFIT* as industrial capital (interest+commercial profit=interest+industrial profit), *mercantile*

capital does not appear as a particular kind of capital alongside productive capital, but as a particular kind of productive capital, as one of the particular spheres into which it is divided and within which it functions. We therefore find the following put forward side by side as kinds of productive capital: APPROPRIATIVE INDUSTRY, AGRICULTURAL INDUSTRY, MANUFACTURING INDUSTRY, CARRYING INDUSTRY, MERCANTILE INDUSTRY. As if it were only distinguished materially from the other spheres of productive capital, whether through the particular kind of use value it produces (as with the MINING and AGRICULTURAL INDUSTRY), or through the particular way in which the use value is further shaped (as with the MANUFACTURING INDUSTRY and the CARRYING INDUSTRY). But mercantile capital is not a particular sphere of productive capital; it is a sphere of capital separated off from the spheres of productive capital. It has nothing to do with use value as such, being only concerned with the exchange of the use values, just as it has nothing to do with exchange value, but is only concerned with changes in its form. Mercantile capital should rather be placed in the same sphere as MONETARY CAPITAL. Trade in commodities and trade in money as two particular spheres or functions of parts of the total capital which belong to the process of circulation. The great political economists, like Smith, Ricardo, etc., are embarrassed by MERCANTILE CAPITAL as a separate kind of capital, since they rightly examine the fundamental form of capital, productive capital, and IN FACT only examine circulating capital in so far as it is itself a phase of the reproduction process of capital. Propositions about profit, etc., derived directly from the examination of productive capital, cannot be applied directly to mercantile capital. They therefore in fact leave the latter aside entirely, mentioning it only *en passant* as a kind of productive capital. Where they deal specifically with it, as Ricardo e.g. in connection with *foreign trade*, they endeavour to demonstrate [XV-973] that it creates no value, *hinc*^a NO SURPLUS VALUE. But what is valid for foreign trade is also valid for internal trade. The mere [act] of exchanging commodities, buying and selling, presupposes the commodities as use values which have a certain price, and creates neither the one nor the other.⁵¹

On the other hand, since *mercantile capital* is the first free mode of existence of capital in history, and appears as such vis-à-vis guild and feudal, petty-bourgeois and small peasant production,

^a Hence.—*Ed.*

the [advocates of the] Monetary and Mercantile System regarded it as the fundamental form of capital, and they derived from it their notions of SURPLUS VALUE and PROFIT. PROFIT UPON EXPROPRIATION.¹⁷ In reality the merchant draws his profit from circulation and makes it in the act of circulation. But he withdraws what is already there; he merely appropriates a part of the surplus value which is already contained in the commodity, and thereby shares it with his BROTHER CAPITALISTS. Because it arises from circulation for him, it appears to arise from circulation in and for itself.

If MERCANTILE CAPITAL brings in A HIGHER AVERAGE PERCENTAGE OF PROFIT than industrial capital, a part of the industrial capital is converted into mercantile. If it brings in A LOWER AVERAGE PERCENTAGE OF PROFIT, the reverse process takes place. A part of MERCANTILE CAPITAL is converted into INDUSTRIAL CAPITAL. There is no capital which can change its determination, the sphere of its functions, with greater ease.

This is now the question: How does MERCANTILE CAPITAL appropriate the rate of surplus value or profit which is owing to it? It appears on the surface that it adds the AVERAGE RATE OF PROFIT to the price of the commodity. We have seen⁵² that the price of production of the individual commodity or for the whole capital of every *particular* sphere of production is different from the value of the commodity, may be equal, larger, or smaller. But the sum of the production prices of the commodities=the sum of their values. So if the AVERAGE price at which every industrial capitalist sells to the MERCHANT=the production price of his commodity, the sum of the commodity prices paid by mercantile capital=the sum of the values. And taking mercantile capital as a whole, the value of the commodities would form the *cost price* or *BUYING PRICE*. And since the merchant's profit=the difference between BUYING PRICE and SELLING PRICE, he would sell all commodities *above* their value. For every individual commodity the *PRODUCING PRICE* would be his COST PRICE, and he would sell it above its PRODUCING PRICE. For all commodities together this would be identical with his selling them *above their value*. His profit—taking the whole—would therefore come from buying the commodities at their value and selling them above their value. Through this operation, a part of the surplus value (or of profit), or a part of the commodity within which the surplus value is represented, would stick to his fingers. If, for example, I buy a yard at 2s. and sell it at 2s. $2\frac{2}{5}$ d., that is the same as if I were to sell only $\frac{10}{11}$ of a yard for 2s. and appropriate for myself either $\frac{1}{11}$ of a yard or its price, $=\frac{2}{10}$ s. I achieve this, however, only because the buyer pays as much for one yard as $1+\frac{1}{5}$ ($1+\frac{2}{10}$) of a yard cost. This is A CIRCUITOUS WAY OF PARTAKING IN

THE SURPLUS VALUE. *Or, alternatively*, the production price at which industrial capital sells is not=to the real production price of the commodity, but=its production price—the part of the profit which falls to the MERCHANT. In this case, the production price of the commodity=its cost price+the industrial profit (interest INCLUDED)+THE MERCANTILE PROFIT. Just as INDUSTRIAL CAPITAL only realises in circulation profit which is already contained in the commodities as surplus value // although for the particular capital the quota of profit it realises is different from the quota of surplus value which this specific capital produces// so here mercantile capital would only realise a profit because the whole surplus value is *not yet* realised in the price of the commodity realised by INDUSTRIAL CAPITAL. Its SELLING PRICE stands above the BUYING PRICE, not [because it] stands above the value of the totality of commodities, but because in its BUYING price the *value* is realised,—[namely in] surplus value—the part which is due to the merchant.⁵³

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[XVI-973] THIRD CHAPTER
CAPITAL AND PROFIT

1) [SURPLUS VALUE AND PROFIT]

Considered in its totality (wholeness) (or considered completely) (or in *its completeness*) the movement of capital is a unity of the process of production and the process of circulation.

The *surplus value* produced within a given period of circulation (let us take e.g. a year as the measure; see above, Chapter II⁵⁴), when measured against the *total capital* which has been advanced, is called—*profit*. (Under profit is included not only interest—known to be a mere portion of the total profit—but also the *rent of land*, which is nothing but *a part* of the capital employed in agriculture. The particular way capital is specified by this particular form of investment belongs to the consideration of landed property.⁵⁵ Here we shall merely indicate that profit is not to be understood exclusively as what is called industrial or commercial profit.)

Considered with respect to its material, profit is absolutely nothing but surplus value itself. Considered with respect to its absolute magnitude, it therefore does not differ from the surplus value produced by capital over a particular turnover time. It is surplus value itself, but *calculated* differently. By its nature, surplus value is related to that part of the advanced capital through exchange with which it arises, and it is therefore calculated in relation to that part. Circulation time, in so far as it differs from production time, only comes into consideration here as a barrier to the creation of surplus value. But as *profit*, surplus value is related to, and therefore measured by, not a part of the capital advanced, but the whole amount of the capital advanced, without regard to the entirely different positions these different

components occupy in the creation of surplus value and the production of the value of the commodity in general.

So: Assume there is a capital equal to 600 thalers. The constant part of the capital consists of $\frac{5}{6}$ of it, namely raw material and machinery; the variable part, laid out in wages, consists of the remaining $\frac{1}{6}$. If the surplus value produced in a year amounts to 60 thalers—hence the value of the whole product in a year is 660 thalers—this surplus value of 60 thalers is called *profit*, as long as it is not considered with regard to the 100 thalers which are exchanged for 160 in the capitalist production process, not with regard to the sixth of the capital from which it arises, but with regard to the $\frac{5}{6}$ of which the capital advanced consists, i.e. with regard to the total capital advanced of 600 thalers. Although the 60 thalers continue to have *the same* magnitude of value, 60 on 100 makes 60 per cent while 60 on 600 only makes 10%. Surplus value therefore receives in profit—which always expresses a relation,* a proportion—a new *expression, numerically different* from its original shape. The same magnitude naturally alters its numerical expression, once it is calculated, instead of in its organic relation to part of a whole, in a relation to the whole of the whole.

[XVI-974] The difference is not only *numerical* but also *conceptual, essential*. It is not only a matter of a different valuation, measurement or calculation. There is more to it. This difference in calculation, measurement, valuation is a necessity for capital, it expresses a new characteristic relation of capital, the creation of a new form, which is just as essential as the difference between the form of exchange value and that of money, perhaps.

As we have seen, the relation between surplus value and the variable part of capital is an organic one. In fact it expresses the secret of the formation and growth, of the existence of capital as capital. This organic relation is extinguished in the relation between profit and capital. Surplus value obtains a form in which the secret of its origin is no longer hinted at with the slightest trace. Since all parts of capital equally appear as the basis of the newly created value, the capital-relation becomes a complete mystification. In surplus value as such, the relation of capital to the labour which capital appropriates is constantly expressed. In the relation of capital to profit, capital is related not to labour but to itself. It is on the one hand a merely quantitative relation of an amount of value or an amount of money to itself. If I say for example that a capital of 100 thalers brings in a profit of

* An appendix should be added to this. See Malthus, etc.⁵⁶

10 thalers a year, I am merely comparing thalers with thalers. On the first occasion the PRINCIPAL, the CAPITAL, the main amount, appears as given, on the other occasion these 100 thalers become the main amount, the PRINCIPAL, the CAPITAL, precisely because they bring in an extra amount, and the main amount appears as the underlying cause, of which this extra amount is the effect. This is its natural fruit. (See *Aristotle on usury*,⁵⁷ and also the one passage in Sismondi⁵⁸ where he says that wealth like labour bears fruit annually. When he adds to this "like labour and *through labour*" he is already going too far.)

The difference between capital and its particular forms is therefore extinguished in this form, and this is therefore also true of capital's functions in which it appears even before capitalist production itself. Capital thereby becomes a thing, which existed just as much in antiquity as it exists today.

"The capitalist expects an equal *profit* upon all the parts of the capital" (Malthus).^a

On the one hand this contains the correct point that profit is a form of surplus value, if the latter is related equally to all parts of the capital and therefore measured equally against the total amount of capital. But there is also the point that the capitalist knows nothing of the essence of capital, and surplus value exists in his consciousness only in the form of profit, a converted form of surplus value, which is completely abstracted from the relations under which it originates and by which it is conditioned. During the direct process of production, the nature of surplus value does, it is true, continuously enter the capitalist's consciousness, as indeed we have seen in considering surplus value, the greed for alien labour time, etc.⁵⁹ But this is only a transitory moment. In fact the capitalist himself regards capital as a self-acting automaton, which has the quality of increasing itself and bringing in a gain, not as a relation, but in its material existence. The social relations under which value takes on this quality, and the things in which it exists as its body (use value), appear as eternal natural relations, or rather, it is grasped at most that certain (artificial) conditions hinder this natural development and cannot allow it to unfold completely.

The notion of capital as a self-acting automaton of this kind lies at the basis of e.g. Price's calculation of interest and compound interest, which completely turned the head even of William Pitt.⁶⁰

^a Th. R. Malthus, *Principles of Political Economy...*, 2nd ed., London, 1836, p. 268.—Ed.

(See Luther on the growth of interest.⁶¹) Hence also the kind of idiotic proclamations one finds on the part of the political economists. E.g. there must be profit, otherwise the capitalist would put his capital out at interest. He would have no reason to throw it into production instead of putting it out at interest [XVI-975] (thus capital would allegedly bring in interest even if no capital were thrown into production). Thus Turgot already says: If it brought in no profit, everyone would buy land with his capital. (See Turgot.⁶² Thus here a particular mode of employment of capital is regarded as being of itself profitable.)

Surplus value, however, necessarily assumes the form of *profit* in the bourgeois mind—and this is not just a way of looking at things. The relation of surplus value as a *relation of profit* dominates bourgeois production, determines the distribution of the capitals in the different branches of production, is so to speak the triangulation point for free competition (the competition of capitals amongst each other, i.e. the real movement of capitals in which alone the laws of capital are realised. These laws are in fact nothing but the general relations of this movement, its result on the one hand, its tendency on the other.)

The relations under which a quantity of value, money, commodities, the particular use values in which value re-enters production, becomes capital, i.e. the owner of this quantity of value becomes a capitalist, are, under capitalist production, within bourgeois society, so enmeshed with the existence of capitalists that for example Wakefield had to go to the Colonies to discover that these relations are not self-evident, and that without them value does not become capital and the owner of value does not become a capitalist. So self-evident, and so altogether incomprehensible, that this discovery of Wakefield's could in fact mark a kind of epoch in modern political economy.⁶³

The actual production process of capital is constantly bound up with its circulation process. Both are moments of the production process itself, as the production process for its part in turn appears as a moment of the circulation process. The two constantly overlap, interpenetrate, and thereby constantly falsify each other's characteristic distinguishing marks. But in the process of circulation surplus value on the one hand assumes new determinations, on the other hand capital passes through transformations, and finally it so to speak steps out of its organic life into foreign conditions of life, into relations in which not capital and labour but on the one hand capital and capital confront each other, and on the other hand the individuals as well again

confront each other in the relations of simple circulation, as commodity owners, buyers and sellers—circulation time and labour time thus cut across each other as this path is followed, and thus appear to determine surplus value equally. Now the original form in which capital and wage labour confront each other disappears as it were, and relations enter the picture which are apparently independent of this, surplus value itself no longer appears as a product of the appropriation of labour time, but as the excess of the selling price of commodities over their value, and as well, above all, as money. The result is the complete extinction of the memory of the original nature of surplus value, or alternatively this original nature never enters clearly into consciousness at all, but appears at most as an equally valid moment alongside the moments which arise out of circulation independently of capital's original nature, hence as a moment of the movement which belongs to capital independently of its relation to labour. Indeed, these phenomena of circulation are themselves directly adduced by other political economists (such as Ramsay, Malthus, Senior, Torrens, etc.⁶⁴) as proofs that capital in its material shape—regardless of the social relation of production which makes it capital—is an independent source of surplus value alongside labour and independently of labour. But it lay in the nature of this relation, as we already saw in considering the process of production of capital,^a that the socially productive forces of labour appear as productive forces transposed into capital, that the autonomisation and personification of past labour and of the value which exists in practice in the shape of the capitalist, the rule of past labour over living labour, which constitutes the essence of capital, the transformation as against this of the worker into mere objective labour capacity, a commodity, the fruitfulness of capital, in so far as it exists objectively, does not appear as a consequence of the social relation of production, the latter appearing rather inversely as a consequence of the material relation between those objects and labour as particular moments [XVI-976] of the process of production. In the capital-relation—to the extent that it is still considered independently of its circulation process—what is essentially characteristic is the mystification, the upside-down world, the inversion of the subjective and the objective, as it already appears in money. Corresponding to the inverted relation, there necessarily arises, already in the actual production process itself, an inverted conception, a transposed

^a See present edition, Vol. 30, pp. 112-13, 159-61, 187-88, 260-63, 271-72.—*Ed.*

consciousness, which is completed by the transformations and modifications of the actual process of circulation. However, the capitalist as capitalist is nothing but this movement of capital itself. What he is in reality, he is also in consciousness. Since the positive, dominant side of the relation is expressed in him, he only feels at home precisely in these contradictions; they do not disturb him, whereas the wage labourer, who is trapped in the same inverted notion, only from the other extreme, is driven in practice, as the oppressed side, to resistance against the whole relation, hence also against the notions, concepts and modes of thinking corresponding to it.

It must be added that in the real process of circulation not only do those transformations we have considered take place (and impel even the better political economists to adopt the capitalists' conceptions, if in a somewhat more doctrinaire form) but they coincide with real competition, buying and selling above and below value, hence profit does not appear to the capitalists as surplus value, as it is in fact for every one of them, not as dependent on the degree of exploitation of labour, but as the result of one person's taking advantage of another, a notion which not only the older, but even the more recent political economists have sanctioned. (E.g. *Torrens*.⁶⁵ See also *Senior* on money, etc., and wages.⁶⁶)

In fact the only thing which interests capital in practice, and regulates the real movement of capital, competition, is *profit*, and not *surplus value*, i.e. the ratio of the surplus value to the total amount of capital advanced, and not the ratio of the surplus value to the capital laid out in the purchase of labour capacity. This leads us (and is the actual transition) to the consideration of *costs of production* and their relation to the *process of the sale* of the product.

There are still a few remarks to make before we pass on to this.

Firstly: From the standpoint of the society in which capitalist production prevails, capital appears as a *SELF*FACTOR—value as possessing in itself the quality of self-increase in consequence of *qualitates occultae*^a of some kind; how much this is the case appears strikingly in interest-bearing money capital, money capital loaned out at interest. An amount of value is sold here as *in itself* capital; i.e. capital itself appears as a commodity. A certain quantity of values, or a bill on values, is sold as a self-preserving and self-increasing amount. The situation is not altered by the fact that this amount is not money itself but the commodity into which it

^a Hidden qualities.—*Ed.*

can be converted. For as self-preserving and self-increasing value commodities are viewed and sold merely *qua* exchange value, i.e. *qua* money. This quality of being capital is sold as an immanent quality of the amount of value. It therefore returns to its owner with a profit.

Secondly: It needs no discussion here that if a commodity is sold above or below its value, there takes place merely a change in the distribution of surplus value between different capitalists, between the buyer and the seller. This difference in distribution, or alteration in the proportions in which different people share in the surplus value, does not change anything, either in its magnitude or in its nature.

Thirdly: The relation of competition, in so far as we have considered it here as an *illustration* (not as belonging to the development itself⁶⁷), entails that the surplus value the individual capitalist makes is not really the decisive factor. [XVI-977] For an average profit is formed; i.e. a general measure, and laws, according to which the capitalists calculate among themselves the *total value* of their class. (See *Jones* as well on this.^a) The real price of the commodity—disregarding fluctuations in the market price—is thereby considerably modified, and it differs from the value of the commodity. No individual capitalist can therefore say, nor does any one of them know, to what extent the surplus value he has produced himself enters, or does not enter, into the profit he makes, to what extent a part of the surplus value produced by the class of capitalists enters into the price of his commodity. It is best to bring this point in when considering the costs of production, just as it is best to bring in there the inverted manner in which the laws of capital are represented in competition. The perception, as it arises out of competition, the relation that dominates the capitalist (for it is in fact the laws of capital themselves which in competition appear to him as external compulsion applied by his capital to other capitals and to his capital by other capitals), alienates him completely from the perception of the inner essence of the relations within which he moves, and of which he is merely the interested agent or functionary.

Fourthly: The confusion or lack of distinction between surplus value and profit is the source of the greatest BLUNDERS IN POLITICAL ECONOMY, even where it is merely a matter of giving a correct presentation. The significant political economists, such as e.g.

^a See this volume, pp. 366-70.—*Ed.*

Ricardo, naturally do not confuse the two completely, although they never consciously grasp the difference. But for that reason the real law appears with them, on the one hand, as an abstraction from the real movement, which therefore also contradicts it everywhere in detail. On the other hand, they are bound to want to use the nature of value or surplus value to explain phenomena which only arise from surplus value in the form of profit. Hence incorrect laws. Ricardo abstracts from competition where he develops the general nature of capital. On the other hand, he already brings in fixed capital, etc., as determining moments right at the beginning, in the determination of value, and thereby abolishes his so-called law or reduces it to a mere shadow, as Malthus correctly shows.⁶⁸ On the other hand, with his followers, like Mill and McCulloch,⁶⁹ we see the insane attempt e.g. to convert circulation time into labour time, and finally to describe as *labour* not only the functions of beasts, but of inanimate things, all their natural motions. Say too in this connection.⁷⁰ However this criticism belongs to the concluding section of this chapter.⁷¹

2) [PROFIT ALWAYS EXPRESSES SURPLUS VALUE TOO SMALL]

It follows from the characteristic distinction of form between surplus value and profit that profit always *expresses a smaller proportion than that of real surplus value*, hence the rate of profit always represents the ratio in which capital appropriates alien labour as much smaller than it really is. This (tautological) law, once understood, does away with all incorrect statistics, and it has bigger merits. It is essential for the comprehension of phenomena which would otherwise remain incomprehensible and limp along beside the theory as indigestible fragments of reality.

It goes without saying that the magnitude *a* expresses a smaller ratio if it is measured against $b + c + a$ than if it is measured against $c + a$, or that a magnitude expresses a larger or smaller part of a third magnitude according to whether that latter magnitude is itself larger or smaller. The total capital is therefore always larger than the part of it which is exchanged for wages.

[XVI-978] 3) [THE RATIO IS ALTERED NUMERICALLY AND IN FORM]

Profit is therefore a different relation firstly in its form; and secondly it is numerically different. It is a converted form of

surplus value, in which there is a change firstly in the latter's numerical relation, secondly in its conceptual determination.

- 4) [THE SAME SURPLUS VALUE MAY BE EXPRESSED
IN VERY DIFFERENT RATES OF PROFIT;
THE SAME RATE OF PROFIT MAY EXPRESS
VERY DIFFERENT SURPLUS VALUES]

Thus, if the surplus value is converted into profit, i.e., considered numerically, if the surplus value is calculated in proportion to the total amount of capital advanced, the following propositions are a further consequence of this different presentation:

An *equal* profit may express different rates of surplus value. Take for example a profit of 10%. If the capital is 600, with constant capital 500 and variable 100, 60 thalers of surplus value amount to 60%, at the same time 10%, on a capital of 600. If the capital of 600 consists of 400 thalers of constant capital and 200 thalers of variable, 60 on 200 thalers amounts to a surplus value of 30%. The profit continues to be 10%. Finally, if the capital of 600 consists of 550 constant and 50 thalers of variable capital, 60 on 50 would amount to 120% surplus value (50:60=100:120) but profit would continue to be 10%.

- 5) [RELATION OF SURPLUS VALUE AND PROFIT=RELATION
OF VARIABLE CAPITAL TO TOTAL CAPITAL]⁶

Since profit is nothing but the ratio of the surplus value to the total amount of capital advanced, the rate of profit, or its proportional magnitude, evidently depends on two circumstances, firstly the *total amount* of capital advanced, and secondly the ratio of the variable part of the capital advanced to its constant part. This is when the surplus value is presupposed as given. Otherwise, it depends on 1) the ratio of the surplus value to the variable part of the capital; secondly the ratio of the variable part to the total quantity of capital, or also, and this is the same thing, its ratio to the constant part of the capital. E.g. 50 is $\frac{1}{2}$ of 100, but it is, at the same time, $\frac{1}{2 \times 6} = \frac{1}{12}$ of 600. If $50 = S$ (surplus value), $100 = V$, the variable capital, then $\frac{50}{100}$ is the rate of surplus value, which = $\frac{1}{2}$ or $50\% = \frac{S}{V}$. If the total capital is $600 = C(500) + V$, then

$^{50}/_{600}=1/12=8\frac{1}{3}\%$ is the profit, which $=\frac{S}{V+C}$. $\frac{S}{V}:\frac{S}{V+C}=(V+C):V$,
 or also $\frac{S}{v+c}$ (the rate of profit) : $\frac{S}{V}$ (is related to the rate of
 surplus value) = V (as the variable capital) : $V+C$ (is related
 to the total capital). Thus $\frac{S}{v+c}:\frac{S}{V}=V:(V+C)$.

Profit is related to surplus value as variable [should read: total] capital is related to total [should read: variable] capital (we do not need the categories of fixed and circulating capital here, because variable capital is circulating capital, but a part of constant capital is also circulating capital, so this antithesis does not belong here) and this evidently depends on the proportion in which constant and variable capital form components of the total capital [C], since $V=C-c$ and $c=C-v$. If C were $=0$, variable capital would have reached its maximum; i.e. the whole amount of the capital advanced would be variable capital, i.e. capital laid out directly in wages. In this case profit would be $=\frac{S}{c+v}=\frac{S}{v}$, i.e. [XVI-979] it would be equal to the surplus value. This would be the expression of its maximum. It declines in the same measure as c grows, and therefore as the total amount of capital advanced, $c+v$, or C , diverges from the variable capital v . If one considers the expression $\frac{S}{v+c}$, one sees that its magnitude evidently stands in a direct ratio to the absolute magnitude of s , which is however conditioned by the ratio $\frac{S}{v}$; it stands in an inverse ratio to the magnitude of $v+c$, i.e. the total amount of capital advanced. With Cherbuliez (see Notebook ⁷²) the determination of profit would be correct, if he did not confuse product and value of the product, use value and exchange value of the commodity.

6) COSTS OF PRODUCTION ⁷³

a) We have seen ⁷⁴ that the general form of capital is $M-C-M'$. In other words, money, an amount of value, is thrown into circulation in order to extract from it a larger amount. The process which produces this larger amount of value is capitalist production; the process which realises it is the circulation process of capital.

The capitalist does not produce the commodity for its own sake, not for the sake of its use value or for consumption. The product capital is in reality concerned with is not the material product but the gain, the *excess of the product's value over the value of the capital advanced*, which enters into the production of the commodity. If he converts £1,000 into machinery, cotton and wages, this is not for the sake of the twist he produces but because the machinery, cotton and wages now represent £1,200, after their conversion into twist, instead of £1,000 as originally. The hoarder as such changes a commodity of a definite value, e.g. £1,000 of twist, from the form of a commodity into that of money, in order to withdraw the latter from circulation and to possess the exchange value of his commodity in the independent form of money, the form in which it is independent of the commodity itself. The capitalist does not share the hoarder's superstitions. The forms in which exchange value appears, commodity or money, are indifferent to him, they are impermanent forms, because all real wealth is for him in fact merely exchange value in its different embodiments. He first converts money into a commodity—a commodity of a higher exchange value than the money advanced, because within the capitalist process of production more labour time is materialised in the commodity than was originally contained in its factors of production, and indeed it is realised through the unpaid appropriation of alien labour time—and in the circulation process he converts this commodity back into money, but now into a larger amount of money than the amount from which the process took its departure. A part of this excess over its original magnitude serves him as income, which he consumes, and a part is converted back into capital in order to begin the same cycle afresh. Whether he converts it into variable or constant, fixed or circulating capital, the capitalist must, on the one hand, uniformly withdraw every part of the capital from his private consumption and consume it industrially, and, on the other hand, expose it to the chances and risks of circulation, once it has assumed the form of the product. The capitalist uniformly advances the total capital—without regard to the qualitative differences within it in the production of surplus value—in order not only to reproduce the capital advanced but to produce an excess of value over and above the capital. He can only exploit labour, i.e. convert the value of the variable capital he advances into a higher value, through the exchange with living labour, by advancing at the same time the conditions for the realisation, the conditions of production of this labour—raw material and machinery—converting a sum of value

he possesses into this form of the conditions of production, just as he is only a capitalist at all, can only undertake the process of exploitation of labour at all, because he, as proprietor of the conditions of production, confronts the worker, as the mere possessor of labour capacity. It is quite indifferent to him whether it is considered that he advances constant capital to make a profit on the variable capital, or advances variable capital [XVI-980] to make a profit out of the constant capital; whether he lays out money in wages to give a higher value to the machinery and raw material, or advances money in machinery and raw material to be able to exploit labour. Although the profit he makes, the surplus value of the commodity he realises in the process of circulation, consists only of the excess of unpaid labour appropriated by him over the labour he has paid—his commodity only has a surplus value because a portion of unpaid labour time is now contained in it, and he sells this although he has not paid for it—the size of his profit by no means depends on the surplus value alone, but rather on the ratio of the surplus value to the total amount of capital advanced. If the capital advanced was 1,000, and if the value of the commodity into which it is converted is 1,200, the profit is only 200 compared with 1,000; $200:1,000=20\%$. The part of the capital that was laid out in machinery and material of labour is just as much advanced by the capitalist as is the part laid out in wages, and although the latter part alone creates surplus value, it only creates it on condition that the other parts, i.e. the conditions of production for the labour, are advanced, and all these elements enter uniformly into the product. Since the capitalist can only exploit labour by advancing constant capital, since he can only valorise constant by advancing variable capital, all these things are lumped together in his notion of the matter, and all the more so because his real profit is determined by the ratio of surplus value not to variable capital but to the total capital, hence is not determined at all by surplus value, but rather by the profit, which, as we have just seen, may remain the same and yet express different rates of surplus value.

We now return, therefore, to the point of departure from which we proceeded in considering the general form of capital. Profit represents the excess of exchange value, produced in the process of production and realised in the process of circulation, over the amount of money or exchange value originally converted into capital by the capitalist. Firstly, the real rate at which the capitalist profits, hence capital grows and accumulates, depends on this relation. Secondly, therefore, the competition between capitals is

also dependent on this. Thirdly, this leads to the disappearance of any recollection of the real origin of this profit and the qualitative distinction between the various elements, or the entry of these elements into the capitalist process of production.

Profit therefore=the excess of value of the product or rather the amount of money realised in circulation for the product (hence in the capitalist process, this excess during a particular turnover time) *above* the value of the capital which entered the formation of the product. The whole of the capital accordingly appears as *means of production* for this profit, and since these means of production are values which are here given over in part to the industrial process of production, in part to circulation, in order to create this excess of value or profit, the whole amount of the capital advanced appears as *costs of production of the commodity*, in fact costs of production of the gain or profit which is made by means of the commodity.

Cost of production means everything, all the components of the product the capitalist has *paid for*. If he sells the commodity at £1,200, and surplus value on this amounts to 200, he has *paid* £1,000, he has bought it, and converted it from the form of money, of exchange value, in which he originally possessed it, into the form of the commodity; i.e., from the standpoint of exchange value, into a lower form. If he were not to sell the commodity, which he has not produced for its use value, the £1,000 advanced would be lost. They are in any case *costs*, and must be replaced by the sale, so that the capital can be available again and again in its original state, so that it may simply be preserved. [XVI-981] The £1,000, or rather the advance of the £1,000, for they are intended to be replaced, are the *price*—hence the *costs*—which the capitalist pays in order to buy the £1,200.

It therefore follows that the *production costs of the commodity* from the standpoint of the individual capitalist, and its *real production costs*, are two different things.

The production costs contained in the commodity itself are equal to the labour time it costs to produce it. Or its production costs are equal to its value. The labour materialised in it includes the labour used to produce the raw material which has entered into it, as well as the labour used to produce the fixed capital employed in producing it, and, finally, the labour, the necessary and surplus labour, paid and unpaid labour, employed to produce it.

From the standpoint of the capitalist, the costs of production consist only of the money he has advanced—or only of the part of

the production costs of the commodity which he has paid. The capitalist has not paid for the surplus labour contained in the commodity. Indeed, it is precisely the fact of not paying for this which constitutes his profit. This surplus labour costs the capitalist nothing, although it naturally costs the worker labour just as much as does his paid labour, and enters into the commodity as an element constitutive of value just as much as the paid labour.

It follows, therefore, that surplus value, hence also *profit*, in so far as it is only another form of surplus value, does not enter into the production costs of the capitalist who sells the commodity, even though it does enter into the production costs of the commodity. His profit arises precisely from the fact that *he has something to sell which he has not paid for*. For him the *profit* consists in the *excess of the value* (the price) *of the commodity over its production costs*, which means in other words nothing but the excess of the total amount of labour time contained in the commodity over the labour time paid for by the capitalist which is contained therein.

This solves the *controversy* over whether profit enters into the costs of production or not. (See in Say, Jones, and particularly Torrens, etc.; these matters will be examined in more detail later on.⁷⁵)

b) In a deeper sense, it is a question (see the absurd Say, Storch, etc.⁷⁶) of whether profit enters into the costs of production, i.e. is indispensable to capitalist production. It boils down to the fact that surplus value, hence also profit, is not merely a form of income but a relation of production for capital (for accumulation, etc.); the absurdity of the abstract distinction between a relation of production and a relation of distribution is in general demonstrated here. The question can only be brought up at all through an absolute failure to comprehend the nature of capital, hence also of capitalist production. In the shape of interest, profit already enters as an element into the costs of production.

c) It follows from the law that the *production costs of capital* are smaller than the *value* of the commodities produced by it (and profit is constituted precisely by the *excess of the value* of the commodity *over the value* of the production costs contained in it, or the excess of the labour contained in it over the paid labour contained in it), that commodities can be sold *below* their value at a *profit*. As long as some excess over the production costs is realised, a profit is always realised. The commodity will be sold at a profit as long as it is sold *above* the value of its production costs,

although this does not mean that the buyer has to pay the whole of the difference between the value of the production costs and the value of the commodity. Assume that a pound of twist has a value of 1s., of which $\frac{4}{5}$ are costs of production. $\frac{1}{5}$ is unpaid labour, hence the element that constitutes the surplus value. If the 1 lb. of twist is sold at only 1s., it is sold at its *value*, and the profit realised in it amounts to $\frac{1}{5}s. = \frac{12}{5}p. = 2\frac{2}{5}d.$ If the 1 lb. were to be

sold at $\frac{4}{5}s.$, or $\frac{4 \times 12}{5} d. = \frac{48}{5}d. = 9\frac{3}{5}d.$, it would be sold at

$\frac{1}{5}$ below its value, and no profit at all would be realised. But if it is sold above $9\frac{3}{5}d.$, say perhaps at 10d., [XVI-982] it is sold at a profit of $\frac{2}{5}d.$, although this is still 2d. or $\frac{20}{10}d.$ below its value. The profit is there as soon as it is sold *above* its production costs; even if it is sold *below* its value. If it is sold at its value, the whole of the surplus value is realised for the capitalist, i.e. the whole excess of the unpaid labour contained in the commodity over the paid labour contained therein. Therefore delimited here is the whole of the room available for the rise and fall of profit. This room is determined by the surplus value, i.e. by [the correlation of] the value of the commodity and the value of its production costs, by difference between the value of the commodity and the value of its production costs, between the total amount of labour contained in it and the paid labour contained in it.

If the capitalist sells the commodity at a profit, but below its value, a part of the surplus value is appropriated by the buyer instead of the seller. This different division of the surplus value among different persons would naturally change nothing in its nature, just as it is a matter of complete indifference to the worker (unless he happens himself to be the buyer of the commodity) whether his unpaid surplus labour is appropriated by the capitalist who exploits him directly or by the class of capitalists, etc.

This law, that the capitalist can sell the commodity *at a profit*, although *below* its value, is very important for the explanation of certain phenomena of competition.

In particular, one of the main phenomena, which we shall come back to later in more detail, would be entirely inexplicable without this: namely, a *general rate of profit*, or the way in which the capitals work out amongst themselves the total surplus value produced by capital. A general rate of profit of this kind is only made possible by the fact that some commodities are sold above, others below, their value, or that the surplus value realised by the individual capital depends not on the surplus value it itself produces but on

the average surplus value produced by the whole of the capitalist class.

d) ⁷⁷ Therefore, if the *surplus value* is given, absolute or relative—i.e., on the one hand, there is a given limit to the normal working day, beyond which labour time cannot be extended, on the other hand the productive power of labour is given, so that the minimum of necessary labour time cannot be curtailed any further—profit can only be increased in so far as it is possible to reduce the *value* of the constant capital required for the production of the commodity. When constant capital enters into the production of a commodity, is required for its production, it is not its price (its exchange value) but its use value which alone comes into consideration. The amount of labour that flax e.g. can absorb in spinning does not depend on the *value* of the flax, but on its *quantity*, given the stage of production, i.e. given a definite stage of technological development; just as the assistance a machine affords to e.g. 100 workers does not depend on its *value*, *price*, but on its use value, its character as a machine. At one stage of technological development a bad machine may be expensive, while at a higher stage of technological development an excellent machine may be cheap. The English cotton industry was first able to develop once cotton was converted from an expensive into a cheap material by the invention of the COTTON GIN (1793) //because 1 old black woman could separate 50 lbs of cotton fibres from cotton seed in 1 day immediately after the invention of this chopping machine, whereas previously the day's labour of 1 black man was required to perform this process for a single pound of cotton//.

The *value* of the constant capital required at a particular technological stage can only be reduced, hence the *profit*, $\frac{s}{c+v}$ can only be increased, while the surplus value remains the same, in two circumstances. Either if there is a direct fall in the *value* of the fixed and circulating capital employed, i.e. both become the product of less labour time, hence there is an increase in the productive power of the branches of labour of which they are the direct products. In this case there is an increase in the profit in a branch of labour because of a growth in the productivity of labour (hence to a certain degree a growth in surplus labour) in the other branches of labour which supply it with the conditions of production. [XVI-983] In this case too, therefore, the profit thereby obtained (or the increase of profit, or, and this is the same thing, the diminution of the difference between profit and surplus

value), or the greater productivity of capital (for profit is the actual product of capital) is a result of the growth in the productivity of labour and the appropriation of that growth by capital. Only this does not take place directly, i.e. it takes place indirectly. Thus the growth of the profit a capitalist obtains through the cheapening of cotton and the spinning machine, though not a result of the rise in the productivity of spinning, is indeed a result of the rise in the productivity of machine manufacture and flax cultivation (or cotton cultivation, etc.).

The advantage of this is twofold, it raises the productivity of capital in two ways. In order to materialise a given quantity of labour, hence to appropriate a given quantity of surplus labour, a smaller outlay is needed in purchasing the conditions of labour, the constant part of capital, the value of which only reappears in the product but is not increased in it. There is therefore a fall in the production costs now required to appropriate a given quantity of surplus labour. This is expressed by a rise in the ratio of the variable part of capital to the constant part, hence to the total capital. There is therefore an increase in profit, for $\frac{s}{c+v}$ clearly grows in line with a fall in the value of C , the numerical magnitude of C , since it would reach its maximum when $C=0$.

Secondly: Let us assume that a constant capital of a given magnitude was previously required e.g. to employ a given number of spinners and to appropriate a given quantity of their surplus labour. At the given stage of production the employment of these 100 men requires machinery^a of a certain quality and a definite size, and similarly a definite quantity of raw material, cotton, wool, silk, etc. But the value of this constant capital has nothing to do with the spinning process into which it enters. If it fell by a half, the surplus value produced in the spinning process would firstly remain the same as before, but the profit would have increased. If the constant capital was originally $\frac{5}{6}$ of the total capital, the variable capital $\frac{1}{6}$ —hence e.g. out of £600, £500 constant, £100 variable—and the surplus value 30%, the rate of profit would come to 5% on £600 (100×6 makes 600; $6 \times 5 = 30$). (Rate of profit 5%: surplus value 30% = 600 (c+v):100(v) ($5 \times 600 = 3,000$, and 30×100 similarly = 3,000). The rate of profit was 5%. If now the production costs of the constant capital were to fall by half—i.e. if there were a doubling of productive power in the branches which

^a In the manuscript, Marx wrote the words "fixed capital" over the word "machinery".—Ed.

provided this constant capital—therefore from 500 to 250, the total amount of capital employed would have fallen from 600 to 350. The surplus value, at 30, and the variable capital, at 100, would remain the same... So now it is 30 on 350. The rate of profit, instead of $\frac{30}{500+100}$, is $\frac{30}{250+100}$; so instead of 5% the profit is $8\frac{4}{7}\%$. ($350:30=100:8\frac{4}{7}$.) The profit would therefore have increased because in the first case the ratio of the variable capital to the total capital= $100:600=1:6$. In the second case it is $100:350=1:\frac{7}{2}$. In the first case the variable capital= $\frac{1}{6}$ of the total capital, in the second it= $\frac{1}{\frac{7}{2}}=\frac{2}{7}$. But the ratio is $\frac{1}{6}:\frac{2}{7}=\frac{7}{42}:\frac{12}{42}$.

The ratio of the variable capital to the total capital has therefore risen from $\frac{7}{42}$ to $\frac{12}{42}$, i.e. by $\frac{5}{42}$. The rate of profit has increased by the same ratio as that by which the ratio of the variable capital to the total capital has increased, [XVI-984] because $\frac{7}{42}:\frac{12}{42}$ or $7:12=5:8\frac{4}{7}$. ($5 \times 12=60$, and $7 \times (8\frac{4}{7})=56 + \frac{7 \times 4}{7} = 56 + 4=60$.)

This would therefore be the first gain, or, speaking generally, a capital of 350 would now bring in as much profit as a capital of 600 did previously, because the surplus value would remain the same, but the employment of the same amount of capital laid out in wages would now only require for its realisation a constant capital of 250 instead of the 500 required previously. The *production costs* required for the production of the surplus value and accordingly of the profit would have been reduced.

Secondly, however, £250 out of the total capital of £600 required previously for the production of the same amount of commodities and the same surplus value would be set free. This money could either be invested in another branch of business for the appropriation of alien labour, or employed in the same branch of business. Presupposing the same stage of production and therefore the same ratio between the different parts of the capital, twice the number of workers could be employed, hence twice the surplus labour could be appropriated, without any increase at all in constant capital. An increase of only £100 would be needed for wages; hence a total capital of £700, to make a gain (a surplus value) of £60 ($60:200$, the same as $30:100$, surplus value as before is 30%). Previously £1,200 would have been needed (according to the previous rate). Or if the 250 were added as new capital to the old (where this is technically possible) and divided into c and v in the same proportion, $71\frac{3}{7}$ would be the share of

labour and $178\frac{4}{7}$ the share of constant capital. According to the previous ratio, surplus value would then be $21\frac{3}{7}$ (or 30%) ($100:30=73\frac{3}{7}:21\frac{3}{7}$). The total profit on the capital of £600 (although the rate of surplus value remains the same, surplus value itself has increased, because the ratio of variable capital to total capital has increased) now= $30+21\frac{3}{7}=51\frac{3}{7}$.

The rate of profit would have increased from 5% to $8\frac{4}{7}\%$ as compared with the original situation, while the amount of profit would have increased, because surplus value has increased, from 30 to $51\frac{3}{7}$. Every reduction in the value of the constant capital, leaving aside the fact that it increases the rate of profit, because it reduces the ratio of total capital to variable, now permits the exploitation of the same amount of labour with a smaller outlay of capital overall, therefore leaving the surplus value unaltered, and sets free a part of the capital, which can be converted now into variable capital, the self-increasing part of capital, instead of being converted into constant capital, as it was previously. Any increase in the value of constant capital (if the stage of production, hence the technological conditions of production, remain the same) only increases the production costs required for the production of the same surplus value, and therefore reduces the rate of profit. Any reduction in the value of constant capital, as long as the stage of production remains the same, increases the part of capital which can be converted into variable capital, capital which is not only self-preserving but self-increasing, and therefore increases not only the rate of profit, but its amount, because it increases the amount of surplus value.

[XVI-985] *Another example.*

If, therefore, there is a given capital, of e.g. £9,000 sterling, and if the same flax, machinery, etc., which cost £6,000 previously, and was worked on by 100 workers during the year, at £30 apiece, can now be bought at £3,000, the profit (surplus value calculated on the total capital) which accrued to the capitalist for the £6,000 would be as large as the profit for which 9,000 was previously necessary. He would need $\frac{1}{3}$ less capital in order to *absorb* and *appropriate* the same surplus labour. £3,000 would therefore be set free for him. If the ratio remained the same, he could now, out of the £3,000 which had been set free, employ 1,500 for machinery and flax, 1,500 for wages, and absorb the surplus labour of 50 more workers than previously with the same capital of £9,000. In the first case, the rate of profit would have risen if he only employed £6,000, because the ratio of the variable to the total capital would have increased. In the second case, the

AMOUNT of profit would have risen as well as the rate, if he continued to employ the £9,000 in production, because 1) 4,500 out of the 9,000 would have been exchanged for living labour, as against 3,000 previously, and because 2) the surplus labour of 50 more men would have been appropriated, the quantity of surplus labour would have increased not only *relatively* but *absolutely*. In both cases, the productivity of labour, in so far as it affects the constant capital, only increases the profit (the rate of profit) because it increases surplus labour *relatively*, in proportion to the capital laid out, or *absolutely* (the latter when a part of the capital which previously, on a given, on the same, scale of production, had to be converted into constant capital, now becomes free, or can be converted into variable capital).

The *increase in the rate of profit*—through a reduction in the ratio between variable capital and constant capital [or in the ratio of variable capital to]⁷⁸ the total amount of capital advanced, or, and this is the same thing, through a *reduction in the value* of the constant capital, as a result of the increased productive power of the labour which produces it—originates in both cases solely from the fact that surplus value is increased *relatively* or *absolutely* in proportion to its production costs, i.e. to the total amount of capital required to produce it, or that the difference between profit and surplus value is lessened. This increase in the rate of profit therefore rests on the development of productive power, not in the branch of labour belonging to a particular capital, but in the branches of labour of which the product is the constant capital required in that branch of labour.

// In reality the part of capital which exists as fixed capital—or also all the commodity capital which was produced under the old conditions of production—is *relatively devalued* by this increase in productive power or the relative devaluation of this capital; just as the rate of profit is lessened, hence also profit is lessened proportionately to capital, whereas the *value of that capital* itself rises, if there is a reduction in productive power, an increase, it may be, in the cost of iron, wood, cotton, etc., and other elements which [form] fixed capital and circulating capital, to the extent that they enter into constant capital, given that surplus value remains the same. This effect is to be considered in dealing with competition.⁶⁷ This circumstance never comes into consideration with *new capital investment*, whether in the same business or in the newly established one; just as little with the raw material which has to be bought afresh. //

// Furthermore, the rate of profit can be increased by *curtailment*

of circulation time, hence by all inventions which ease COMMUNICATIONS and speed up the means of transport, and similarly by speeding up the formal transformation processes of the commodity, thus through the development of credit and the like. But this actually needs to be considered under the heading of the circulation process.⁵⁴//

A second kind of increase in the rate of profit arises from another source, not from *economy in the labour* which produces constant capital, but from *economy in the employment of constant capital*. Constant capital is on the one hand *saved* by the concentration of workers, by cooperation, by labour on a large scale. The same factory buildings, heating, lighting, etc., cost less, relatively speaking, when employed on a large than when employed on a small scale of production. Here it is the common application of the same use value which lessens the costs of production. Similarly, the cost of a part [XVI-986] of the machinery, etc., e.g. a steam-boiler, does not rise in proportion to its horsepower. (See example.⁷⁹) Although its absolute value rises, its *relative* value falls, in proportion to the scale of production and the magnitude of the variable capital which is set in motion, or the quantity of labour power which is exploited. The economy a capital applies in its own production, e.g. spinning, rests directly on *economy of labour*, i.e. the exchange of as little objectified labour as possible for as much living labour as possible, the production of the maximum amount of surplus labour, which is only made possible by increasing the productive power of labour. The *economy* just mentioned, in contrast, rests on accomplishing this *greatest possible appropriation of alien unpaid labour* in the most economical way possible, i.e., on the given scale, with the smallest possible *production costs*. This economy, too, rests either on exploiting the productivity of social labour outside this particular branch of production, i.e. the productivity of the labour employed in the production of constant capital; or, in the case considered above, on economy in the employment of constant capital, which either directly makes possible saving through cooperation, etc., the social form of labour within capitalist production, and the scale of this production, or makes possible the production of machinery, etc., on a scale at which its exchange value does not grow uniformly with its use value. In both cases, the raised productivity is the increase in the productivity of labour which arises from the social form of labour, this time not [through changes] in the labour itself but in the conditions under which and with which it produces. It is also relevant here that in large-scale production the

waste products more easily become the materials for new industry than does the scattered waste of small-scale industry; this likewise means a reduction in production costs.

Capital therefore has a tendency in the direct employment of *living labour* to reduce it to *necessary labour*, and always to curtail the labour necessary for the manufacture of a product by exploiting the social productive power of labour, hence to economise on living labour—to employ as little labour as possible for the manufacture of a commodity. In the same way, it has a tendency to employ this labour which has been economised and reduced to necessary labour under the *most economical conditions*, i.e. to reduce the exchange value of the constant capital to the minimum possible level—hence altogether to reduce *production costs to their minimum*. If we see, therefore, that the value of the commodity is determined not by the labour time contained in it as such, but by the *necessary* labour time contained in it, capital realises this determination first, and at the same time continuously curtails the labour socially *necessary* to the production of a commodity. The price of the commodity is thereby reduced to its minimum, since all the elements of the labour required to produce it are reduced to a minimum.

e) In order to calculate profit (like surplus value) we take not only the surplus value a particular capital produces in a given period of time (turnover time) but also a quantity of capital, e.g. 100, as a yardstick, so that the ratio is expressed in per cent.

f) It is clear that the rate of accumulation, i.e. of the real growth of capital, is determined by the profit and not by the surplus value, since, as we have seen, the same profit and the same rate of profit may express very different rates of surplus value. It is profit that expresses surplus value in proportion to the total amount of capital advanced, hence the real growth (or the ratio of real growth) of the total capital. The real gain the capitalist makes is therefore not expressed by the surplus value but by the profit. Surplus value is related only to the part of the capital from which it directly arises. Profit is related to the whole of the capital which has been advanced in order to produce that surplus value; this capital therefore contains not only the part directly exchanged for living labour, but also the part representing the sum of the value of the conditions of production under which alone the other part of the capital can be exchanged for living labour and the latter exploited.

[XVI-987] Surplus value only expresses the excess of the part of

living labour exchanged and appropriated in the production process over the equivalent given away in exchange for it in wages, in the form of objectified labour. Profit, however, expresses the excess of the *value of the product over the value of the whole of the costs of production*; hence it expresses in fact the increment of value which the total capital receives at the end of the processes of production and circulation, over and above the value it possessed before this process of production, when it entered into it.

Profit is therefore also the sole form which interests capital directly, and in it the memory of its origin is completely extinguished. The conversion of surplus value into profit therefore completes the mystification which makes capital appear as a SELF-FACTOR and a person vis-à-vis labour, thus turning the objective moment of the production process into a subject.

g) How, then, is profit related to the size of the capital, *presupposing the same surplus value*? This is the same question as: How is the amount of profit related to the rate of profit?

But secondly, how does a *general rate of profit* originate, a rate of profit dependent on the *size* of the capital alone, and independent of the surplus value which is created by a particular capital in a particular branch of business, or of the productivity (i.e. the ratio of appropriation of alien labour) prevailing in a particular branch of business?

These two questions, which are connected with production costs, must be answered before we proceed to the solution of the most important question in this section—the decline of the rate of profit in the course of capitalist production.

// Before this, one further remark regarding 6 c).^{a 80} Since commodities can be sold at a profit *beneath* their value—namely, provided that they are sold *above* the capitalist's costs, the part of the production costs paid for by the capitalist himself, the part advanced from his own purse—and since the difference between the value of the commodity and costs of production allows the capitalist considerable room for manoeuvre and makes it possible to set very different price levels for the commodity below its value without liquidating profit altogether—it is clear that competition could force down the rate of profit everywhere, not only in one branch, but in many, indeed in all branches of production, through a gradual compression of prices below their value. If society consisted purely of industrial capitalists, this would balance out, since each of them would obtain his conditions of labour

^a See this volume, pp. 82-84.—Ed.

cheaper not only as a private consumer but as an industrial consumer, the rate of profit therefore rising again generally as a result both of the devaluation of the total capital advanced and of the diminution in the production costs of labour capacity, hence the rise of surplus value relatively to variable capital. But society includes classes with fixed incomes, THE MONEYED CLASS, ETC., creditors and so on, hence there are fixed deductions from surplus value or profit which do not fall with the reduction in the rate of profit or the fall of the prices of commodities beneath their value. These classes would make a double gain. The rate which would fall to their share would have a higher exchange value, because it remained unchanged, while the prices of commodities would on the average have fallen beneath their value. They would come to a greater proportion of the deduction, and would be able to buy more with this. Something of the kind took place in England between 1815 and 1830 (see *Blake*⁸¹). Under these circumstances, the situation of the actual industrial capitalists might be very precarious. The moneyed classes would in fact pocket the considerable part of the surplus value lost by industrial capital itself. However, such a state of affairs could only be temporary, since it would call forth bankruptcies among the industrialists (as among the English farmers between 1815 and 1830) and hold up the accumulation of capital. A reaction would necessarily occur. Therefore, although competition may reduce the *rate of profit* not only in a particular branch of industry, as long as it is higher than the average rate, but also, [XVI-988] as Adam Smith says,⁸² in all branches, the latter effect can only be temporary. The capital accumulated in the hands of the FIX[ed] INCOME and MONEYED CLASSES would either have to be employed in the purchase of commodities for consumption, and in this case the price of the commodity would again move closer to its value, hence the rate of profit would again rise; or it would itself be loaned out again as capital. In the latter case there would be on the one hand a yet further increase in competition, hence the rate of profit, which had already fallen a long way, would sink still further owing to a further reduction of the prices of the commodities beneath their values, thereby bringing about a crisis, an explosion and a reaction; but on the other hand, the new placements of funds, whether as interest or as rent, would be made at a lower rate, in line with the fall in prices, thereby bringing forth a situation approximating to that in which *all* capitalists sold the commodities beneath their value, hence, through equalisation, *at* their value. The rate of profit would thereby rise to its normal level again.

From this standpoint, therefore, it appears that Adam Smith's view is correct in one aspect, overlooked by his opponents, that it explains certain temporary phenomena of modern industry, but does not explain the general phenomenon which is involved in the normal decline of the rate of profit; all it does is to explain merely temporary *general fluctuations*, which are later again balanced out.

Further: This view does not in fact imply that the *rate of profit* in general sinks, but rather the rate of profit which appears directly as *industrial profit*. It implies that there merely takes place a different distribution, since in fact a considerable part of the surplus value is *POCKETED* by the *MONEYED INTEREST* and the *FIXED INCOME MEN*, instead of the industrial capitalists themselves. There is, it suggests, merely a different *distribution* of profit in general; profit itself has not changed its rate, since it now appears as higher income in the hands of other classes. In the long term, indeed, this would lead to crises and reaction. So Adam Smith does not explain the actual phenomenon. But the value of the *FIXED INCOMES* would rise, on the one hand because they would collect a higher rate of overall profit—although the rate would remain the same nominally—and secondly because they would in fact buy for their share not only more products, but also a greater amount of objectified labour, even if this labour was not *paid for* by them. //

It is clear that if the surplus value is given, and the *rate of profit* in which it is expressed is given // this may, as we have seen, vary greatly while the surplus value remains the same //, the amount of profit, the absolute magnitude of profit, depends entirely on the *magnitude of the total capital employed*. If the profit on 100 thalers is 10, it is 10,000 on 100,000, namely $10 \times 1,000$, since the ratio of capital 100 to capital 100,000 = $10 : (10 \times 1,000)$. The amount of profit grows in this case in exactly the same measure as the value or the magnitude of the capital advanced; just as when the capital is given, the amount of profit depends on the rate of profit.

1) We see, however, that *the same* surplus value may be expressed in very different rates of profit, according to the ratio of the variable capital to the total capital.

2) But secondly, the surplus value itself is in the nature of things *not the same* for different capitals. *It differs*. In the first place, the ratio of the actual *circulation time* to *production time* varies, and therefore the turnover time of different capitals is different, and the surplus value really created stands in a ratio which is the inverse of that between circulation time and production time. Secondly, the normal working day differs with different capitals, and therefore surplus labour time is different,

although this is initially only to be conceived as compensation for the proportions in which the different modes of labour stand towards simple average labour. Thirdly, the ratio of circulating to fixed capital, the ratio in which *fixed capital* turns over, etc., are different. Productivity differs in different branches of industry, and the proportion in which they participate in the productivity of other branches of industry is also different. For example, an industry which employs very few hands does not participate in the cheapening of agricultural products, or, in general, in the cheapening of means of subsistence, in the same measure as an industry which employs many hands, one setting in motion much living labour; just as an industry which employs little machinery does not participate in the same measure in the cheapening of machinery as one which employs a great deal of machinery.

[XVI-989] One can only speak of an *average rate of profit* when the rates of profit in the different branches of production of capital are different, not when they are the same.

A closer investigation of this point belongs to the chapter on competition.⁶⁷ Nevertheless, the decisive general considerations must be adduced here.

Firstly, it lies in the nature of a common or general rate of profit that it represents the *average profit*; the average of very diverse rates of profit.

The average rate of profit presupposes further that if a particular capital in a particular investment brings in a profit which rises or falls about a certain point, its profit rises or falls above or below the normal rate of profit, which is therefore determined precisely by the level designated from this point of measurement. At this level the rate of profit counts as the normal one, which capital as such is by and large entitled to. But even now we are not yet at the decisive point.

A rate of profit—to the extent that it is not compensated for by the particular nature of the capital investment, in an analogous manner to the way concurrent circumstances, such as the particular nature of the labour, etc., modify somewhat the differences in length of the normal days of different branches of labour—above or below the average counts as an exceptional condition for capital in the particular branch of investment where it takes place, and it will be forced down or raised up by competition to the general level, through the entry of outside capitals into the privileged branch, or in the opposite case the exit of local capitals—capitals which are settled in that branch—out of the latter. The level of the rate of profit thereby falls in the first

case, and rises in the second. The surplus profit, or the short-fall of profit, an individual capitalist encounters in a particular branch (district) of capital investment, does not belong to this discussion at all. What is involved here is rather the profit of capital in all the particular branches of production, or in every particular sphere of capital investment conditioned by the social division of labour—for every capital placed in average or normal conditions. This qualification is necessary, in order to proceed, through analysis, to what lies at the basis of the *average rate of profit*.

If we adopt some particular quantity of capital, e.g. 100, as a yardstick—i.e. a yardstick for comparing the magnitude of different capitals—the meaning of the *average rate of profit* is that on £100 a profit of e.g. £10, of $\frac{1}{10}$ of the capital advanced, or of 10%, is made, entirely disregarding the particular nature or determination of the sphere of production in which this £100 is invested as capital. It therefore by no means follows that a sum of value of £100 can be invested as capital in every sphere of production. It only follows that in each of these spheres 10% is made on 100, whatever the magnitude of the capital required for engaging in a particular branch of production. A *general rate of profit* therefore means in fact nothing but that the total amount of profit is absolutely determined by the magnitude of the capital advanced. The capital may be large or small, the average rate of its profit is 10%, and indeed in the same circulation time, turnover time, hence 1 year for example, as the measure of circulation time. If circulation time is posited as indifferent for all capitals (or identical, which is the same thing); furthermore the rate of profit too; the amount of profit will depend entirely on the magnitude of the capital. Or, the amount of profit = a times x , in which a is a fixed magnitude, x is the variable which expresses the magnitude of the capital. Or, given the magnitude of the capital, the amount of profit is given, namely determined, by the general rate of profit. [XVI-990] That the general rate of profit = 10%, e.g., means nothing at all except that $\frac{1}{10}$ of the capitals, in whatever branch they are employed, returns as profit or that the profit stands in the same ratio to the magnitude of the capital—has the same ratio to the magnitude of the capital advanced, its amount therefore depends directly on the magnitude—stands in direct ratio to the magnitude of the capital; hence is similarly independent of the *real turnover time of the capital* (since the rate of profit is the same for any given circulation time), is independent of its *specific circulation time*—i.e. of the ratio of its circulation time to its production time; is similarly independent of the organic relation

of the different components of capital in each particular branch of production, hence independent of the *real surplus value*—i.e. the real quantity of surplus labour—which every individual capital absorbs or produces in every particular branch of production.

The conversion of surplus value into profit alters not only the numerical relation—or rather the *expression of the numerical relation*—but the form as such. Surplus value appeared as a relation in which objectified labour was exchanged for living labour, or in which objectified labour appropriated living labour without exchange. The organic relation of the different parts of the capital advanced to each other, and therefore also the relation of the surplus value to a *specific* component of the capital emerges, is expressed in this. The relation ceases as soon as surplus value is expressed as profit. All parts of the capital advanced appear as uniform magnitudes of value, only differing quantitatively—amounts of exchange value, sums of value which in relation to their quantity—or rather added together—uniformly have the quality of producing not only themselves but an excess over their original magnitude: profit. The capital is the main sum, the profit is the subsidiary sum produced by this main sum in a definite circulation time. The main sum, the capital, is related as ground (cause) to the subsidiary sum as the grounded (consequence, effect). This appears as the existing law of capitalist production. How and whence and why is so little expressed in this relation of capital and profit that the spokesmen of capitalist production, the political economists, give the most varied and contradictory interpretations of this phenomenon.

Nevertheless, even after this conversion of surplus value into profit, surplus value remains equal to profit as an absolute magnitude. Whether 100 is calculated as a profit of 10% on 1,000, or as a surplus value of 20% on the variable part contained within that 1,000, say 500, the 100 continues [to appear] *as the same magnitude of value, only differently calculated //and in the difference of the calculation there exists the difference of form, the extinction of the relation of this excess over the capital advanced to the organic relation of the different components of capital//*. In itself the distinction remains purely formal. The difference of surplus value in particular capital investments would therefore continue to be displayed here as a *difference of profit*.

The situation is entirely different, however, with the *general rate of profit*, the most general law of which is expressed in the fact that the rate of profit is equal for all capitals, or, and this is the same

thing, that the amounts of profit are related to each other directly and exactly as the magnitudes of the capitals.

The *general rate of profit*, and therefore profit in its real, empirical shape, already implies the conversion of surplus value into profit and therefore the conversion of the rate of surplus value into the rate of profit. But *then the differences in surplus value* (in its rate) (and therefore also relatively in the total amounts of surplus value), as they emerge in the particular spheres of capital investment, partly owing to differences in the ratio of variable to constant capital, partly owing to the ratio of circulating and fixed capital (let us say owing to all the relations which emerge from the ratio of production time to circulation [XVI-991] time)—these *different rates of surplus value*, or the *diversity of surplus value*, continue to exist, although in the altered form of differences in profit or *different rates of profit*. These serve as the substance, the prerequisite, of the *general rate of profit*, and therefore of *profit in its organic form*. They are equalised, reduced to their average magnitude, which is then the real (normal) rate of profit in all particular spheres—particular spheres of production of capital—produced by the division of social labour. On the basis of the first transformation, therefore, a second takes place, which no longer affects the form alone, but also the substance itself, in that it alters the *absolute magnitude* of profit—hence of surplus value, which appears in the form of profit. This *absolute magnitude* was untouched by the first transformation.

Whatever the production costs (in the capitalist's eyes) in any particular sphere of production—hence of any particular commodity—the capitalist adds e.g. 10% (the general rate of profit) to the sum advanced, calculates thus that 10% will be added to the amount of commodities produced in a year. This 10% then enters into the price of the commodity, and if the commodity is sold at this price the normal profit, or the average profit, is realised. If, e.g., the capitalist were to reckon 2% over this average profit in the first half of the year, and 2% under in the second half, the total amount of commodities during a year, or the average profit he makes during a year, would represent the normal profit or average profit of a capital of a given magnitude, since the increases and reductions in profit during the daily transactions would have balanced out to that amount.

But in its essence profit consists of surplus value—not of a *formally* higher valuation of the product, as perhaps the money price rises nominally if the value of the material of money, gold perhaps, falls, without a simultaneous fall in the value of

commodities. Surplus value is a genuine creation of new value. It represents more objectified labour—hence a higher real exchange value—than the labour originally objectified in the capital, i.e. it goes beyond its original exchange value. And this surplus quantity of labour is realised in a surplus quantity of product or use value. Just as it would be wrong to regard a greater quantity of use values or products as a greater quantity of objectified labour on account of their greater quantity—with an increase in the productivity of labour they may represent the converse, a smaller quantity of labour—so it is correct that at a given level of the productivity of labour, at a given stage of production, surplus labour or surplus value expresses itself at the same time as surplus product, more use value. If we consider the total capital, the total surplus value represents the total excess quantity of labour which is realised in the total SURPLUS PRODUCE, over and above the product which replaces the constant part of capital and is required for the reproduction of the whole of the working class—a SURPLUS PRODUCE which is in part converted back into capital, and in part forms the income of all the classes living, under various headings, from their command over alien labour, from their respective shares in this SURPLUS PRODUCE.

If the addition of profit to price were merely formal, it would be *nominal*, in the same way as if the value of the total product were only distinguished from the total value of the capital advanced by being valued, let us say, in money whose value had fallen, or, equally, whose numerical expression had been magnified by being valued in silver instead of in gold. [XVI-992] Neither new value nor SURPLUS PRODUCE would be implied thereby. All capitalists would sell the same value at a higher money price, the same as if they were all to sell it at a lower money price or all to sell it at a money price corresponding to the value. It would then also be a matter of indifference whether a profit of 10% or 1,000% were added to the price of the costs of production, for the BIG FIGURES which express a merely nominal increase of the price are just as irrelevant as if this nominal increase were to take place on a smaller scale. The percentages of this nominal increase would be a matter of complete indifference. The wage, i.e. the part of capital which is set aside for the reproduction of labour capacity, as well as the part of capital which replaces the constant capital advanced, would appear in the same ratio in BIGGER FIGURES, in a higher monetary expression.

Just as the surplus value of the individual capital in each particular sphere of production is the measure of the absolute

magnitude of the profit—in so far as this is merely a converted form of surplus value—so is the *total surplus value* produced by the total capital, hence the whole of the class of capitalists, the absolute *measure of the total profit of the total capital*, whereby profit should be understood to include all forms of surplus value, such as rent, interest, etc. (that this total profit implies an ENCROACHMENT on wages is beside the point, as was shown earlier^a). It is therefore the absolute magnitude of value (and therefore the absolute SURPLUS PRODUCE, amount of commodities) which the capitalist class can divide up among its members under various headings. The empirical, or average, profit can therefore be nothing other than the distribution of that total profit (and the total surplus value represented by it or the representation of the total surplus labour) among the individual capitals in each particular sphere of production, in equal proportions, or, what is the same thing, according to the different proportions in which they stand to the magnitude of the capitals, and not according to the proportion in which the capitals directly stand to the production of that total profit. It therefore only represents the result of the particular mode of calculation in which the different capitals divide among themselves aliquot parts of the total profit. What is available for them to divide among themselves is only determined by the absolute quantity of the total profit or the total surplus value. The rule of distribution is equal profit for capitals of equal magnitude or inequality of profit in proportion to the unequal magnitude of the capitals. What was merely formal in the first transformation, the calculation of surplus value on the individual overall capital as a *uniform, distinct amount of value* without regard to the organic relation of its components, becomes here a material difference, since the share of total profit or total surplus value is uniformly determined, measured, at so many per 100, hence according to the magnitude of the capitals, without regard to the proportion in which each individual capital in each particular sphere of production participates in the creation of that total profit or total surplus value. Just as in the first transformation the surplus value is formally determined as the excess of the value of the product over the value of the capital advanced, so here the share of each capital advanced in the excess of the value of the total product of the total capital over its total value is determined materially in proportion to the value of the capital advanced. The AGENCY

^a See this volume, pp. 69-76.—Ed.

through which this calculation is performed is the *competition of capitals* with each other. From the moment at which the surplus value is converted as profit, i.e. excess over the capital advanced, the second practical consequence follows, that a particular excess in proportion to the capital advanced forms the profit or the surplus value falling to its share, which stands in proportion to its magnitude—the magnitude of the production costs—and these come down to the value of the capital advanced. Profit thus equalised, levelled, expresses for capitals in one sphere of production a higher surplus value than they really produce directly, [XVI-993] for others a lower one, and for both the average of these higher and lower amounts. The absolute measure of this rate of profit naturally depends on the absolute proportion of the surplus value to the totality of the capital advanced.

In fact the matter can be expressed in this way:

Profit—as first transformation of surplus value—and the rate of profit in this first transformation—expresses surplus value in proportion to the individual overall capital of which it is the product—treating all parts of this overall capital as uniform, and relating to the whole of it as a homogeneous sum of value, without regard to the organic relation in which the different components of this capital stand towards the creation of its surplus value.

Empirical or average profit expresses the same transformation, the same process, in that it relates the total amount of surplus value, hence the surplus value realised by the whole capitalist class, to the total capital, or the capital employed by the whole capitalist class, in exactly this way—it relates the total surplus value as profit to that total capital of society, without regard to the organic relation in which the individual components of that total capital have participated directly in the production of that total surplus value, on behalf, that is, of the individual independent capitals or the individual capitalists in the particular sphere of production. Just as, for example, with the individual capital of £900, if it yields a surplus value of £90, this profit is related equally to all components of the £900, and every component of the latter is valorised at 10%, thus, it may be, the 350 fixed capital, the 350 capital for raw material, and the 200 capital for wages, each provides 10%, each therefore produces a profit in proportion to its magnitude—“the capitalist generally expects an equal profit upon all the parts of the capital which he advances” (*Malthus*)⁵⁶—so the total capital C socially, or the total amount of all the capitals of all the individual capitalists, is related to S , the surplus value, as the rate of profit r , for example, and every part of this total

capital participates in the proportion r to P or S , hence in proportion to the magnitude of its value, irrespective of its direct functional relation in the production of S .

The second transformation is a necessary result of the first, which emerges from the nature of capital itself, whereby the surplus value is converted into an excess of value over production costs, i.e. the value of the capital advanced. In the first case, the absolute magnitude of the surplus value=that of the profit; but the rate of profit is less than the rate of surplus value. In the second case the absolute magnitude of the total surplus value=the magnitude of the total profit; but the average rate of profit is less than the average rate of surplus value (i.e. the ratio of surplus value to the total value of the variable capital contained in the total capital).

The transformation is formal in the first case, in the second material at the same time, since now the profit that falls to the share of the individual capital is in practice a different magnitude from the surplus value created by it, it is larger or smaller. In the first case, the surplus value is calculated only according to the magnitude of the capital which produces this particular surplus value, without regard to the capital's organic components. In the second case, the share of the individual independent capital in the total surplus value is calculated in accordance with this capital's magnitude alone, without regard to its functional relation to the production of that total surplus value.

In the second case, therefore, an essential difference enters the picture, both between profit and surplus value and between the price and the value of the commodity. Hence the difference between the real prices—even the normal prices of the commodities—and their values. The more detailed [XVI-994] investigation of this point belongs to the chapter on *competition*,⁶⁷ in which it will also need be demonstrated how it is that despite this difference between the normal prices of commodities and their values, alterations in the value of the commodity modify its price.

But it will be understood from the outset how through the confusion of empirical profit with surplus value—which profit presents in a very transformed form (just as through the confusion of the difference itself which corresponds to this between the normal prices and the values of commodities)—and this confusion is a common feature of all previous political economy, to a greater or lesser degree (only with the distinction that the more deep-going political economists such as Ricardo,

Smith, etc., directly reduce profit to surplus value, i.e. want to display the abstract laws of surplus value directly through empirical profit, because otherwise any attempt to gain knowledge of the laws [of political economy] would have to be abandoned—whereas the economic *plebs* do the opposite, and directly set up and proclaim as laws of surplus value the phenomena of empirical profit; in reality proclaiming the semblance of lawlessness to be the law itself) [...] ^a

The competition of capitals is nothing more than the realisation of the immanent laws of capital, i.e. of capitalist production, in that each capital confronts the other as the executor of these laws, the individual capitals bringing their inner nature to bear by the external compulsion which they exert on each other, according to their inner nature. But in competition the immanent laws of capital, of capitalist production, appear as the result of the mechanical impact of the capitals on each other; hence inverted and upside down. What is effect appears as cause, the converted form appears as the original one, etc. Vulgar political economy therefore explains everything it does not understand from competition, i.e. to state the phenomenon in its most superficial form counts for it as knowing the laws of the phenomenon. ⁸³

If a capital which turns over 6 times in a year only takes a profit *2 times smaller* than a capital which turns over 3 times, one which employs much labour does not take any more profit than one which employs much fixed capital, one which suffers long interruptions in the production process itself no less than one which proceeds without interruption, etc., this means nothing but that the capitalists calculate the profit they make on the capital's size, not on its direct causal connection with the process.

If each capitalist adds 10% to his production costs, this means nothing but that one capitalist adds a given amount more, the other adds a given amount less, than he really produces over and above those production costs.

It is in one respect the same as when the individual capitalists sell their commodities above or below their value because they are cheating or being cheated. The one realises more surplus value than he produced, the other less. But the two divide among themselves, even if for accidental motives, and unequally, the total surplus value their two capitals have produced. The same thing takes place with average profit or empirical profit, only following a general law which is entirely independent of the personal frauds

^a The sentence is unfinished in the manuscript.—*Ed.*

committed by capitalists against each other, but rather asserts itself against and through these activities.

Adam Smith's assertion that the capitalists would have no reason to employ a large instead of a small capital, unless profit bore some proportion to the magnitude of the capitals, is naive but incorrect.⁸⁴ Leaving aside its shallowness—a larger capital with a smaller profit may after all—within [XVI-999]⁸⁵ certain limits—realise a greater amount of profit than a smaller capital with a greater rate of profit. The motive for the employment of larger capitals would therefore remain. What is alone important in Smith's case is that he feels the difficulty of explaining this at all, whereas with the *oeconomista vulgaris* it is self-evident, just as everything is self-evident with that fellow.

The situation arises simply from this, that with the conversion of surplus value into profit the value of the capital advanced is converted into the production costs of the individual capitalists, the magnitude of these production costs is therefore converted into the magnitude of the capital advanced, which means that they calculate the same magnitude of the product—the actual product of capital is profit—in proportion to these production costs, so that the division of the total surplus value as it is present in empirical profit can take place. The relation of supply in particular branches of production gives rise of itself to this levelling and this average calculation.

The last point which has still to be considered under this heading is the entirely fossilised form capital has taken on these days, and the completion of the mystification peculiar to the capitalist mode of production.

We must return to this point.

Hence the phrase (of Torrens) that with the advance of civilisation it is not labour but capital that determines the value of commodities. Similarly, that capital is productive, irrespective of the labour employed by it. (Ramsay, Malthus, Torrens, etc.)⁸⁶

h) In relation to the *costs of production* there is a further phenomenon to be discussed: why with the development of capitalist production, and therefore of the volume and measure of development of fixed capital, the mania to prolong the normal working day sets in to such a degree that the intervention of governments becomes necessary everywhere precisely at that point. But this can come later.

7) [GENERAL LAW OF THE FALL IN THE RATE OF PROFIT
WITH THE PROGRESS OF CAPITALIST PRODUCTION]

We have seen (6 g))^a that real profit—i.e. the current average profit and its rate—is different for the individual capital from profit, and therefore from the rate of profit, in so far as the latter consists of the surplus value really produced by the individual capital and the rate of profit therefore=the ratio of the surplus value to the total amount of the capital advanced. But it was also shown that considering the sum total of the capitals which are employed in the various particular spheres of production, the total amount of the social capital, or, and this is the same thing, the *total capital of the capitalist class*, the average rate of profit is nothing other than the total surplus value related to and calculated on this total capital; that it is related to the total capital exactly in the way in which profit—and therefore the rate of profit—is related to the individual capital, in so far as profit is considered only as surplus value which has been converted formally. Here, therefore, we once again stand on firm ground, where, without entering into the competition of the many capitals, we can derive the general law directly from the general nature of capital as so far developed. This law, and it is the most important law of political economy, is that the *rate of profit has a tendency to fall with the progress of capitalist production.*

[XVI-1000] Since the general rate of profit is nothing but the ratio of the total amount of surplus value to the total amount of capital employed by the capitalist class, we are not concerned here with the different branches into which surplus value is divided, such as industrial profit, interest, rent. Since all these different forms of surplus value are only components of the total surplus value, one part may increase because the other declines. We are concerned here, however, with a fall in the rate of the total surplus value. Even the rent of land—as Adam Smith has already correctly noted—falls with the development of capitalist production, instead of rising, not in proportion to the particular area of land of which it *appears* to be the product, but in proportion to the *capital* invested in agriculture, therefore precisely in the form in which it steps forth directly as a component of surplus value.⁸⁷ This law is confirmed by the whole of modern agronomy. (See Dombasle,⁸⁸ Jones,⁸⁹ etc.)

So where does this tendency for the general rate of profit to fall come from? Before this question is answered, one may point out

^a See this volume, p. 91.—*Ed.*

that it has caused a great deal of anxiety to bourgeois political economy. The whole of the Ricardian and Malthusian school is a cry of woe over the day of judgement this process would inevitably bring about, since capitalist production is the production of profit, hence loses its stimulus, the soul which animates it, with the fall in this profit. Other economists have brought forward grounds of consolation, which are not less characteristic. But apart from theory there is also the practice, the crises from *superabundance of capital or, what comes to the same, the mad adventures capital enters upon in consequence of the lowering of [the] rate of profit. Hence crises—see Fullarton⁹⁰—acknowledged as a necessary violent means for the cure of the plethora of capital, and the restoration of a sound rate of profit.*

// Fluctuations in the rate of profit, independent of organic CHANGES in the components of capital, or of the absolute magnitude of capital, are possible if the *value* of the capital advanced, whether it is engaged in the form of fixed capital, or exists as raw material, finished commodities, etc., rises or falls in consequence of an increase or reduction, independent of the already existing capital, in the labour time needed for its *reproduction*, since the value of every commodity—hence also of the commodities of which the capital consists—is conditioned not only by the necessary labour time contained in it itself, but by the necessary—socially necessary—labour time which is required for its *reproduction*, and this reproduction may occur under circumstances which hinder or facilitate it, and are different from the conditions of the original production. If under the changed circumstances twice as much labour time, or, inversely, half as much, is generally required to reproduce the same capital, as was needed to produce it, that capital, presupposing that the value of money remains permanently unchanged, would now be worth 200 thalers, if it was previously worth 100, or, if it was previously worth 100, it might now only be worth 50. If this increase or decline in value were to affect uniformly all sections of capital, profit too, like the capital, would now be expressed in twice as many or in half as many thalers. The rate would remain unchanged. 5 is related to 50 as 10 to 100 or 20:200. Let us assume however that the nominal value of fixed capital and raw material alone rises, and that they form $\frac{4}{5}$ of 100, hence 80, the variable capital forming $\frac{1}{5}$, hence 20. In this case the surplus value, hence the profit, would continue to be expressed in [XVI-1001] the same sum of money. Thus the rate of profit would have risen or fallen. In the first case surplus value=10 thalers, which makes 10% on 100. But the 80 are now

worth 160, hence the total capital=180. 10 on 180= $\frac{1}{18}=\frac{100}{18}=100:18=5=5\frac{5}{9}\%$, instead of the previous 10%. In the second case 40 instead of 80, the total capital=60, on which 10= $\frac{1}{6}=\frac{100}{6}$. 100:6=16= $16\frac{2}{3}\%$. But these fluctuations can never be general, unless they affect the commodities which enter into the worker's consumption, hence unless they affect variable capital, hence the whole of capital. In this case, however, the rate of profit remains unchanged, even though the amount of profit has changed nominally.//

The general rate of profit can never rise or fall through a rise or fall in the total value of the capital advanced. If the value of the capital advanced, expressed in money, rises, the nominal monetary expression of the surplus value rises too. The rate remains unchanged. Ditto in the case of a fall.

The general rate of profit can only fall:

1) if the absolute magnitude of surplus value falls. The latter has, inversely, a tendency to rise in the course of capitalist production, for its growth is identical with the development of the productive power of labour, which is developed by capitalist production;

2) because the ratio of variable capital to constant capital falls. As we have seen, the rate of profit is always smaller than the rate of surplus value which is expressed in it.^a But the larger the ratio of constant to variable capital, the smaller it is. Or, the same rate of surplus value is expressed in a rate of profit which is the smaller, the larger the ratio of the total amount of capital advanced to the variable part of the latter, or the greater a part the constant capital forms of the total capital. Surplus value

expressed as profit is $\frac{S}{C+v}$, and the larger C is, the smaller this magnitude, and the more it diverges from $\frac{S}{v}$, the rate of surplus value. For $\frac{S}{C+v}$ would reach its maximum when $C=0$, hence $\frac{S}{C+v}=\frac{S}{v}$.

But the law of development of capitalist production (see Cherbuliez,^b etc.) consists precisely in the continuous decline of variable capital, i.e. the part of capital laid out in wages, in return for living labour—the variable component of capital—in relation to the constant component of capital, i.e. to the part of capital

^a See this volume, pp. 69-77.—Ed.

^b Ibid., pp. 304-20.—Ed.

which consists in fixed capital and in the CIRCULATING CAPITAL laid out for raw material and *matières instrumentales*.^a The whole development of relative surplus value, i.e. of the productive power of labour, i.e. of capital, consists, as we have seen,⁹¹ in the curtailment of necessary labour time, hence also the reduction of the total amount of the capital exchanged for labour, through the increase in the production of surplus labour by means of division of labour, machinery, etc., cooperation, and the expansion in the amount of value and the mass of constant capital expended which this involves, accompanied by a reduction in the capital expended for labour.

So when the ratio of variable capital to the total amount of capital alters, the rate of profit falls, i.e. the ratio of surplus value to the variable part of capital^b is the smaller, [XVI-1002] the smaller the ratio of variable capital to constant capital.

If, for example, in the production of India the ratio of the capital laid out as wages to the constant capital=5:1, and in England it is 1:5, it is clear that the rate of profit in India must appear much larger, even if the surplus value actually realised is much smaller. Let us take 500. If the variable capital= $500/5=100$, the surplus value 40, the rate of surplus value will be 40%, the rate of profit only 10%. In contrast, if the variable part is 400 and the rate of surplus value is only 20%, this would make 80 on 400, and on 500 a rate of profit of 80:500, of 8:50. 8:50=16:100. Therefore 16%. (100:16=500:80 or 50:8=250:40 or 25:4=125:20. 25×20=500. 4×125=500.) So although labour would be twice as strongly exploited in Europe as in India, the rate of profit in India would be related to the rate of profit in Europe as 16:10, as 8:5,= $1\frac{5}{8}$. Hence as 1:0,625. And indeed this is because $\frac{4}{5}$ of the total capital is exchanged for living labour in India, and only $\frac{1}{5}$ in Europe. If real wealth appears slight in those countries where the rate of profit is high, it is because the productive power of labour is slight, a fact which is expressed precisely in the high rate of profit. 20% is $\frac{1}{5}$ on labour time, hence India could only feed $\frac{1}{5}$ of the population not directly involved in the product; whereas 40% is $\frac{2}{5}$, hence in England twice the proportion of the population could live without working.⁹²

The tendency towards a fall in the general rate of profit therefore=the development of the productive power of capital, i.e.

^a Instrumental materials.—*Ed.*

^b Thus in the manuscript. The passage should read: "... i.e. the ratio of surplus value to the total capital".—*Ed.*

the rise in the ratio in which objectified labour is exchanged for living labour.⁹³

The development of productive power has a double manifestation: [Firstly,] in the magnitude of the productive forces already produced, in the amount of value and the physical extent of the conditions of production under which new production takes place, i.e. the absolute magnitude of the productive capital already accumulated. Secondly, in the relative smallness of the capital laid out for wages, in comparison with the total capital, i.e. the relatively small amount of living labour which is required for the reproduction and exploitation of a large capital—for mass production.

This implies, at the same time, the concentration of capital in large amounts at a small number of places. The same capital is large if it employs 1,000 workers united into a single labour force, small if it is divided into 500 businesses employing two workers apiece.

If the ratio of the variable part of capital to the constant part, or to the total capital, is large, as in the above example, this shows that all the means towards the development of the productivity of labour have not been employed, that, in a word, the *social forces* of labour have not been developed, that therefore with a large quantity of labour little is produced, [XVI-1003] whereas in the opposite case a (relatively) large amount is produced with a small amount of labour.

The development of fixed capital (which produces of itself a development of the circulating capital laid out in raw material and *matières instrumentales* (see Sismondi⁹⁴) is a particular symptom of the development of capitalist production.⁹⁵ It implies a direct reduction, relatively speaking, of the variable part of capital, i.e. a lessening in the quantity of living labour. The two are identical. This is most striking in agriculture, where the reduction is not only relative but absolute.

// Adam Smith's idea that the general rate of profit is forced down by competition⁹⁶—on the presupposition that capitalists and workers alone confront each other—or that the division of surplus value among different classes is not further considered—comes down to saying that profit does not fall because wages rise; but wages do indeed rise because profit falls, hence it is—from the point of view of the result, an increase in wages corresponding to the fall of profit—the same mode of explanation as Ricardo's completely opposite one, in which profit falls because wages become more expensive, etc.,⁹⁷ or as Carey's, because there is an

increase not only in costs of production (exchange value) but in the use value of the wage.⁹⁸ That profit TEMPORARILY falls as a result of competition between capitals—i.e. their competition in the demand for labour—is admitted by all political economists (see *Ricardo*⁹⁹). Adam Smith's explanation, *if he did not speak of industrial profits only, would raise this to a general law very contradictory to the laws of wage[s] developed by himself.*//

The development of productive power has a double manifestation: in the increase of surplus labour, i.e. the curtailment of the necessary labour time; and in the reduction of the component of capital which is exchanged with living labour, relatively to the total amount of capital, i.e. the total value of the capital which enters into production. (See *Surplus Value, Capital*, etc.¹⁰⁰) Or, expressed differently: It is manifested in the greater exploitation of the living labour employed (this follows from the greater quantity of use values which it produces in a given time, *hinc*^a the curtailment of the time required for the reproduction of the wage, *hinc* the prolongation of the labour time appropriated by the capitalist without equivalent) and in the reduction in the relative amount of living labour time which is employed in general—i.e. in its amount relatively to the capital that sets it in motion. Both movements not only go [hand in hand] but condition each other. They are only different forms and phenomena in which the same law is expressed. But they work in opposite directions, in so far as the rate of profit comes into consideration. Profit is surplus value related to the total capital, and the rate of profit is the ratio of this surplus value, calculated according to a particular measure of the capital, e.g. as a percentage. However, surplus value—as an overall quantity—is determined firstly by its rate, but secondly by the amount of labour employed simultaneously at this rate, or, and this is the same thing, the magnitude of the variable part of the capital. On the one hand there is a rise in the rate of surplus value, on the other hand there is a (relative) fall in the numerical factor by which this RATE is multiplied. In so far as the development of productive power lessens the necessary (paid) part of the labour employed, it raises the surplus value, because it raises its rate, or it raises it when expressed as a percentage. However, in so far as it lessens the total amount of labour employed by a given capital, it reduces the numerical factor by which the rate of surplus value is multiplied, hence it reduces its amount.

^a Hence.—Ed.

Surplus value is determined both by the rate, which expresses the ratio of surplus labour to necessary labour, and by the amount^a of working days employed. However, with the development of the productive forces, the latter—or the variable part of the capital—is reduced in relation to the capital laid out.

If $C=500$, $c=100$, $v=400$, and $S=60$, $\frac{S}{v}=\frac{60}{400}=15\%$, so that the rate of profit= $\frac{60}{500}=12\%$. [XVI-1004] Furthermore, if $C=500$, $c=400$, $v=100$, and $S=30$, $\frac{S}{v}=\frac{30}{100}=30\%$, so that the rate of profit= $\frac{30}{500}=6\%$. The rate of surplus value is doubled, the rate of profit is halved. The rate of surplus value exactly expresses the rate at which labour is exploited, while the rate of profit expresses the relative amount of living labour employed by capital at a given rate of exploitation, or the proportion of the capital laid out in wages, the variable capital, to the total amount of capital advanced.

If $C=500$, $c=400$, and $v=100$, for the rate of profit to be 12% or profit to be 60, surplus value would have to be 60, $\frac{S}{v}=\frac{60}{100}=60\%$.

For the rate of profit to remain the same, the rate of surplus value (or the rate of exploitation of labour) would have to grow in the same ratio as the magnitude of the capital laid out in labour grows, in the same way as the magnitude of the variable capital falls relatively, or the magnitude of the constant capital grows relatively. It is already strikingly apparent from one single circumstance that this is only possible within certain limits, and that it is rather the reverse, the tendency towards a fall in profit—or a *relative* decline in the amount of surplus value hand in hand with the growth in the rate of surplus value—which must predominate, as is also confirmed by experience. The part of the value which capital newly reproduces and produces is—to the living labour time directly absorbed by it in its product. One part of this labour time replaces the labour time objectified in wages, the other part is the unpaid excess amount, surplus labour time. But both of them together form the whole amount of the value produced, and only a part of the labour employed forms the surplus value. If the normal day=12 hours, 2 workers who perform simple labour can never add more than 24 hours (and workers who perform higher labour can never add more than 24 hours×the factor which expresses the ratio of their working day to the simple working day), of which a definite part replaces

^a In the manuscript the word “number” is written over the word “amount”.—*Ed.*

their wages. The surplus value they produce cannot, whatever the circumstances, be more than an aliquot part of 24 hours. If, instead of 24 workers, only 2 are employed to a given quantity of capital (in proportion to a given measure of capital), or 2 workers are necessary in the new mode of production where 24 were necessary in the old one, in proportion to a given amount of capital, then if the surplus labour in the old mode of production = $\frac{1}{12}$ of the total working day, or = 1 hour, no increase in productive power—however much it raised the rate of surplus labour time—could have the effect that the 2 workers provided the same amount of surplus value as the 24 in the old mode of production. If one considers the development of productive power and the relatively not so pronounced fall in the rate of profit, the exploitation of labour must have increased very much, and what is remarkable is not the fall in the rate of profit but that it has not fallen to a greater degree. This can be explained partly by circumstances to be considered in dealing with competition between capitals,⁶⁷ partly by the general circumstance that so far the immense increase of productive power in some branches has been paralysed or restricted by its much slower development in other branches, with the result that the general ratio of variable to constant capital—considered from the point of view of the total capital of society—has not fallen in the proportion which strikes us so forcibly in certain outstanding spheres of production.

In general, therefore: The decline in the average rate of profit expresses an increase in the productive power of labour or of capital, and, following from that, on the one hand a heightened exploitation of the living labour employed, and [on the other hand] a *relatively reduced amount of living labour* employed at the heightened rate of exploitation, calculated on a particular amount of capital.

It does not now follow automatically from this law that the *accumulation* of capital declines or that the absolute *amount* of *profit* falls (hence also the *absolute*, not *relative*, *amount* of surplus value, which is expressed in the profit).

[XVI-1005] Let us stay with the above example.^a If the constant capital is only $\frac{1}{5}$ of the total capital advanced, this expressed a low level of development of productive power, a limited scale of production, small, fragmented capitals. A capital of 500 of this kind, with surplus value at 15% (the variable capital at 400) gives a *total amount* of profit of 60. If we reverse the ratio, this expresses

^a See this volume, p. 110.—Ed.

a large scale, the development of productive power, cooperation, division of labour, and large-scale employment of fixed capital. Let us therefore assume that a capital of this kind is of 20 times greater extent; $500 \times 20 = 10,000$, thus 6% profit on 10,000 (or surplus value of 30%, if the variable capital = 2,000) 600. A capital of 10,000 therefore accumulates more quickly with 6% than a capital of 500 with 12%. The one realises a labour time of 400, the other one of 2,000, hence an absolute amount of labour time 5 times greater, although relatively to its magnitude, or to a given amount of capital, e.g. 100, it employs four times less [labour time]. (See Ricardo's example.^{a 101})

Here, as in the whole of our analysis, we entirely disregard use value. With the greater productivity of capital it goes without saying that the same value employed at the more productive scale represents a much greater amount of use value than it does at the less productive scale, and therefore also provides the material for a much more rapid rate of growth of the population and consequently of labour powers. (See Jones.^b)

This fall in the rate of profit leads to an increase in the *minimum amount of capital*—or a rise in the level of concentration of the means of production in the hands of the capitalists—required in general to employ labour productively, both to exploit it, and to employ no more than the *labour time socially* required for the manufacture of a product. And there is a simultaneous growth in accumulation, i.e. concentration, since large capital accumulates more rapidly at a small rate of profit than does small capital at a large rate of profit. Once it has reached a certain level, this rising concentration in turn brings about a new fall in the rate of profit. The mass of the lesser, fragmented capitals are therefore ready to take risks. *Hinc* crisis. The so-called plethora of capital refers only to the plethora of capital for which the fall in the rate of profit is not counterbalanced by its size. (See Fullarton.⁹⁰)

Profit, however, is the driving AGENCY in capitalist production, and only those things are produced which can be produced at a profit, and they are produced to the extent to which they can be produced at a profit. Hence the anxiety of the English political economists about the reduction in the rate of profit.

Ricardo already noted that the increase in the amount of profit accompanying a decline in the rate of profit is not absolute, but

^a D. Ricardo, *On the Principles of Political Economy, and Taxation*, 3rd ed., London, 1821, pp. 124-26.—Ed.

^b See this volume, pp. 335-37, 371.—Ed.

that there may be a decline in the amount of profit itself, despite the growth of capital. Strangely enough, he *did not grasp this in general*, but merely gave an example.¹⁰¹ Nevertheless, the matter is very simple.

500 at 20% gives 100 profit.

50,000 at 10% gives 5,000 profit; but 5,000 at 2% would only give 100 profit, no more than 500 gives at 20%, and at 1% it would only give 50 profit, hence only half as much as 500 at 20%.

In general: As long as the rate of profit falls more slowly than capital grows, there is a rise in the amount of profit and therefore the rate of accumulation, although relative profit declines. If the profit were to fall to the same degree as the capital grew, the amount of profit would, despite the growth in capital, remain the same as it was with a higher rate of profit on a smaller capital. This would therefore also be true of the rate of accumulation. Finally, if the rate of profit fell in a greater proportion than the growth in capital, the amount of profit and therewith the rate of accumulation would fall along with the rate of profit, and it would stand lower than in the case of a smaller capital with a higher rate of profit at a correspondingly less developed stage of production.

[XVI-1006] // We do not consider use value at all, except in so far as it determines the production costs of labour capacity or the nature of capital, as with fixed capital, because we are considering capital in general, not the real movement of capitals or competition.⁶⁷ But it may be remarked here in passing that this production on a large scale, with a higher rate of surplus value and a reduced rate of profit, presupposes an immense production, and therefore consumption, of use values, hence always leads to periodic overproduction, which is periodically solved by expanded markets. Not because of a lack of demand, but a lack of paying demand. For the same process presupposes a proletariat on an ever-increasing scale, therefore significantly and progressively restricts any demand which goes beyond the necessary means of subsistence, while it at the same time requires a constant extension of the sphere of demand. Malthus was correct to say that the *demand of the worker can never suffice for the capitalist*.^{a 102} His profit consists precisely in the excess of the worker's supply over his demand. Every capitalist grasps this as far as his own workers are concerned, only not for the other workers, who buy his commodities. Foreign trade, luxury production, the state's extravagance (the growth of state expenditure, etc.)—the massive

^a Th. R. Malthus, *Principles of Political Economy...*, pp. 315, 405.—Ed.

expenditure on fixed capital, etc.—hinder this process. (Hence sinecures, extravagance on the part of the state and the unproductive classes, are recommended by Malthus, Chalmers, etc., as a nostrum.^a) It remains curious that the same political economists who admit the periodic overproduction of capital (a periodic plethora of capital is admitted by all modern political economists) deny the periodic overproduction of commodities. As if the simplest analysis did not demonstrate that both phenomena express *the same antinomy*, only in a different form.//

That this mere possibility disturbs Ricardo (Malthus and the RICARDIANS similarly) shows his deep understanding of the conditions of capitalist production.¹⁰⁴ The reproach that is made against him, that in examining capitalist production he is unconcerned with “human beings”, keeping in view the development of the productive forces alone—bought at the cost of whatever sacrifices—without concerning himself with distribution and therefore consumption, is precisely what is great about him. *The development of the productive forces of social labour is the historic task and justification of capital.* It is exactly by doing this that it unconsciously creates the material conditions for a higher mode of production. What makes Ricardo uneasy here is that profit—the stimulus of capitalist production and the condition of accumulation, as also the driving force for accumulation—is endangered by the law of development of production itself. And the quantitative relation is everything here.

There is in reality a deeper basis for this, which Ricardo only suspects. What is demonstrated here, in a *purely economic* manner, from the standpoint of capitalist production itself, is its barrier—its *relativity*, the fact that it is not an *absolute*, but only an historical *mode of production*, corresponding to the material conditions of production of a certain restricted development period.

To bring this important question to a decisive conclusion, the following must first be investigated:

1) Why does it happen that with the development of fixed capital, machinery, etc., the passion for overwork, prolongation of the normal working day, in short the mania for *absolute surplus labour* grows, along with precisely the mode of production in which *relative surplus labour* is created?

2) How is it that in capitalist production *profit* appears—from the point of view of the individual capital, etc.—as a *necessary*

^a See Th. R. Malthus, *Principles of Political Economy...*, pp. 326, 361, 408 et al.; Th. Chalmers, *On Political Economy...*, 2nd ed., Glasgow, 1832, pp. 344-46.¹⁰³—Ed.

condition of production, hence as forming part of the absolute production costs of capitalist production?

If we take surplus value, its rate is greater, the smaller the variable capital in proportion to it, and less, the larger the variable capital. $\frac{s}{v}$ rises or falls inversely as v rises or falls. If $v=0$, this $[\frac{s}{v}]$ would be at its maximum, for no outlay of capital for wages would be necessary, no labour would have to be paid in order to

appropriate unpaid labour. Inversely: the expression $\frac{s}{c+v}$, or the rate of profit, would be at its maximum if $c=0$, that is, if the rate of profit=the rate of [XVI-1007] surplus value, i.e. if no constant capital c at all had to be laid out in order to lay out capital v in wages and thus realise it in surplus labour. The expression $\frac{s}{c+v}$ therefore rises and falls inversely as c rises or falls, hence it also rises or falls against v .

The rate of surplus value is greater, the smaller the variable capital in proportion to the surplus value. The rate of profit is greater, the greater the variable capital in proportion to the total capital, and this proportion is greater the smaller the constant capital in proportion to the total capital, hence also in the proportion to which it forms a smaller part of the total capital than the variable capital. But the variable capital for its part is smaller in proportion to the total capital, the greater the proportion of the total capital and therefore of the constant capital to the variable capital.

Assume $s=50$, $v=500$, $c=100$. Then $s'=\frac{50}{500}=\frac{5}{50}=\frac{1}{10}=10\%$. And Pp. (rate of profit) $=\frac{50}{600}=\frac{5}{60}=\frac{1}{12}=8\frac{1}{3}\%$. Hence $\frac{s}{v}$ is greater, the smaller v is, $\frac{s}{c+v}$ is greater, if s is given, the greater v is and the smaller c is, but $\frac{s}{v}$ increases when c increases. If now $\frac{s}{v}$ becomes $3\frac{s}{v}$, and c grow 3 times, so that $\frac{3s}{3c+v}$, v which was originally related

$$\begin{array}{l} \text{to } c \text{ as} \\ \text{is now related as} \end{array} \quad \begin{array}{l} v:(v+c) \\ v:(v+3c) \end{array}$$

$$v = \frac{c-v}{v+c} \quad \text{and} \quad v = \frac{c-v}{v+3c}$$

$$v = \frac{c}{1+c/v} \quad v = \frac{c}{1+3c/v}$$

If s became greater than v in the measure to which c grew or v becomes greater than $c+v$, hence if the rate of surplus value grew through greater employment of constant capital in the same measure as the proportion of variable capital to total capital declines, the rate of profit would remain unchanged.

Originally we had $\frac{s}{c+v} = p'$. Now we have $\frac{3s}{3s+v} = p'$.

The first question is by how much $\frac{s}{3c+v}$ [is less than] $\frac{s}{c+v}$.

$$\begin{aligned} \frac{s}{c+v} - \frac{s}{3c+v} &= \frac{s(3c+v) - s(c+v)}{(c+v)(3c+v)} \\ &= \frac{s(3c+v-c-v)}{(c+v)(3c+v)} = \frac{s(2c)}{(c+v)(3c+v)} \end{aligned}$$

[XVI-1008] Let surplus value=120. Variable capital=600. In this case s' , or rate of surplus value, = $\frac{120}{600} = 20\%$. If the constant capital=200, then $p' = \frac{120}{800} = \frac{12}{80} = \frac{3}{20} = 15\%$. If now the constant capital is increased threefold, from 200 to 600, and everything else remains unchanged, then $s' = 20\%$ as before, but p' now = $\frac{120}{1,200} = \frac{12}{120} = \frac{6}{60} = \frac{3}{30} = \frac{1}{10} = 10\%$. The rate of profit would have fallen from 15 to 10 [per cent], by $\frac{1}{3}$; the constant capital would have tripled. The variable capital was previously $\frac{600}{800} = \frac{6}{8} = \frac{3}{4}$ of the total capital, it is now $\frac{600}{1,200}$, only $\frac{1}{2}$ or $\frac{2}{4}$, it has therefore become smaller by $\frac{2}{3}$.

But if the surplus value increased threefold through the tripling of the constant capital, i.e. if it grew from 120 to $120 \times 3 = 360$, then s' would now = $\frac{360}{600} = \frac{36}{60} = \frac{6}{10} = \frac{3}{5} = 60\%$, and p' would = $\frac{360}{1,200} = \frac{36}{120} = \frac{6}{20} = \frac{3}{10} = 30\%$.

But since the variable capital is now related to the total capital as 600:1,200, whereas previously it was as 600:800, it is now $\frac{1}{2}$ of the total capital, and was previously $\frac{6}{8}$ or $\frac{3}{4}$, so it has fallen.^{a 105}

[XVI-1009] $s = 120$, $v = 600$, $c = 200$. $s' = \frac{120}{600} = 20\%$, $p' = \frac{120}{800} = 15\%$.

$s = 120$. $v = 600$. $c = 600$. $s' = \frac{120}{600} = 20\%$. $p' = \frac{120}{1,200} = 10\%$. $15:10 = 3:2 = 1:\frac{2}{3}$. Hence p' has fallen by $\frac{1}{3}$, c has risen 3 times, total capital has grown from 800 to 1,200, by $\frac{1}{2}$; finally v was originally related to c as $600:200 = 3 \times 200 = 3c$, but now = v . Hence v has fallen 3fold against c . Finally v was previously related to c as $600:800 = 6:8 = 3:4 = \frac{3}{4}c$. Now it is related as

^a The lower half of page 1008 is filled with calculations relating to the ratios given above.—Ed.

600:1,200=6:12=2:4; = $\frac{1}{2}$ or $\frac{2}{4}c$. Hence it has fallen against c by $\frac{1}{4}$.

For the rate of profit to remain the same at 15%, the surplus value would have to rise from 120 to 180, hence by 60 (but 60:120=1:2), hence by a half. Furthermore, [a rise in] s' from $\frac{120}{600}$ or 20% to $\frac{180}{600}$ or 30%, from 20 to 30, is again [a rise] by 50%.

The surplus value had to increase in the same proportion as the total capital grew from 800 to 1,200, i.e. by 50%, that is it had to increase from 20 to 30%. Originally v was $\frac{3}{4}$ of the total capital, now it is $\frac{2}{4}$. But $\frac{3}{4} C \times 20$ is as much as $\frac{2}{4} C \times 30$, namely $\frac{60C}{4}$ (=15%).

// It is self-evident that the variable capital may constantly grow in the absolute sense, i.e. the absolute number of workers may grow, although it is constantly falling in proportion to total capital and fixed capital. Hence the inane dispute over whether machinery reduces the number of workers. It almost always reduces the number when introduced, not in the sphere in which it has itself been introduced, but through the suppression of workers who carry on the same industry at the previous stage of production. For example the machine spinners drive out the hand spinners, the machine weavers the hand weavers, etc. But in the branch of industry which employs the machinery the number of workers may grow constantly in the absolute sense // although here men are often driven out by WOMEN and YOUNG PERSONS // although it declines relatively. //

[XVI-995] Let us first assemble the facts.

$C = v + c$. s = surplus value. s' = rate of surplus value. p' = rate of profit. $s' = s/v$, $p' = s/c$ or $\frac{s}{v+c}$.

[...] ^a

$C = 800$. $c = 200$. $v = 600$. $s = 120$. In this case, $c = \frac{1}{4}C$ ($\frac{800}{4} = 200$)

and $v = \frac{3}{4}C$ ($= \frac{3 \times x}{4} = xx$); $s' = \frac{120}{600} = 20\%$. If c increases from 200 to 600, by a factor of three, C will rise from 800 to 1,200, i.e. by 50%.

Since $c = \frac{1}{4}C$, its threefold increase causes it to grow from $\frac{1}{4}$ to $\frac{3}{4}$ (by $\frac{2}{4}$). The total capital is now $\frac{3}{4}C + \frac{3}{4}C = 1\frac{1}{2}C$. It has

^a Here and below, the dots in square brackets designate the damaged places in the manuscript. The sign x in the next few paragraphs stands for illegible symbols in the manuscript.—Ed.

therefore risen by [...]. It was originally $=\frac{3}{4}C$ ($=600$), so if it is tripled this brings it from $\frac{3}{4}$ to $\frac{9}{4}$, from 600 to 1,800, and it brings the total capital to 2,000 ([...] $C \frac{x}{4} \times \dots \times C$ [...]) over and above the original capital $\frac{6}{4}C=1,200$ ($1,200+800=2,000$). How far therefore the total capital [...] becomes $\times \dots \times$ growth in c , depends on the original proportion of c to C , which presents itself entirely as a particular proportion between c and v [...] of C . So the greater the proportion of $c:v$ or of $c:C$ ($c+v$), the more does the total amount C grow through [...] the more does the rate of profit fall and the greater is the growth in the rate of surplus value required for the rate of profit to remain the same. [...] the growth of the total capital if the rate of surplus value is given.

In the case of an increase of C from 800 to 1,200, of c from 200 to 600, the constant capital is tripled and the total capital grows by [...] by 50%. In this case the rate of surplus value or s' continues to be 20% and $s=120$. But $p'=\frac{120}{1,200}=10\%$. Surplus value and rate of surplus value [...] have fallen from 15 to 10, i.e. by $\frac{1}{3}$ or $33\frac{1}{3}\%$. Why is there this difference, that the rate of profit falls by $33\frac{1}{3}\%$ [...] grows by 50%? Because the relation of the rate of profit expresses itself as the inverse of the relation of the two capitals we have compared. [...] or 1,200. This growth is from $800:1,200=2:3$, hence from $2:(2+1)$ or by 50%. The fall in the rate of profit expresses itself inversely, as fall of [...] from $\frac{120}{800}$ to $\frac{120}{1,200}$ or $\frac{120}{800}:\frac{120}{1,200}=3:2$; hence as a fall of $\frac{1}{3}$ or $33\frac{1}{3}\%$.

The fall in the rate of profit therefore depends directly on the growth in the total capital, if the variable capital remains the same; its fall expresses itself in inverse proportion to the growth of the capital. *If this grows from 2:3, the rate of profit falls from 3:2.* Furthermore, if the variable capital remains the same, the growth of the total capital can only derive from the growth of the constant capital. However, the proportion in which a particular increase in constant capital causes the total capital to increase depends on the original ratio between c and C . This *inverse relation* explains in part why the rate of profit does not fall in the same proportion as the capital increases, even if the rate of surplus [value] remains the same. If 2 increases to 4, that is a growth of 100%. If 4 falls to 2, that is a fall of 50%.

b) If in the second case indicated above the rate of profit is to remain the same, the profit, hence the surplus value, will have to rise from 120 to 180, i.e. by 60 or $\frac{1}{2}$ of 120, rise by half its original magnitude. The surplus value would therefore have

directly to *grow in the same proportion* as the total capital, by 50%, therefore rising in a greater proportion than the fall in the rate of profit, surplus value remaining the same.

If c had risen to 1,200 instead of 600, the total capital would have risen to 1,800, for C would have risen by 1,000, hence by 125%. [...] remain the same, the total amount of surplus value=the total profit, would have had to rise to 270. But 270:120 must [imply] a growth of 150 [...] or 125% on top of 120. 120 on 120 is 100%, and 30 on 120 is $\frac{1}{4}$ or 25% ($4 \times 30 = 120$) [...]%)

c) How in this case (b) would s' or surplus value have risen?

It was originally $\frac{120}{600} = 20\%$ or $\frac{1}{5}$ of the variable capital. If the capital grows to 1,200 or c is tripled, $\frac{180}{600}$ or 30% or [...]. In the third case, if the capital grows to 1,800, [surplus value is] $\frac{270}{600} = \frac{9}{20}$ of the variable capital, =45%. In [this case the rate of] surplus value has risen from 20 to 30%, i.e. by 50%, to the same degree as the total capital has grown in this case and the absolute surplus value or [...] has risen in this] case from 20 to 45; i.e. by 25; but $25:20 = 1\frac{1}{4}$ ($20 + \frac{1}{4} \cdot 20$ or 5) hence 125%. (This [...] only on the growth of the increment, not the relation of the numbers to each other as such.) The rate of surplus value would therefore have to [grow] directly [as the] total capital grew or in the same proportion as the absolute surplus value would have to grow for the rate of profit to remain unaltered with a growing [...].

Variable capital amounted to

Case I:	600	out of total	constant	
		capital	capital	
			$800 = \frac{3}{4} C$;	$200 = \frac{1}{4} C$
Case II:	600	"	$1,200 = \frac{2}{4} C$;	" $600 = \frac{2}{4} C$
Case III:	600	"	$1,800 = \frac{1}{3} [C]$;	" $1,200 = \frac{2}{3} C$
xxxxxx:	600	"	$3,600 = \frac{1}{6} [C]$;	" $3,000 = \frac{5}{6} C$.

Surplus value or profit had to increase to 540; the rate of surplus value = $\frac{540}{600}$, $\frac{9}{10}$ or 90%. 90% against 20 [...] of 70. But 70 to 20 would be 350%. The increase of capital would be $3,600 - 800 = 2,800$, similarly [350%]. In this case the rate of surplus labour = $\frac{9}{10}$ of the total working day, hence given 10 hours of labour 9 hours. [...] [XVI-996] [...], although entirely corresponding to the growth of the total capital with variable capital remaining the same, now express the rate of rise and fall inversely in the same value expression as the capital [...]. If the capital rises from 2 to 4, the rate of profit falls from 4 to 2. The other rises by 100%, [...]

[...] and the rate of surplus value, which is an identical relation if variable capital remains the same, does not grow as capital grows or variable capital [...] total capital. There is absolutely no rational reason why the rise of productive power should observe exactly the same numerical ratio. It [...] of relative surplus value grows and its growth is expressed in the ratio of the reduction in the variable capital [...], but not in the same ratio as this proportion declines. Productive power grows, hence surplus labour. Firstly, there lies here [...] the matter. One man may produce as much use value as 90. Never more than an average of 12 hours a day in value is [...], as this [...] surplus value never more than *12 hours - x*, where *x* expresses the labour time necessary for his own production. The surplus value, [...] *the labour time which he himself works, not by the working days he replaces*. If 90 men worked only $\frac{1}{2}$ an hour of surplus time a day, this would be [...] hours. If the one man needed only one hour of necessary labour time, he would never [produce] more than 11 hours of surplus value. [The pro]cess is double. It increases the surplus labour time of the working day, but it also reduces the numerical coefficients of those working days, [...] capital. Secondly: The development of productive power is not uniform; certain branches of industry may themselves be more unproductive [...] but this is determined by the general productivity of capital.

[...] firstly at a stage of production which remains the same, without great revolutions in productive power, in proportion to its already existing [...] only gives rise to a total capital of 2, whereas 1,000 at 10% gives 1,100. c. 1,100 prod[... Ex]ample of 800, $v=600$, $c=200$, and surplus value=160 or rate of profit equal to 20%, a capital of 100,000 would give [...] instead of $\frac{3}{4}$ only $\frac{1}{6}$ variable, ($\frac{3}{4}=\frac{18}{24}$, and $\frac{1}{6}=\frac{4}{24}$) hence employs $\frac{14}{24}$ or $\frac{7}{12}$ less variable capital relatively speaking, at [...] 50% it continues to be 5,000. His variable capital, and the living labour employed by it, would still be $16,666\frac{1}{6}$ in total amount, hence [...] it would still be nearly 28 times greater than the capital employed in the first case. But the rate of profit is determined, because the rate of surplus value is determined, by the ratio of the variable capital to the total capital. At simple interest £100,000 would grow into 200,000 in 20 years, whereas 800 at 20% would only produce an accumulation of 3,200 in 20 years (160×20). In the second 20 years 200,000 at 5% would grow to 400,000. The other capital at 20%, in contrast, would only grow to 12,800.

[Faded handwritten text, likely bleed-through from the reverse side of the page. The text is illegible due to fading and ink bleed-through.]

[α] As a rule //see under *surplus value*¹⁰⁶ for the exception: *intensification of labour* and therefore in fact *increase of labour* by machinery// machinery only creates *relative surplus value* through the curtailment of necessary labour time and therefore the prolongation of surplus labour time. This result is brought about by the cheapening of the commodities which enter directly or indirectly into the worker's consumption.

Surplus value is formed by two factors. Firstly the daily surplus labour of the individual worker. This determines the *rate of surplus value*, hence also the proportion in which variable capital is increased through the exchange with living labour. Secondly, the *number* of workers simultaneously exploited by capital or the number of simultaneous working days.

If the rate of surplus value is given, the magnitude of the surplus value—the surplus value itself as an independent magnitude—depends on the number of workers employed. If this [number and the number of simultaneous] working days is given, the magnitude of the surplus value depends on its rate.

[...] now evidently has a tendency to affect the two factors of surplus value in opposite directions. It increases the rate [...] reduces the number of workers // *relatively* anyway; with respect to a definite measure of capital, e.g. per cent//, whose labour [...] is exploited at an increased rate.

[...] each one provided 1 hour of surplus labour a day. By the employment of machinery 6 workers should each provide 2 hours of surplus labour a day [...] In this case 6 workers provide 12 hours of surplus labour, just as previously 12 did. The time during which the 12 workers [work] every day, assuming [a normal] working day of 12 hours, [can] be regarded as a total working day of 144 hours, of which [132 hours are necessary labour] time, 12 surplus labour time. In the second case the total working day consists of 72 hours, of which 60 are necessary labour time, [12 surplus labour time]. Since a total working day of 72 hours now contains as much surplus labour as the day of 144 hours, in the latter case [6 workers] appear [to be use]less, superfluous for the production of 12 hours of surplus value. They are therefore suppressed by the employment of machinery.

[...]—which lies at the basis of all growth in relative surplus value—prolongation of surplus labour time through [curtailment of necessary] labour time; however, a process which was only employed previously in regard to the working day of the individual worker is now employed [...] composed of the sum total of the working days of the workers simultaneously employed. The

retranchement now takes [...]. In the first case the sum total of hours of labour remains the same. It is merely their *division* between necessary and surplus labour, between [...], which is altered. But now there is a change not only in the *division* of labour time but also in the *sum total* of labour time employed.

[...] total working day of 144 hours e.g., which is no longer necessary, since the employment of machinery, to [produce] 12 hours of surplus labour. *Superfluous, useless* labour is removed. From the capitalist standpoint all labour is useless, i.e. *unproductive*, which is not necessary [...], which would therefore be required for the *mere* reproduction of the worker himself. In the above example 72 [...], i.e. 6 days of labour. I.e. 6 of the 12 workers are dismissed. In the first case the magnitude remains [... (...)] hours contained in it) the same. The division alone has changed. In the second case the magnitude changes—the total amount [...] the division of the same. In the first case, therefore, the *value* remains the same, while *the surplus value increases*. In the second case [...] at the same time the labour time objectified in the product, while the surplus [value] increases.

[...] of simple cooperation and divi[sion of la]bour [takes] place. This is as with [...] Relatively to the product [...] the number of workers is reduced [...] workers [...] capital C [... con]stant [...], [XVI-997] with machinery, an absolute reduction (with regard to a particular capital) takes place. In certain branches of industry, agriculture [...] reduction is in fact always in advance, without being CHECKED as in other branches of industry BY THE CIRCUMSTANCE THAT AT THE NEW RATE [...] OLD NUMBER OF LABOURERS MAY BE SUCCESSIVELY ABSORBED, BUT EVEN AN ABSOLUTE[LY] GREATER ALTHOUGH RELATIVELY MUCH SMALLER X [...]

The way in which the rate of profit is altered even in the case considered above, where the rate of surplus value grows in the same (or [a greater proportion]) than the fall in the number of workers, hence the fall in one factor finds compensation in the growth of the other through more [...]—hence the magnitude of the surplus value remains unchanged or even grows—depends on the proportion in which [...] is [affected by] a CHANGE in the components of the total capital or on the proportion in which this CHANGE proceeds. [...] The surplus value the capital makes *can only derive from the number of workers it exploits, or from the number of workers who* [...] society—alias the class of capitalists as a whole—is affected by the setting free of the workers he has dismissed, [...]

It is now an entirely self-evident *general law* that with the

progressive increase in the employment of machinery the magnitude [...] remain, but must *fall*; i.e. that the reduction in the number of the [...] (in relation to a particular measure of capital) [...] *reduction* in the *number* cannot be continuously counterbalanced by a corresponding *increase in the rate of surplus value* [...] the working day of the individual worker is exploited.

Assume that 50 workers provide only 2 hours of surplus [labour]; in that case the surplus value created by them=100. Assume further [...] if 10 men were replaced by 1, 5 would replace the 50. [...] labour time= $5 \times 12 = 72^a$ hours. The same for the *total value of their product*. The surplus [value] created by them [is] < than 72, since only equal to 72--the necessary labour time. Hence it is < than 100 by much more. There therefore takes place [...], so large that the reduction in the absolute amount of labour which is employed, brought about through the development of productive power, [...] by an increase of equal size in the *rate of surplus value*—where surplus value therefore falls, despite the growth in the rate of surplus value. [...] A *fall* in the amount of surplus value—or the total amount of surplus labour employed—must necessarily come about with the development of machinery [...] it is [shown] here that capitalist production enters into contradiction with the development of the productive forces and is by no means their absolute [...] and final form.

// If the 50 workers could all be employed at the new rate, or even only 25 perhaps, surplus value would grow, and not only its rate, as compared with the earlier case. Hence the importance of the scale on which machinery is employed, and its tendency to employ as many workers as possible at the same time, combined with the tendency to pay for as few necessary working days as possible. // (50) (150)

β) Let us assume a capital of 600. Let 400 of this be laid out in labour, 200 in constant capital, instruments and raw material. Let the 400 represent 10 workers. If a machine were to be employed, which together with the raw material=520, and if the capital laid out in labour were only to be 80 now, 10 workers would be replaced by 2 or 5 by 1. The total amount of capital laid out would remain the same, hence *production costs* would remain the same. The 2 workers would not produce more surplus labour time for each 12 hours than the 10 produced, for wages would have remained the same. Nevertheless, the quantities of commodities produced under the changed conditions of production might on

^a Thus in the manuscript.—Ed.

certain presuppositions become cheaper, although it is presupposed that this quantity has not increased, or that no more commodities are produced with the same capital under the new process of production than were previously produced under the old one. Since the same quantity of raw material has been worked on as before, 150, the machinery has now risen from 50 to 370. // Namely 370 machinery, 150 raw material, 80 labour. $370+150+80=600$. //

Assume now that the machinery employed has a turnover time // reproduction time // of 10 years. Of the value employed, 37 ($\frac{370}{10}$) would enter into the annual output of commodities for the replacement, WEAR AND TEAR, of the machinery. The sum total of the production costs of the commodities // disregarding profit and surplus value here, as the rate remains the same // would now be $=37+150+80=267$. The production cost of the commodity under the old process $=600$, whereby we assume that the instruments which enter into the process (estimated at 50) must be renewed every year. The price of the commodities would have been cheapened in the ratio 267:600. To the extent that the commodity enters into the worker's consumption, its cheapening would bring about a reduction in the labour necessary for his reproduction and thereby an increase in the length of surplus labour time. // But initially, as in any employment of machines, capitalist II would admittedly sell cheaper than capitalist I, but not in the same proportion as his production costs had fallen. This is in fact an anticipation of the cheapening of the production costs of labour which occurs through machinery [...] [If] his workers receive the same wages as previously, they can admittedly buy more commodities (more of the commodities they themselves have produced) but not in the proportion in which they have become more productive. It would be the same thing if the capitalist paid them in his own commodity, as if he were to give them a quantity which was admittedly larger, but smaller in the proportion to which this quantity expressed exchange value. // Even if we disregard the relation itself, and consider the empirical form, in which the capitalist calculates interest, say 5%, on his total capital according to the part of it which has not been consumed. Then 5% on 300 (the part of the capital not consumed in the first year) $=15$, or 5% profit e.g., similarly 15, therefore 30. Thus the price of the commodities would come to $280+30=310$, still almost half as cheap as in the first case.¹⁰⁷

In fact only 370 thalers were laid out for fixed capital, 150 capital for raw material, and 80 for labour.¹⁰⁸

However, if in order to replace 5 workers by one the capital [...] the machinery had to increase from 50 to perhaps 2,000 instead of 370, the total capital therefore rising to 2,300, the WEAR AND TEAR contained in the commodity annually would $= \frac{2,000}{100} = 20$. Production costs would $= 250$, with interest and profit of 150. $250 + 150 + 80 = 480$. 10% on [...] So in this case [...] by inequality [...] 2,000 again $=$ [...] machinery made dearer.

[XVI-998] [...] in two ways:

[...] turnover time peculiar to fixed capital—mode of circulation—a much smaller aliquot part of it enters into the value [...] product—than is really required for production. Only its WEAR AND TEAR, the part of it that is worn out in the course of a year, enters into [the value of the pro]duct, because only this part really circulates. Hence if the capital remains the same and there is only a CHANGE in the proportion of the capital [...] component of the capital laid out [in] labour, there is a cheapening of the product, the ultimate result of which is a cheap[ening ... in the pro]duction costs of labour, hence an increase in the rate of surplus value, i.e. of surplus labour time.

[If] capital [remains] *the same*, and there is also no increase in surplus time (or no original reduction in wages) [...] measure, as the turnover time (reproduction time) of the fixed capital declines in velocity.

[...] the aliquot part of the old capital, which is converted into fixed capital, but the capital had rather to [...] so that the total capital might grow, the proportion of this growth, required for the number of workers [...] occur, in which the commodity produced with the machine became dearer than that produced with hand labour [...]

[...] posited on the assumption that the amount of commodities produced by the smaller number of workers is not larger, [...] [than the] number produced without machinery, or on the assumption that [...] capital with machinery does not [...] than previously without it. [...]

[...] workers employed produced more than the 10 without it, they thus produce perhaps as much as 20 [...] always a definite number, but perhaps a greater number than they force out. In this case 1 replaced [...] could perhaps only be employed if both were employed. In any case, the part of capital laid out in [...] would have to be *doubled*. I.e. the magnitude of the capital could not [remain] unaltered.

[...] but if the slow turnover time of the capital cheapens the product, even if the old capital increases again, hence a greater

amount of commodities than before is not produced, then this is even more so in the other case.

This belongs to *the section on production costs*,^a just as the previous comments on *surplus value* must be treated under the heading "Surplus Value".¹⁰⁹

// The total amount of the capital advanced enters into the *labour process*, but only the part of the capital consumed during a particular period of the labour process enters into the *valorisation process* or into the *value of the product*. (See *Malthus*.^b) Hence the smaller value or the greater cheapness of the commodities which are e.g. produced with the same capital of 500, if $\frac{2}{5}$ of this are fixed capital and $\frac{1}{5}$ variable capital, than if the proportions are inverted. (Even if profit and interest are calculated on the whole of the capital, only an aliquot part of it enters into the value of the commodity, not the capital itself, as in the case in which the whole of the capital or the greatest part of it is laid out in living labour.) But the profit is calculated on the whole of the capital, including the unconsumed part of it. Although the unconsumed part of the capital does not enter into the value of the product of the individual capital considered for itself, it does enter into the average production costs of capitalist production, in the form of profit (interest), because it constitutes an element of the average profit, and an ITEM in the calculation by means of which the capitalists divide among themselves the total surplus value of the capital. //

// The rate of profit depends upon, or is nothing other than, the ratio of the surplus value (considered as an absolute magnitude) to the magnitude of the capital advanced. But the surplus value itself—i.e. its absolute magnitude—may fall even though the rate of surplus value rises, and rises considerably. The amount of surplus value or its absolute magnitude must indeed fall, despite any rise whatever in the rate of surplus value, once the [...] of *surplus value* of the labour which is displaced by machinery is greater than the *total amount of value*, or labour,³² which steps into its place. Or the *surplus time* of the displaced worker[s] is greater than the *total labour time* of the workers who replace them. Thus if 50 are replaced by 5. And the surplus labour time of the 50 was 2 hours (with a normal working day of 12 hours). Their surplus labour time or the *surplus value* created by them=100 hours. The total labour time or the *value* created [by the 5] (hence the

^a See this volume, pp. 78-103.—*Ed.*

^b *Ibid.*, pp. 70, 100.—*Ed.*

necessary labour time+surplus)=60 hours. Assume that these 5 workers provide twice as much surplus time, or that surplus value=4 hours every day for each of them. So that for 5 there are 20 hours. The rate of surplus value has grown by 100%; the total amount of surplus value or the surplus value itself is only $4 \times 5 = 20$ hours. The surplus value is only $\frac{1}{5}$ of the 100 created by the 50, smaller by 80%. If now 15 workers were employed at the new rate the amount of surplus value would rise to 60, if 20 to 80, if 25 to 100. Half as many workers would have to be employed at the new rate in order to produce as much surplus value as at the old rate. But if 50 were employed, they would produce twice as much, namely 200. Not only the rate of surplus value, but also the surplus value itself would have doubled.// //Assume that the 5 only produced surplus value at the same rate as the 50, hence only 10 hours. Then 50 workers would have to be employed just as before in order to produce the same surplus value, although they would produce 10 times as many commodities in the same time. This in the branches of industry where the product does not enter into the consumption of the workers themselves. Here the profit derives purely from the fact that the *necessary* labour time, over a certain average period, stands higher than the labour time needed by the capitalists who have introduced the new machinery; they therefore sell the commodity *above* its value. This is, however, different from sheer fraud. They sell it *above* the value it costs them, and *below* the value it costs society before the general introduction of the machinery. They sell the labour of their [...] *higher* labour, they buy it as yet at [...] With the [...] at the new rate. But there is also an increase in c[...] more significant [...] ¹¹⁰

[XVI-1009] //In the latter case he sells the individual commodity cheaper than it can be produced given the still *generally prevailing production costs*, he sells it *below* its average value, but not cheaper in the same proportion as he himself produces it below its average value. He sells the *total amount* of the commodities produced in an hour, in a day—//and with the new means of production he provides a greater total amount in the same time//—*above* their value, above the hour or the day of labour time contained in them. If he produces 20 yards with the same production costs as the others incur in producing 5, and if he sells them $\frac{1}{5}$ below the average price, he is selling them $\frac{3}{5}$ *above* their value. If the 10 yards cost $10x$ and he sells the 20 at $20 \times \frac{4x}{5} = \frac{80x}{5} = 16x$, he is selling them at 6 over their value of 10. $\frac{1}{5}$ of 10 is 2, or $\frac{3}{6}$ of 10 is 5; 20 cost him 10; or 2 costs him 1 or $\frac{5}{5}$. What now is the relation to his workers? If they continue to receive the same wages as before,

they also receive commodities for their wages (i.e. in so far as the more cheaply produced commodity enters into their [XVI-1010] consumption). And let this take place for all the workers, each of whom would be able to buy more of this specific commodity with the aliquot part of their wage which is expended for it.

The capitalist would make a surplus profit of $\frac{3}{5}$ or 60%. He sells them the commodity $\frac{1}{5}$ cheaper, but he sells the labour contained in it $\frac{3}{5}$ dearer than the average labour, hence at a value standing $\frac{3}{5}$ above the average labour. $\frac{3}{5}$ of 12 hours of labour

$$= \frac{12 \times 3}{5} = \frac{36}{5} = 7\frac{1}{5}.$$

This *surplus labour*, which they have provided for him through the higher potentiation of their labour, HE
POCKETS.

Let us assume that necessary labour time=10. Thus under the old conditions they would obtain $\frac{10}{12}$ of the product 10. In the old situation 1 hour of labour produces $\frac{1}{12}$ of the product of a day, hence in 10, $\frac{10}{12}=8$ thalers, for example. In the new situation $\frac{16}{12}$ is produced in one hour of labour= $\frac{4}{3}$, $1\frac{1}{3}$. In 3 hours 4 thalers, in 6 hours 8 thalers.¹¹ Thus they work 6 hours of surplus labour. Previously it was only 2.//

//Adam Smith correctly adduces in favour of an average profit—i.e. a profit purely determined by the magnitude of the capital—the example of the use of silver instead of iron, or gold instead of silver, of a more costly raw material in general, under otherwise identical conditions of production.¹¹² Here the part of the capital advanced in the form of raw material may grow hundredfold, and more, ditto therefore the profit, with the same rate of average profit. Although not the slightest CHANGE takes place in the organic relations between the different components of the capital.//

//The Yankee economist Wayland is very naive.¹¹³ Because relative surplus value is only produced in branches of industry directly or indirectly involved in the production of articles destined for the workers' consumption, hence it is there in particular that capital introduces cooperation, division of labour and machinery, and because this occurs to a much lesser extent in luxury production, he concludes that the capitalists work to the advantage of the poor, not the rich, and capital there develops its productivity in the interest of the former, not the latter.//

Average surplus value—disregarding here absolute surplus value, and considering only relative surplus value, which arises from the curtailment of necessary labour time through the development of the productive powers of labour—is the total

amount of surplus value in all specific branches of production, measured against the *total capital* laid out for living labour. Since the development of productive power is very uneven in the different branches of industry (which directly or indirectly produce the means of subsistence entering into the worker's consumption), uneven not only in degree but often proceeding in opposed directions, as the productivity of labour is just as much [XVI-1011] bound up with natural conditions which may lead to a decline in productivity while the productivity of labour grows // the whole of the investigation into the extent to which natural conditions influence the productivity of labour independently of the development of social productivity and often in opposition to it, belongs into the analysis of rent //—it results from this that this average surplus value must stand very much below the level to be expected from the development of productive power in the individual branches of industry (the most prominent ones). This in turn one of the main reasons why the rate of surplus value, although it grows, does not grow in the same proportion as the variable capital declines in its proportion to the total capital. This would only be the case (assuming that the proportion is correct in general; it is correct for the rate of surplus value, as has been shown previously,^a but not for surplus value) if those branches of industry in which the variable *C* declines the most against fixed, etc., were to make their products enter into the consumption of the worker in the same proportion. But take here, for example, the proportion between industrial and agricultural products, where the relation is precisely the opposite.¹⁴

Let us now consider a particular branch of industry. If an increase of productive power occurs in it, the increase which occurs in this particular branch absolutely does not imply a direct increase in the branch of industry which provides it with its raw material (with the exception of *agriculture*, since its product itself provides its raw material, in seeds, and this is again a peculiarity of agriculture). The raw material branch itself at first remains completely unaffected by the increase, and may also remain unaffected subsequently. // Nevertheless, a cheaper raw material does not step in to replace it, unless *the same raw material* becomes cheaper, as cotton does not replace sheep's wool. // But the productivity is demonstrated by the fact that a greater quantity of raw material is needed to absorb the same quantity of labour. Thus this part of constant capital at first grows unconditionally

^a See this volume, pp. 115-16, 128-29.— *Ed.*

with the greater productivity of labour. If 5 produce as much as 50, or more, 50 will work up 10 times more raw material. The raw material must initially increase in *the same* proportion as the productivity of labour. Or if we assume that 5 produce as much as 50, and 45 are dismissed, the 5 now need $10\times$ as much capital as did the 5 previously, or as much as 50. This part of the capital has grown 10 times, at least, measured against the capital laid out in labour. // With greater exploitation this can be restricted somewhat, if on the one hand there is a relative reduction in waste through the improved quality of the labour, and on the other hand because the waste is absolutely more massive, more concentrated, can serve better as raw material once again for new, different production, hence in fact the same raw material stretches further, AS TO ITS VALUE. This is an ITEM, but an insignificant one. // However, this is not to say by any means that fixed capital, buildings, machinery (lighting, etc.) (apart from fixed capital the *matières instrumentales* in general) increase in the same proportion, so that 10 times as much would now be required by the 5 as they required before. On the contrary. Although machinery of greater BULK becomes dearer absolutely, it becomes cheaper relatively. This is particularly true for the motive force, steam engines, etc., the production costs of which fall (relatively) with [the increase in] their horse power or other POWER. This part—hence the *total constant capital*—therefore by no means grows in proportion with the growth in productive power, although it does grow *absolutely*, to an insignificant degree. The total capital therefore does not grow [XVI-1012] proportionally in relation to the growth of productive power.

If out of the 500 there were originally perhaps 300 for workers, 150 for raw material and 50 for instruments, it follows that a doubling of productive power through the application of machinery would require the employment of at least 300 for raw material, and if 50 workers¹⁵ produced this product of twice the size, 50 for labour; but it does not follow that the cost of machinery, etc., for these 30^a workers would rise from 50 to 500, a tenfold increase. The cost of machinery would perhaps only rise to double the amount—to 100; so that the total capital would have fallen from 500 to 450. The ratio between the variable capital and the total capital would now be 30:450. $\frac{30}{450} = \frac{3}{45} = \frac{1}{15}$. 1:15.

^a Marx altered the number of workers from 50 to 30 and based his subsequent calculations on the latter figure.—*Ed.*

Previously the ratio was 300:500, $\frac{300}{500}=3:5$. $\frac{1}{15}=\frac{3}{45}$; and $\frac{3}{5}=\frac{27}{45}$. According to this, however, the total capital required to produce a certain surplus value would have fallen. Assume in the first case that the surplus value=2 hours out of 12,= $\frac{2}{12}$, in the second case= $\frac{4}{12}$ or $\frac{1}{3}$.¹¹⁶

In the first case $\frac{1}{6}$ of 300 (if a worker=1 thaler)=50. And this is 10% of 500.

In the second case $\frac{1}{3}$ of 30=10. 450 are required for the production of these 10. If we assume that 300 workers are employed at this new rate, they would produce 100. The total capital needed to produce the 100 would rise to $450 \times 30 = 4,500 \times 3 = 13,500$. In the previous ratio it was 1,000 to produce 100.

But assume that fixed capital falls still more, not perhaps relatively in proportion to the growth of the productive forces. If the 30 workers produce as much as the 300 did previously, they will need 500, just as before: 150 for raw material, 30 for labour (as previously 300), but perhaps only 100 for fixed capital. The total capital is now 210, of which variable capital is $\frac{3}{21}=\frac{1}{7}$, [XVI-1013] previously= $\frac{3}{5}$. (300 out of 500)

If the surplus value were now to increase 5fold, the 30 would give a surplus value of 50, where the 300 gave one of 10. Thus on 300, 30, would be on 30—15.

The total capital is 500 in the first case, 210 in the second case. 410 would now give 30, hence more than 500 previously.

The growth of productive power allows more commodities to be produced in the same labour time. Therefore, it does not raise the exchange value of the commodities produced in this way, but only their quantity; it rather lessens the exchange value of the individual commodities, while the value of the total amount of commodities produced in a given time remains *the same*.

To say that there is an increase in productivity is the same as saying that the same raw material absorbs less labour in the course of its conversion into the product, or that the same labour time requires more raw material for its absorption.

For example, a pound of yarn requires exactly the same amount of cotton, whether a large or a small amount of labour is required for the conversion of the cotton into yarn. If the productivity of the spinner rises, the quantity of cotton contained in a pound of yarn absorbs less labour. The pound of yarn therefore falls in

value, gets cheaper. If 20 times as many pounds of cotton as before are spun in an hour, e.g. 20 pounds instead of 1 pound, each pound of yarn falls by $\frac{1}{20}$ in the value component the labour of spinning adds to it; in the differential value between a pound of cotton and a pound of yarn (leaving aside the value of the fixed capital present in the spun yarn). Nevertheless, the value of the product of the same time is now greater than before, not because more new value has been created, but only because more cotton has been spun, and the value of this has on our assumption remained the same. The newly created value would be the same amount for the 20 pounds as previously for the one pound alone. For 1 pound it would in the new mode of production be smaller by $\frac{1}{20}$.

Presupposing therefore that the commodities are sold at their value, the increase of productive power (with the exceptions mentioned earlier^a) only creates surplus value in so far as the cheapening of the commodities cheapens the production costs of labour capacity, hence shortens the necessary labour time, hence lengthens surplus labour time.

The product of every particular sphere of production can therefore only create surplus value in so far as, and in the proportion in which, this *specific* product enters into the average consumption of the workers. But every such product—since a developed division of labour within society is a fundamental prerequisite for the development of commodities in general and even more for capitalist production—only forms an *aliquot* part of the worker's total consumption. The increase of productive power in every particular sphere therefore creates a surplus value *by no means in proportion to the increase of productive power* but only in the much smaller proportion in which the product of this particular sphere forms an *aliquot* part of the worker's total consumption. If a product formed $\frac{1}{10}$ of the worker's total consumption, a doubling of productive power would allow the production of $\frac{2}{10}$ in the same time as $\frac{1}{10}$ was produced previously. $\frac{1}{10}$ of the wage would fall to $\frac{1}{20}$, or by 50%, while the productive power would have risen by 100%. 50% on $\frac{1}{10} \times = 5\%$ on 1x. E.g. 5% on 100 comes to 105. 50% on $\frac{100}{10}$ or 10 comes to 5, the same total amount. The growth of productive power by 100% would in this case have cheapened wages by 5%. [XVI-1014] It is therefore clear why the striking growth of productive power in individual branches of industry appears to be entirely out of proportion with

^a See this volume, pp. 130-32.—Ed.

the fall of wages or the growth of relative surplus value. Hence capital too—to the extent that this depends on surplus value, a point we shall soon investigate more closely—is far from increasing in the same proportion as the growth in the productive power of labour.

Only if productive power were to increase evenly in all branches of industry which directly or indirectly provide products for the worker's consumption could the proportional growth of surplus value correspond to the proportional increase of productive power. But this is by no means the case. Productive power increases in very different proportions in these different branches. Contrary movements often take place in these different spheres (this is due partly to the anarchy of competition and the specific nature of bourgeois production, partly to the fact that the productive power of labour is also tied to natural conditions, which often become less productive in the same proportion as productivity rises, in so far as it depends on social conditions) so that the productivity of labour rises in one sphere while it falls in another. // Think for example of the simple influence of the seasons, on which the greater part of all the raw products of industry depends, exhaustion of forests, coal seams, mines and the like. // The growth of average total productivity is therefore always and unconditionally much less than this growth appears in a few particular spheres, and indeed in one of the main branches of industry, the products of which enter into the worker's consumption, agriculture, it is as yet FAR FROM KEEPING PACE WITH THE DEVELOPMENT OF THE PRODUCTIVE POWERS IN THE MANUFACTURING INDUSTRY. On the other hand, in many branches of industry the development of productive power has no influence, either directly or indirectly, on the production of labour capacity, hence of relative surplus value. Quite apart from the fact that the development of productive power is not only expressed in an increase in the rate of surplus value but also in a (relative) reduction in the number of workers.

Hence the growth of surplus value is by no means in proportion to the growth of productive power in particular branches of production, and, secondly, it is also always smaller than the growth of the productive power of capital in *all* branches of industry (hence also those branches whose products enter neither directly nor indirectly into the production of labour capacity). Hence the accumulation of capital grows—not in the same proportion as productive power increases in a particular branch, and not even in the proportion in which productive power increases in all branches, but only in the average proportion in which it increases

in *all* the branches of industry of which the products enter directly or indirectly into the overall consumption of the workers.

The *value* of a *commodity* is determined by the total labour time, *past* and *living*, which enters into it, which is contained in it; hence not only by the labour time which is added in the final production process, from which the commodity as such emerges, but by the labour contained in the fixed capital and circulating capital, or in the conditions of production of the labour last to be added, by the labour time contained in the machinery, etc., the *matières instrumentales* and the raw material, in so far as their value reappears in the commodity, which is entirely the case with raw material and [XVI-1015] the *matières instrumentales*, whereas the value of the fixed capital only reappears partially in the product—in proportion to its WEAR AND TEAR.

If $\frac{1}{4}$ of the value in a commodity consisted of constant capital and $\frac{3}{4}$ of wages; if as a result of an increase of productive power in this particular branch the amount of living labour employed were to fall from $\frac{3}{4}$ to $\frac{1}{4}$, and if the number of workers employed in its production were to be reduced from $\frac{3}{4}$ to $\frac{1}{4}$, then, given the presupposition that the $\frac{1}{4}$ of labour was exactly as productive as the $\frac{3}{4}$ was previously (and not more so), the value of the new fixed and circulating capital, apart from the raw material contained in the $\frac{1}{4}$, could rise to $\frac{2}{4}$. Then the value of the commodity would remain unchanged, although the labour would have become more productive by $\frac{3}{4}$ to $\frac{1}{4}$, i.e. by 3 to 1, i.e. it would have tripled its productive power. Since the value of the raw material would have remained the same, the new fixed and circulating capital would not be able to rise as far as $\frac{2}{4}$ of the old value of the commodity, thus permitting the commodity to become cheaper, with a real fall in its production costs. Or the difference between the new labour time and the old would have to be larger than the difference between the value of the old constant capital and the new (deducting the raw material). It is not possible to add the same amount more of past labour as a condition of labour as has been deducted of living labour. If the $\frac{1}{4}$ of workers were to produce *more* than the $\frac{3}{4}$ did previously, so that the increase in the productivity of their labour were greater than the reduction in their numbers or their total labour time, the new constant capital could grow // disregarding surplus value here and speaking only of the value of the commodity, on which after all the surplus value depends, because the cheapening of the production costs of labour

capacity depends on the lessening of the value// by $\frac{2}{4}$, and even by more than $\frac{2}{4}$, only it would now have to grow in the same proportion as the productive power of the new labour.

Secondly, however, this relation is also brought about, 1) by the fact that the fixed capital only enters in part into the value of the commodity; 2) the *matières instrumentales*, such as the coal consumed, the heating, lighting, etc., are proportionally economised by labour on a large scale, although their total value increases, and therefore a smaller value component of the same enters into the individual commodity. But the condition remains the same, that the value component of the machinery which enters into the individual commodity as WEAR and TEAR, and the *matières instrumentales* which enter into it, should be smaller than the difference in productivity between the new and the old labour. Nevertheless, this does not exclude the possibility that an equally large or even a larger quantity of constant capital might be used for the total amount of commodities, e.g. the number of pounds of twist, which are produced in a given period of time, e.g. a day, than was previously expended in the form of wages. Only a smaller quantity in respect of the individual commodity. Presupposing, therefore, that the $\frac{1}{4}n$ workers produce exactly as much in one day as the $\frac{3}{4}n$ workers produced previously, the law would remain absolute. Because the amount of commodities produced would remain the same in proportion to these $\frac{1}{4}n$ workers as it was for the $\frac{3}{4}n$ workers. The value of the individual commodity could therefore fall *only* if the new constant capital < than that previously expended in wages and now no longer in existence. It can therefore be said absolutely that in the proportion in which a *smaller quantity of labour replaces a greater quantity of labour*—[XVI-1016] does not need to be identical, but may be, and mostly is, greater than the proportion in which the number of workers is diminished (the relative number of workers)—the constant capital which enters into the commodity //and in practice also the interest and profit on the *whole* of the constant capital, which admittedly enters into the labour process but not into the valorisation process// must be greater than the proportion in which the new constant capital grows (here the raw material is left out). This is only an aspect to be introduced in distinction to the one-sided consideration in dealing with surplus value. To be inserted in the section on *production costs*.^a

This does not, however, (owing to the way in which the fixed capital is reproduced) prevent the total capital //hence also the

^a See this volume, pp. 78-103.—Ed.

part of it which is not *consumed* in the labour process, but still enters into it// from being absolutely greater than the previous total capital.

Thus if e.g. 1 replaces 10, the capital which is allotted to him in the form of machinery, etc., and *matières instrumentales*—in so far as it enters into his product—is smaller than the previous capital which was required for the 10 workers. The proportion of capital laid out in labour has fallen 10 times here, but the new constant capital has perhaps only risen 8 times. From this point of view, therefore, the capital laid out in labour has not fallen proportionally in the same degree as the capital required for its realisation [has increased]. Or the total amount of capital which enters into the production of the one worker is smaller than the total amount of capital which enters into the production of the 10 workers replaced by him. And, although the part of capital laid out in wages has fallen 10 times in comparison with previously, it still forms a larger part of this new capital than $\frac{1}{10}$, because this new capital, which enters into the production of the one worker, has itself become *smaller* than the old capital, which entered into the production of the 20 workers.

On the other hand, however, the total capital which is required as condition of production for this increase in the productivity of labour—including namely the part which does not enter as WEAR and TEAR into the product—but is rather consumed in a series of work periods—is greater—may be much greater than the previous total capital, so that the part of the total capital laid out in labour has declined in a still greater proportion than the productivity of labour has grown. The more the fixed capital develops, i.e. the productivity of labour, the greater this unconsumed part of the capital, the smaller the proportion of the part of capital laid out in labour in relation to the total capital. From this point of view it might appear as if the magnitude of the capital grew more rapidly than the productivity of labour //but even the total capital cannot grow to the extent that the interest and profit on it raise the production costs of the commodity to the level to which the productivity of labour has risen//. But this only means that the portion of the capital annually produced which is converted into fixed capital is always increased relatively to the portion of the capital which is laid out in wages; by no means, however, that the total capital—which is in part fixed, in part converted into wages—grows as quickly as the productivity of labour.

If the part of capital laid out in labour thus falls, this is even

more the case if the growth in the part of capital which consists of raw material is brought into *consideration* at the same time.

[XVI-1017] Let us take an extreme case: the rearing of sheep on a modern scale, where previously small-scale agriculture predominated. But here *two different branches of industry* are being compared. The amount of labour—or of capital laid out in wages—which is suppressed here is enormous. Hence the constant capital can also grow enormously. And it is very much the question whether the total capital which is here allotted to the individual shepherds is greater than the total amount of the capitals which were previously divided among several hundred shepherds.

It is questionable whether, in individual branches of industry in which the total capital undergoes extraordinary growth, profit originates at all from the surplus value produced in these branches and not rather, in connection with the calculations made by the capitalists between themselves, from the general surplus value produced by the sum total of all the capitals.

Many ways of increasing productive power, particularly with the employment of machinery, require absolutely no relative increase in capital outlay. Often only relatively inexpensive alterations in the part of the machine which provides the motive force, etc. See examples.¹¹⁷ Here the increase in productive power is unusually great compared to the capital outlay which falls to the relative share of the individual worker—of the individual commodity as well. Thus here—at least as far as this part of the capital is concerned—the capital laid out in raw material grows the more rapidly—no noticeable reduction in the rate of profit—at least not to the extent that it would be caused by an increase in this part of the capital. On the other hand, although the capital does not grow here so much relatively speaking, it is true to say, as it is in the general case overall, that for the most part the absolute amount of capital employed—hence the concentration of capital or the scale on which work is done—must grow very significantly. More powerful steam engines (of more horsepower) are absolutely dearer than less powerful ones. But relatively speaking their price falls. Even so, a greater outlay of capital—a greater concentration of capital in one hand—is required for their employment. A bigger factory building is absolutely dearer, but relatively cheaper, than a smaller one. If every aliquot part of the total capital is smaller in proportion to the total capital employed by the labour

saved, this aliquot part can mostly be employed solely in such MULTIPLES as will raise the total amount of capital employed to an extraordinary degree or in particular the part of the total capital not consumed in a single turnover, the part the consumption of which extends over a period of turnovers lasting many years. It is in general only with this work on a large scale that productive power is increased tremendously, since it is only in this way that:

1) the principle of MULTIPLES, which underlies simple cooperation, and is repeated in the division of labour and the employment of machinery, can correctly be applied. (See *Babbage*, on how this increases the scale of production, i.e. the concentration of capital.^a)

2) The greater altogether the number of workers employed on the new scale, the smaller, relatively, the portion of fixed capital which enters as WEAR and TEAR for buildings, etc. The greater the principle of the cheapening of production costs by joint utilisation of the same use values, as lighting, heating, common use of the motive power, etc. [XVI-1018] The more is it possible to employ absolutely dearer, but relatively cheaper, instruments of production.

The circumstance that in some branches of production, railways, canals, etc., where an immense fixed capital is employed, these are not independent sources of surplus value, because the ratio between the labour exploited and the capital laid out is too small.

A further remark needs to be added to the previous page^b:

It is possible that if a capital of 500 was needed for 20 workers, and now a total capital of only 400 is needed for 2, 2,000 workers will now have to be employed, hence a capital of 400,000, in order to employ the aliquot parts of the 400 productively. It has already been shown^c that even with an increased rate of surplus value the relative reduction in the number of workers to be exploited can only be counterbalanced by a very great increase in the multiple of labour.

This is seen (appears) in competition. Once the new invention has been introduced generally, the rate of profit becomes too small for a small capital to be able to continue to operate in the

^a Ch. Babbage, *Traité sur l'économie...*, Paris, 1833, pp. 275-78.¹¹⁸— *Ed.*

^b See this volume, pp. 139-40.— *Ed.*

^c *Ibid.*, pp. 124-25, 128-29.— *Ed.*

given branch of industry. The amount of necessary conditions of production grows in general in such a way that a significant minimum level comes into existence, which excludes all the smaller capitals from this branch of production for the future. It is only at the beginning that small capitals can exploit mechanical inventions in every sphere of production.

The growth of capital only implies a reduction in the rate of profit to the extent that with the growth of capital the above-mentioned changes take place in the ratio between its organic components. However, despite the constant daily changes in the mode of production, capital, or a large part of it, always continues to accumulate over a longer or shorter period on the basis of a definite average ratio between those organic components, so that NO ORGANIC CHANGE OCCURS IN ITS CONSTITUENT PARTS as it grows.

On the other hand, a reduction in the rate of profit can only be enforced by a growth in capital—because of a growth in the absolute amount of profit—as long as the rate of profit does not fall in the same proportion as the capital grows. The obstacles which stand in the way of this are to be found in the considerations we have already brought forward.^a

Absolute plethora of capital.

Increase in workers, etc., despite the relative decline in variable capital or capital laid out in wages. However, this does not take place in all spheres of production [XVI-1019]. E.g. not in agriculture. Here the decline in the element of living labour is absolute.

An increase in the amount of labour on the new production basis is in part necessary in order to compensate for the lessened rate of profit by means of the amount of profit; in part in order to compensate for the fall in the magnitude of surplus value which accompanies the rising rate of surplus value on account of the absolute reduction in the number of workers exploited by means of an increase in the number of workers on the new scale. Finally the principle of MULTIPLES touched on earlier.

^a See this volume, pp. 104-33.— *Ed.*

But it will be said that if the variable capital declines in sphere of production I, it increases in the others, namely those which are employed in the production of the constant capital needed for sphere of production I. Nevertheless, the same relation enters here, e.g. in the production of machinery, in the production of raw products, *matières instrumentales*, e.g. coal. The tendency is general, although it is first realised in the different spheres of production by fits and starts. It is counterbalanced by the fact that the spheres of production themselves increase. In any case, it is only a need of the bourgeois economy that the number of people living from their labour alone should increase absolutely, even if it declines relatively. Since labour capacities become superfluous for the bourgeois economy once it is no longer necessary to exploit them for 12 to 15 hours a day. A development of productive power which reduced the absolute number of workers, i.e. in fact enabled the whole nation to execute its total production in a smaller period of time, would bring about revolution, because it would demonetise the majority of the population. Here there appears once again the limit of bourgeois production, and the fact becomes obvious that it is not the absolute form for the development of productive power, that it rather enters into collision with the latter at a certain point. In part this collision appears constantly, with the crises, etc., which occur when now one now another component of the working class becomes superfluous in its old mode of employment. Its limit is the surplus time of the workers; it is *not concerned* with the absolute surplus time gained by society. *The development of productive power* is therefore only important in so far as it increases the surplus labour time of the workers, not in so far as it reduces labour time for material production in general. It is therefore embedded in a contradiction.

The rate of surplus value—i.e. the ratio of surplus to necessary labour time for the individual worker (therefore in so far as surplus value is not modified in the different spheres of production by the proportion between the organic components of capital, turnover time, etc.)—is automatically balanced out in all the spheres of production, and this is *a basis for the general rate of profit*. (The modifications which in this way influence the necessary costs of production are compensated for by the competition between capitalists, by the different *ITEMS* which they bring into consideration when dividing among themselves the general surplus value.)

[XVI-1020] That the rate of surplus value rises means nothing other than that the cost of production of labour capacity falls, hence necessary labour time falls, in the proportion to which the *specific* product of that particular sphere of production which has become cheaper enters into the general consumption of the workers. This cheapening of labour capacity, reduction in necessary labour time, increase in absolute labour time, therefore takes place uniformly, and influences all spheres of capitalist production uniformly, not only those in which the development of productive power has taken place, but also those whose products do not enter at all into the consumption of the workers, and in which the development of productive power can therefore create no relative surplus value. (It is therefore clear that in competition, once the monopoly in the new invention has come to an end, the price of the product is reduced to its production costs.)

If, therefore, 20 workers who work 2 hours of surplus labour are replaced by 2, it is correct, as we have seen already,^a that these 2 can under no circumstances provide as much surplus labour as the 20 did previously. But in all spheres of production the surplus labour rises in proportion to the cheapening of the product of the 2 workers, and it rises without any alteration having taken place in the ratio of the organic components of the capitals employed by the spheres of production.

On the other hand, an increase in the value of the product of a sphere of production of this kind, which enters into the reproduction of labour capacity, has just as general an effect; this may wholly or partially paralyse that surplus value.

In the first case, however, the surplus labour time gained is not to be estimated by the sphere of production in which the increase of productive power has taken place, but by the sum total of the diminutions of necessary labour time in *all* spheres of capitalist production.

But the more general the relation becomes, with 2 replacing 20 in *all* or most spheres of production, under the same proportions between total capital and variable capital, the more does the relation in the totality of capitalist production raise the relation in the particular spheres of production. I.e. no reduction in necessary labour time could create the amount of surplus value there was previously, when 20 worked instead of 2.

^a See this volume, pp. 110-11, 127-28.— *Ed.*

And under all circumstances the rate of profit would then fall, even if the capital itself increased so much that a number [of workers] equally great or even greater than before could be employed under the new conditions of production.

The *accumulation* of capital (considered materially) is double. It consists on the one hand in the *growing amount* of past labour, or the available amount of the conditions of labour; the material prerequisites, the already available products and numbers of workers, under which new production or reproduction takes place. Secondly, however, in the *concentration*, the reduction in the number of capitals, the growth of the capitals present in the hands of the individual capitalist, in short in a new distribution of capitals, of social capital. The power of capital as such grows thereby. The independent position achieved by the social conditions of production [XVI-1021] vis-à-vis the real creators of those conditions of production, as represented in the capitalist, thereby becomes increasingly apparent. Capital shows itself more and more as a *social power* (the capitalist is merely its functionary, and it no longer stands in any relation to what the labour of an individual creates or can create), but an *alienated social power which has become independent*, and confronts society as a thing—and through this thing as a power of the individual capitalist. On the other hand, constantly increasing masses [of people] are thereby deprived of the conditions of production and find them set over against them. The contradiction between the *general social power* which capital is formed into, and the *private power of the individual capitalist* over these social conditions of production becomes ever more glaring, and implies the dissolution of this relation, since it implies at the same time the development of the material conditions of production into general, therefore communal social conditions of production.

This development is given by the development of productive power along with capitalist production and by the manner in which this development of productive power takes shape.

The question now is, how is the accumulation of capital affected by the development of the productive forces, in so far as they find expression in *CHANGE[S]* in surplus value and the rate of profit, and how far is it influenced by other factors?

Ricardo says^a that capital can grow in two ways: 1) in that a

^a See D. Ricardo, *On the Principles of Political Economy, and Taxation*, pp. 327-28.¹¹⁹—*Ed.*

greater amount of labour is contained in the greater amount of products, hence the exchange value of the use values grows along with their quantity; 2) in that the quantity of use values grows, but not their exchange value, hence the increase occurs simply through an increase in the productivity of labour.¹²⁰

[MISCELLANEA]

[XVII-1022] LABOUR PROCESS AND VALORISATION PROCESS:
USE VALUE AND EXCHANGE VALUE

It was shown originally¹²¹ that the distinction between the labour process and the valorisation process was of decisive importance, because there rested upon it the distinction between constant and variable capital, and the whole of the theory of capital (surplus value, profit, etc.).

But there are, as will appear, yet more very important relations relevant to this distinction.

We see, firstly, with fixed capital, that it enters into the labour process completely, but into the valorisation process only partially—to the extent that it is used up, as *WEAR AND TEAR*. This is one of the main factors working towards the cheapening of commodities through the employment of machinery; thus *TO A CERTAIN DEGREE* towards the increase of relative surplus value. At the same time, however, it is a cause of the decline in the rate of profit.

But, apart from fixed capital, all those productive forces which cost *nothing*, i.e. those which derive from the division of labour, cooperation, machinery (in so far as this costs nothing, as is for example the case with the motive forces of water, wind, etc., and also with the *ADVANTAGES* which proceed from the *SOCIAL ARRANGEMENT* of the workshop) as well as forces of nature whose application does not give rise to any costs—or at least to the degree to which their application does not give rise to any costs—enter into the labour process without entering into the valorisation process.

It is apparent here, secondly, and once again, how *use value*, which originally appears to us only as the material substratum of the economic relations, itself intervenes to determine the economic category.

We saw this first with money, where the nature of the substratum which serves as its vehicle, the use value of the commodity which functions as money, is itself determined by the economic function.

Secondly: the whole relation of wages to capital rests on the fact that labour capacity as exchange value is determined by the labour time required to produce it; but because its use value itself consists in labour, its exchange value is paid for, and it nevertheless returns in the exchange with capital more exchange value than it receives.

[XVII-1023] 3) Fixed capital—hence this particular economic form—is to a large extent dependent on use value. The duration of the depreciation of the machine, i.e. TO WHAT DEGREE it enters into the price of the commodity during a given period of turnover, and how long the component of capital represented by it circulates, depends on the use value, i.e. on the greater or lesser durability of the machine, etc. The turnover time of the total capital therefore depends on this; and CHANGES in the ratio between the organic components of the capital are also considerably affected by this.

4) The whole distinction between the labour process and the valorisation process—hence also the increase in the productivity of labour while labour time remains the same—the whole of the development of the productive forces—concerns use value, not exchange value. But it changes and modifies the economic relations and exchange value relations themselves.

DIMINUTION IN THE RATE OF PROFIT

No capitalist voluntarily employs a new mode of production, even though it may be much more productive, and however high the ratio in which it increases the rate of surplus value, if it reduces the rate of profit. But every new mode of production of this kind cheapens the commodity. He therefore starts by selling it *above* its costs of production, and *above* its value. He is able to do this because the average labour time *socially* required for the production of this commodity is *greater* than the labour time required under the new mode of production (the total amount of labour time contained in the constant and variable capital). His mode of production stands *above* the socially average level.

Competition generalises this and subjects it to the general law. Then the fall in the rate of profit takes place, a law which is therefore completely independent of the will of the capitalist.

CONSTANT CAPITAL. ABSOLUTE QUANTITY OF CAPITAL

In order to employ with advantage the machine which produces the motive force (hence e.g. to use the steam engine instead of the motive force provided by hands and feet), which sets in motion the actual working machines, i.e. in such a way that the [XVII-1024] total capital which is required in the new mode of production does not make the commodity more expensive instead of cheapening it, it is necessary for this motivating machine to be employed for a large number of working machines and therefore relatively [fewer] workers. And relative costs of production fall in proportion as the number of working machines increases. Hence the constant growth in absolute capital and the *growth in the minimum amount of capital* required in order to employ in the production of the commodity no more *labour time than is socially necessary*. Hence in turn a growth [in the constant capital] (since the raw material and the *matières instrumentales* form part of this), a fall in the variable capital in comparison with the quantity of capital advanced, and, above all, the necessity for an absolute[ly large] quantity of capital.

DECLINE IN THE RATE OF PROFIT

The result of the investigation is this: Firstly, the rate of surplus value does not rise in proportion to the growth in productive power or the decline in the (relative) number of workers employed. The capital does not grow in the same proportion as the productive power. Or, the rate of surplus value does not rise in the same proportion as the variable capital falls in comparison with the total amount of capital. Hence a diminution in the relative magnitude of the surplus value. Hence *a decline in the rate of profit. A constant tendency towards a decline in the same.*

It should be remarked further on this point that the law whereby the value of the commodities is determined by the labour time socially necessary for their production drives the individual

capitalist, so that he can sell his commodity *above* its social value, to curtail the labour time necessary for him exceptionally by introducing the division of labour, by employing machinery, etc.—also in spheres of production whose products enter neither directly nor indirectly into the worker's consumption or into the conditions of production of his articles of consumption—therefore also in branches of production where no development of productive power can cheapen the reproduction of labour capacity, i.e. shorten the necessary labour time and lengthen the surplus labour time. Once proof has actually been provided that these commodities can be produced more cheaply, the capitalists who work under the old conditions of production must sell them *below* the value, since the labour time they need for the production of those commodities now stands *above* the labour time socially *necessary* for their production. In a word—and this appears as an effect of competition—they too must adopt the new mode of production [XVII-1025], in which the ratio of the variable capital to the total amount of capital advanced has fallen. Here, therefore, there takes place a reduction in the value of the commodities, and a reduction in the number of workers exploited, without an increase of any kind in relative surplus value. This situation in the unproductive spheres of production—those not producing relative surplus value—is of substantial influence, if one considers the capital of the whole society, i.e. of the capitalist class, from the angle that the total amount of surplus value falls in proportion to the capital advanced—hence that the *rate of profit* falls.

It is possible that such commodities may by growing cheaper become accessible to the workers' consumption, may indeed become necessary elements in this. Their effect is never direct, and is never more than partial. They *DIVERSIFY* its magnitude without raising its value. Above all, they *DIVERSIFY* the magnitude of the capitalists' [consumption], a point which can be made for any development in productivity, but which is irrelevant in our context. They even exert an economic influence, in so far as every expansion of the sphere of exchange, every magnification of the number of stages in which the exchange value of a commodity unfolds promotes at the same time its character as commodity, hence also promotes the mode of production directed exclusively at the production of *commodities*, not of use values as such.

On the other hand, the fall in variable capital in comparison with total capital—and this fall accompanies every development of productive power—does not occur to the same degree as

productive power develops, because an ever more considerable portion of the capital enters into the value of the commodities, into the valorisation process, only in the form of annuities, and because during certain periods a constant increase takes place in the size of the capital in the production of a particular commodity without accompanying changes in the ratio of the organic components, i.e. it remains on the basis of the old mode of production. The rate of profit therefore does not diminish in the same proportion as capital grows (still less in a greater proportion), although the growth of capital—to the extent that it depends on the development of the productive forces—is continuously accompanied by a tendential fall in the rate of profit.

We therefore say, on the one hand: capital does not grow as quickly as productive power. We say, on the other hand: the rate of profit does not fall as quickly as capital grows. We say, on the one hand: variable capital does not decline as quickly in proportion to total capital, or total capital does not grow as quickly in proportion to variable capital, as productivity grows. We say, on the other hand: the surplus value created by variable capital does not grow as quickly as the variable capital falls, and does not fall as quickly as the constant capital rises. (Of the total capital.)

[XVII-1026] The absolute magnitude of surplus value declines, in comparison with the capital advanced, although the rate of surplus value rises, with the fall in variable capital, or in the relative portion of the total capital which is laid out in wages. But it declines more slowly than variable capital falls. The rate of profit therefore does not fall as quickly as the total capital grows. On the other hand, the total capital does not grow as quickly as productive power and the replacement of variable capital by constant capital which accompanies this. This would therefore imply that variable capital falls more quickly than the total capital grows. But this is incorrect, in so far as the total capital enters into the valorisation process. However, the more rapid growth in the productive power of capital means only that the growth in the rate of surplus value does not correspond to the growth in productive power.

In so far as the employment of a greater amount of constant capital really creates [greater] surplus value, the aliquot part of the total amount of capital which corresponds to a single worker must be smaller than the total amount of capital which corresponded to the number of workers he replaces. But this comparative reduction in the aliquot parts of the capital relative to the

individual workers employed by it (absolutely greater in relation to this individual, smaller in relation to the number he replaces) generally occurs—and in the further course of development always occurs—with a simultaneous increase in the absolute size of the capital, hence of the sum total of these aliquot parts. If, e.g., a capital of 400 was used for one instead of 500 for 20, these 400 could perhaps only be employed in this manner if $10,000 \times 400$ were employed. Therefore, although the conditions of labour would be cheaper for the individual worker—not compared with the previous individual worker, but with the previous 20 workers—there is a rise in the total value of the conditions of labour which must be possessed by the individual so as to carry on the productive labour process under these new conditions. I.e. the power of capital vis-à-vis labour grows, or, and this is the same thing, the worker's chance of appropriating the conditions of labour for himself is lessened. The independent position of past labour as an alien power over living labour achieves a tremendous extension of its dimensions. The good Carey overlooked this.¹²² The single spindle is cheaper, but the workshop needed to employ mechanical spindles of this kind requires a capital extraordinarily increased in size, compared with that required previously by the hand spinner.

At the start of developments in many spheres of production where the tool is transformed into a machine of labour—but has not yet developed into a system of machinery—there may indeed be a fall in the amount of capital required, if e.g. 1 worker replaces 10, the raw material remains the same, and the cost of the machine-like tool is in contrast less than the wages of the 10 workers over one year. Mr. Carey TAKES HOLD OF SUCH PHENOMENA OF THE transition from manual to machine labour TO MAKE A FOL OF HIMSELF. But these small machines are then seized upon by capital, which applies to them the principles of cooperation and the division of labour, and the principle of the [XVII-1027] proportional reduction of production costs, and finally subjects the whole workshop to a motivating machine or a natural force.

ACCUMULATION¹²³

The most direct way in which the *increase in productive power* intensifies the accumulation of capital is through the *reduction in necessary labour time* and the increase in surplus value, since

surplus value is converted from its form as income into the form of capital; this conversion in general constitutes accumulation.

The direct result of every increase in productive power is a *cheapening of the commodities* in whose sphere of production the heightening of productive power has taken place. Whether these commodities enter into the worker's means of subsistence—hence into the reproduction of labour capacity—or not, they increase in any case the amount of *use values* in which a definite magnitude of value is represented, hence a definite sum of money //the value of the substance in which the money exists remaining unchanged//, or the amount of use values representing a specific quantity of labour time—even where these commodities do not increase the magnitude of the surplus value, and the magnitude of the profit (its *value magnitude*). A *relatively* greater part of the income—the profit, the surplus value—can therefore be reconverted into capital, although the extent of the capitalist's enjoyments, or the amount of use values he consumes, values not reconverted into capital, is simultaneously increased. The more so, in that the increase of productive forces also takes place in the spheres of luxury production, and here luxury production is to be understood as including all production which does not enter either directly or indirectly into the reproduction of labour capacity. The accumulation of capital therefore grows as productive power increases, not only through the growth in the magnitude of the value which is represented in the form of profit, but through the ability, resulting from the general cheapening of commodities, to reconvert into capital an increasingly large part of income.

Disregarding this point: In so far as the increase in the productive power of the raw material and the instruments of labour, of the *constant capital*, brings about luxury production in the above sense, the same total capital absorbs more labour altogether, can employ, can realise, more labour. This is another source of the accumulation of capital, since here the absolute, if not the relative, surplus value is increased, because more days of labour are employed, exploited.

[XVII-1028] DIMINUTION OF OUTGOINGS
FOR CONSTANT CAPITAL

The *SUPPRESSION* of all precautionary measures aimed at the safety, convenience and health of the workers belongs here; e.g. in the coal mines, similarly in the factories proper, a large part of the

battle bulletins (see the half-yearly factory REPORTS) of the wounded and dead of the industrial armies arises from this source.¹²⁴ Similarly lack of space, etc.

The *devaluation* of constant capital as a result of new inventions, whereby it can be reproduced more cheaply and with better quality, more effectively, hence the labour time contained in it is no longer that socially necessary—and improvements come thick and fast particularly when new machines are first introduced—is one of the main reasons why *overwork* and the prolongation of SURPLUS labour time—OVERTIME—goes hand in hand with machinery (see the examples in Babbage¹²⁵). The circulation time within which the value of machines, etc., and other components of fixed capital is reproduced is in practice not determined by the time during which they last but by the quantity of labour time during which they serve as means of production, and in general by the dimensions, the duration, of the labour process during which they function and are used up. If the WORKMEN work 18 hours instead of 12, this gives 3 more days per week, $1\frac{1}{2}$ weeks of labour in 1 week, hence in 52 weeks $52 + \frac{52}{2} = 52 + 26 = 78$ weeks. In 5 years 390 weeks, hence well-nigh 7 years. If the OVERTIME is unpaid, and the normal SURPLUS TIME = 2 hours, 30 hours of the 3 days (36 hours) would have to be paid for. Apart from the normal surplus time, the workers thus provide 1 week free for every 2 weeks. 1 year for every 2. And thus the *valorisation* of the machine is *doubled*, and accomplished in half the time needed otherwise.¹²⁶

Where the capitalists have a monopoly, and are not compelled by competition to replace obsolete machinery, etc., by new, as for example on the railways, they therefore exclude improvements as long as possible. "*The Lancet*" for 1 March 1862 STATES that a large number of the illnesses arising from railway travel are caused by the lack of elasticity inside the carriages and in the springs which SUPPORT the carriages.

*"The inventor of any patented article usually obtains reward for his ingenuity by a royalty on the sale from persons making use of his discovery. A number of ingenious improvements adapted solely for use by railway companies are yearly patented, and the system pursued towards the inventors is that, after approval of the plan suggested, it is determined to wait until the time of the patent expires before adopting it. Thus the old stock is used up and the royalty to the patentee saved; and though a few more preventable accidents may occur, yet the public are supposed to be used to being so treated, and the only anxiety is to keep the reports out of the papers, or to soften them as much as possible."^a

^a "The Influence of Railway Travelling on Public Health", *The Lancet*, March 1, 1862, p. 233.—Ed.

[XVII-1029]¹²⁷ [MERCANTILE CAPITAL.
MONEY-DEALING CAPITAL]

CONTINUATION OF NOTEBOOK XV

Thus *mercantile capital* enters into the equalisation of surplus value to form an average profit (although it does not enter into the production of *that surplus value*), and therefore the *AVERAGE RATE OF PROFIT* already contains the deduction from surplus value which falls to *MERCANTILE capital*, hence the *MERCANTILE DEDUCTION* from the profit of productive capital.

		<i>Surplus value</i>
E.g. <i>EXTRACTIVE capital</i>	200	30
<i>AGRICULTURAL capital</i>	300	45
<i>MANUFACTURING capital</i>	200	25
<i>MERCANTILE capital</i>	100	
	800	100

If the mercantile capital enters here into the distribution of the surplus value, the rate of profit= $12\frac{1}{2}\%$. If it does not, the rate= $14\frac{2}{7}\%$. The mercantile capital of 100 must turn over 8 times in order to buy and sell 800 (for the value of the commodity=700 (cost price)+100 profit=800). And therefore, in order that it may also come to $14\frac{2}{7}\%$, it must in every turnover give rise to an eighth of $14\frac{2}{7}\%$; or $1+\frac{3}{4}+\frac{1}{28}=1+\frac{11}{14}\%$. The 800 would lose $14\frac{2}{7}\%$. There would therefore remain $785\frac{5}{7}$. And the real profit made by the capital of 700 would= $85\frac{5}{7}=12\frac{12}{49}\%$. Less than if the mercantile capital enters into the distribution. Because in fact the mercantile capital would make $14\frac{2}{7}\%$, whereas the others would

be reduced to a quota which emerges if $\frac{1}{8}$ of the capital makes $14\frac{2}{7}\%$. In fact, however, if a mercantile capital of 100 is necessary to turn over $781\frac{1}{2}$ (at $12\frac{1}{2}\%$), a larger MERCANTILE CAPITAL would be necessary to turn over 800. $102\frac{574}{1,563}$ would be necessary. More industrial capital would have to be converted into mercantile capital. The amount of surplus value would thereby be lessened, hence the rate of profit; but the mercantile rate of profit would always remain somewhat higher than the industrial rate.

If the CALICO man has realised in the £1,000 for which he sells the 12,000 yards the whole production process of the 12,000, it initially appears to be no concern of his if the MERCHANT adds e.g. 10% to the price. But, first, once he buys yarn, machine, coal, etc., he has for his part to pay for the addition to the price. If the calico enters into the worker's consumption, his wages rise. In both cases the calico man's rate of profit falls. If his product enters into the constant capital of another capital, this is the same thing for the equalisation of the rate of profit as if it entered into his own. Furthermore, the nominal increase in the rate of profit brings with it an uncompensated increase in the rate of interest. If the product enters into the consumption of the non-worker, his capacity for accumulation, etc., is reduced.

[XVII-1030] But this way of conceiving the matter is wholly incorrect.

Firstly, it contradicts the historical FACT that mercantile capital, SO FAR FROM BEING EXCLUDED OF PARTICIPATING IN THE REGULATION OF THE AVERAGE PROFIT, rather, as the first free form of capital, is the FIRST TO ENTER INTO THAT CREATION. Mercantile profit originally determines the profit of PRODUCTIVE CAPITAL. Only when capitalist production has penetrated fully, and the producer is a MERE MERCHANT, is the MERCANTILE PROFIT REDUCED TO THE ALIQUOT PART OF THE SURPLUS VALUE FALLING DUE TO IT IN REGARD TO THE ALIQUOT PART IT FORMS OF THE GENERAL CAPITAL.

Secondly, it altogether contradicts the concept of a GENERAL RATE OF PROFIT, which is entirely indifferent towards the *particular function* of the capital WHICH PARTICIPATES IN THE PARTITION OF THE GENERAL MASS OF SURPLUS VALUE, and is indifferent towards THE DEGREE IN WHICH IT CONCURRED IN ITS PRODUCTION.

It can therefore be seen that even MERCANTILE CAPITAL, once it appears as a mere element of capitalist production, is subsumed under it, does not contradict the law that the sum total of the AVERAGE PRICES of the commodities, i.e. the sum of their production prices, = the sum of their values, and the sum of the *profits* (INTEREST and RENT INCLUDED) = the sum of the surplus value or the unpaid SURPLUS labour. It is only that the mercantile capital shares the

profit with the PRODUCTIVE capital, while the latter directly winks it out of the worker in the form of surplus value.

The magnitude of the deduction profit suffers through MERCANTILE profit—i.e. the magnitude of the difference between the BUYING PRICE of the MERCHANT (the SELLING PRICE of the PRODUCER) and the SELLING PRICE of the MERCHANT (the BUYING PRICE of the CONSUMER), hence the apparent “extra charge” the merchant makes upon the price of the individual commodity—is determined, since the general rate of profit is already given, by the AVERAGE NUMBER OF TURNS, REVOLUTIONS of MERCANTILE CAPITAL, which is in turn expressed in the proportion in which the MERCANTILE CAPITAL stands to the total capital. For e.g. 100 to realise a profit of 20%, the merchant must add 5% to each sum of commodities of a price of £100 if his capital revolves 4 times, 4% if it revolves 5 times, 2% if it revolves 10 times. The difference between the BUYING PRICE and the SELLING PRICE of the MERCHANT is the smaller, the greater the proportion of the part of capital directly employed in production.

There now remains the question: Since the MERCHANT himself may employ labour, apart from his capital // to the extent that his own labour enters here, it forms a part of WAGES, as with industrial capital //, does he create surplus value through this labour? Does it originate directly as a part of the profit he CHARGES on account of the function of his own capital? What is his relation to *his own* wage labourers (*commis*,^a etc.)?

Just as productive capital makes a profit by selling labour, contained in the commodity, which it has not paid for, so does *mercantile capital* do the same by paying productive capital not the *whole of the unpaid labour* contained in the commodity (in the commodity as product of that capital as an aliquot part of the total capital), but only a part of it, [and pocketing] the *unpaid* part which is still, for mercantile capital, contained within the commodity.¹²⁸ Just as [profit] appears to industrial capital as an extra, a supplement to the cost, the part of the value it has not laid out in production, not advanced, so for commercial capital does the purchase price of the commodity, and the supplement to the price, the difference between SELLING and BUYING PRICE, appear as something independent of the production process and the value of the commodity itself, although it is moderate *in degree* and is kept within bounds by the laws of competition.

If we therefore take the last price—the MERCANTILE PRICE—as distinct from the factory price, it is only in the former that the

^a Shop assistants.—Ed.

production price of the commodity is completely expressed.

The merchant [sells]—if we leave aside the intermediate transactions within the merchant estate itself, which are of no interest at all here—1) to the industrial consumer, i.e. to productive capital. Here the mercantile profit enters as a cost into production. 2) He sells to the individual consumers; to the extent that he is himself one of these, this must be regarded as the direct appropriation of a part of his profit *sub specie* use value; [XVII-1031] what he himself consumes in this way is a deduction from the amount of the commodity in which the total surplus value is realised; when he sells to the industrial capitalist—profit and interest—this appears under both categories directly as a deduction from surplus value; what he sells to the workers is sale to variable capital. Finally he sells to the recipient of rent.

The merchant lessens the *number of buyers* for productive capital. The merchant lessens *the number of sellers* for the consumer. Towards the industrialist he concentrates the consumers into fewer persons, towards the consumer he concentrates the producers into fewer persons. Hence a great curtailment of this exchange process or of the loss of time on labour, etc., conditioned by mere circulation. The function of pure merchants' capital, separated from the previously mentioned continuation of productive operations in the circulation process, such as transportation, etc.,^a can be reduced simply to buying and selling. With developed capitalist production and a developed division of labour we also find merchants' capital functioning in a certain sphere in its pure form, separated from its entanglement with other operations. E.g. forwarding and transport only concern the merchant in so far as they enter into the BUYING PRICE of the commodity, as ITEMS among the costs constituting its price. Similarly rent for WAREHOUSING, which falls to the share of another capital, that invested in DOCKS, etc. Finally, RETAILING does not fall within the province of merchants' capital, but of another section of merchants.

Merely buying and selling involves the MERCHANT in COSTS over and above the capital directly advanced, hence existing in the form of either money capital or commodity capital; namely the part of capital which really belongs to him. Firstly buying and selling themselves; the time *this* kind of labour costs (function); writing, calculating, accounting, travel costs, cost of correspondence, etc. And with bigger capital the clerks, the assistants who work for the merchant, finally HIS OFFICE. Whatever of his own labour goes into

^a See this volume, pp. 38-48.—Ed.

the shit can be deducted from profit, just as with every other kind of capital. The outlays this causes form a second part of the capital, which is not directly INVESTED IN WARES. They are costs incurred in buying and selling over and above the part of capital which is directly involved in this function. And the merchant adds to this part of capital the same profit as he adds to the other one, or the price of the commodity must not only replace these costs for him, but yield a profit on them. The whole thing therefore enters as an element into the surcharge the merchant adds to the price of the commodity, or into the excess of the SELLING PRICE OVER the BUYING PRICE. This excess therefore makes good a part of the costs which derive from the operation of BUYING and SELLING itself, and which are for the merchant as it were included in the BUYING PRICE of the commodity, although he does not have to pay them to the seller but must himself advance them.

These circulation costs—or costs of pure merchants' capital—can be divided up into an insignificant part, which has to do with the consumption of *commodities* themselves, namely e.g. travel costs, POSTAGE, paper, ink, OFFICE, etc.; and a more important part, which consists in the *payment* of *alien labour*, which is formally *wage labour*, SINCE it is exchanged directly for capital, and is only exchanged for it in the reproduction process of capital. Both sorts of circulation costs occur in part in productive capital itself (its mercantile or office costs); *since circulation is after all its own process*. With merchants' capital, in contrast, these costs occur as independent. In the former case the OFFICE stands alongside the factory, mine, FARM, etc. In the latter case the OFFICE is there as such with its outgoings.

These costs are not incurred in the production of the commodity itself, i.e. they are not necessary in the labour process in order to produce its *use value*. They are rather incurred in or for the circulation of commodities; they are necessary in order to *realise* them as *value*. They are necessary for their reproduction process. The commodity is a unity of exchange value and use value; but it is use value whose [XVII-1032] exchange value exists only ideally as price and must first be realised. In so far as this realisation gives rise to costs, those costs enter into the reproduction costs of the commodity, although not into its direct production cost. These reproduction costs also occur without capitalist production, as soon as production becomes commodity production in general. The circulation process is not only the realisation of *surplus value*, it is rather only the latter in so far as it is simultaneously and above all the realising of *value*.

Since merchants' capital is absolutely nothing but a *form* of productive capital functioning in the circulation process *which has achieved an independent position*, all questions relating to it must be solved by posing the problem first in the form in which those phenomena peculiar to MERCANTILE capital do not yet appear independently, but rather as directly linked, in direct connection, with productive capital. AS OFFICE in contrast to *factory*, productive capital functions continuously in the circulation process. We therefore have first to consider the OFFICE and its costs, and their relation to the value and surplus value of commodities, where the office appears as the side of productive capital itself which is turned to circulation.

OFFICE COSTS can be reduced *d'abord*^a to the rent of accommodation, which is itself in turn composed of ground rent, interest for the capital fixed in the house, and finally the annual depreciation in replacement of that capital.

The rent is merely a part of the surplus value, as is the interest. The capitalist does not pocket them himself; he pays them to another capitalist. That does not change anything in the situation. They appear to him as costs. They are, nonetheless, deductions from the surplus value created by the worker. This part of the costs of circulation can therefore be reduced to the fact that productive capital has to pay a part of the surplus value, in the form of house rent, to another capitalist and to the LANDLORD.

Only a part of the OFFICE rent remains as a real advance, the depreciation of the house which is to be replaced annually. Now come the office costs, which can all be reduced to paper, ink, pens, STAMPS and the salaries of clerks, travelling salesmen, etc. The fixed capital needed by these fellows, apart from the raw material of the paper, etc., comes down to the depreciation of the house (this part of the rent of the accommodation) and the few miserable sticks of furniture they need to set up an office. These are costs which the productive capitalist must cover, pay cash for, to a greater or lesser extent, depending on the particular nature of his business; they form a real capital advance, and are not concealed surplus value which appears as a cost to the person who must pay it and as interest or rent, i.e. appears in the form of surplus value, to the other person, who pockets it.

In calculating the rate of profit the capitalist counts this part of the capital advanced just as much as he does the part advanced in raw material, machines, etc. These are values which are consumed,

^a First.—Ed.

and must be consumed, not to produce the commodity itself, i.e. the use value of the commodity, but to make it circulate as a commodity, and it could not be reproduced without them; since it must be converted into money, must have realised its value, before its reproduction. They form part of the *faux frais*^a of production, i.e. they are costs of reproduction which are not costs incurred in the manufacture of the use value of the commodities, but derive instead from their economic form as commodity. Relatively, these costs are always very insignificant as compared with the real outlays for production, and they are the more insignificant the larger they appear; because they are only noticeable where a big capital is set in motion, in proportion to which they are visible—on account of their concentration—but relatively weaker than in the case of a small capital. Yet we are not concerned here with the quantity, but with their qualitative determination.

In any case, these outlays have the peculiarity, which distinguishes them from the actual costs of production, that whereas the rate of profit (here=rate of surplus value, as we disregard the adjustment) depends in the best case on the costs of production, here inversely the costs stand in proportion to the amount of profit. If the business is small, the amount of profit is small, so the office costs are minimal, since the producer can take care of this almost alone. If the business is large, the amount of profit is large, so office costs increase and occasion a certain degree of division of labour. The great extent to which these costs are associated with the profit is shown e.g. in the fact that if they increase, a part of the salary is paid by giving a percentage share in that profit. In so far as the salary assumes this form, this part of the office costs is reduced to a deduction from the profit of the capitalists, a deduction which nevertheless leaves him the AVERAGE RATE, because he works under more favourable conditions than the AVERAGE CONDITIONS OF PRODUCTION.

Hence this is also to be eliminated from the question.

In any case, these office costs—in so far as they do not consist of the labour of the capitalist himself, in so far as they have to be paid and require advances—enter into those advances. They enter into the price of the commodity, and, [XVII-1033] for the commodity to be able to be reproduced, a part of its value must be set aside (hence a part of the commodity itself must be exchanged) for the OFFICE, pens, ink, paper, salaries of the clerks, etc. Since these expenses add nothing to the use value of the commodity, are

^a Overhead costs.—*Ed.*

expenses which do not enter into the direct production process, the capitalist seeks to restrict them as much as possible. In so far as *that part of the value* of the commodity is realised which constitutes wages, these expenses belong to the conditions of production of the *commodity*-producing labour itself (even if no capitalist were there), they belong therefore to the conditions of reproduction of the salary, [and] to the conditions of labour. A part of the annual labour of the country is therefore employed in the reproduction of these conditions. The worker must therefore reproduce them as *capital*, if not as profit as well. In so far as they are required to reproduce the *part of the value* of the commodities which represents surplus value, they have nothing to do with the worker as such. UNDER ALL CIRCUMSTANCES, as expenses which have always to be reproduced, they reduce the *rate of profit* and the *amount of profit* in so far as this part of capital cannot be laid out in, raw material, wages, etc.

The only question which opens up here is this: The clerks and other members of the office are formally wage labourers. They sell their labour capacity directly to capital. If the productive capitalist now makes a profit, does he extract surplus value directly from this sort of wage labourer or not? Does their labour enter into the value of the commodity, and how? Here, *notabene*, it is not a matter of OVERLOOKERS, MANAGERS, who are employed in the act of production in a directing role, but of purely mercantile workers, who are only concerned with the realisation of the value of the commodity, and the functional labours that are involved in the circulation process of the commodity.

There is, at the outset, an analogy between the clerks and the wage labourers: If e.g. a division of labour is introduced among them, the same number will perform more labour. But they receive their wages as individuals. The wage bears no relation to the productivity of their labour. The social character of their labour appears to them as rather a productive power of capital and a form belonging to capital itself.

Further: The more intensive or extensive their working day, the fewer of them does the capitalist need to retain. The higher his *rate of profit* on a given aliquot part of capital, e.g. 100, the lower is this ITEM of costs, and the more, *pro rata*, is the capital advanced lessened in proportion to the surplus value. The greater is then the *amount of profit*, since a proportionately greater part of the capital can be employed directly in production.

Just as labour is involved in direct *production*, so is the clerk in the direct *reproduction* of alien wealth. His labour, like that of the

worker, is only a means for the reproduction of capital, as the power which commands him, and at the same time as the worker creates surplus value, the clerk is employed in helping its realisation, not for himself, but for capital.

But there always remains this difference between these mercantile workers and the wage labourers engaged in the production process: The more labour the capitalist extracts from the latter, the greater his surplus value. The more unpaid labour they perform, the more saleable, but unpaid, value they produce. And the greater the number of workers employed at a given stage of production, the greater the amount of surplus value. Surplus value can in general only be created by labour, whose realisation depends on its quantity, irrespective of whether this labour is, or is not, paid for. With the mercantile wage labourers, on the other hand, the value they add to the commodity is never greater than what they themselves cost; it depends not on their labour but on the value of their labour capacity. The capitalist can only extract surplus value from them in so far as he pays their labour capacity at less than its value, but reckons it among the ITEMS of cost at its value. This case does not belong here, where we always presuppose that full values are paid. The less the capitalist pays the MERCANTILE worker, i.e. the more he has him work for the same price, the *smaller* his costs. I.e. the less it costs him to realise the surplus value. But the latter is not itself affected by this (only indirectly, in so far as a large part of the capital can be invested in productive expenditure). The increase in the number of these workers as such therefore occurs only if there is more value and surplus value to be realised, hence more of this kind of labour is required. It is always a result, never a cause of the increase of surplus value.

The mercantile worker has something else in common with the wage labourer proper: What is paid to him is the value—the cost of reproduction—of his specific labour capacity, which stands higher than that of the wage labourer. (Incidentally, this depends very much on competition, and becomes ever cheaper WITH THE PROGRESS OF CIVILISATION.) With the development of capitalist production—and therefore of civilisation—this labour capacity depreciates. Its cost of reproduction becomes cheaper: 1) because of the emergence of the division of labour, which means that [XVII-1034] a more one-sided capacity needs to be produced, and part of the cost of this production is not borne by the capitalist since, like the aptitudes of the worker, this capacity develops by the exercise of the function itself, and develops the more rapidly the

more one-sided the function becomes with the division of labour; 2) because the preliminary training, the acquisition of the knowledge of reading, writing, arithmetic and commercial matters in general, language skills, etc., becomes ever quicker with the progress of science, and can be reproduced more easily, more universally and more cheaply, the more the capitalist mode of production predominates, and therefore science and methods of teaching are directed to practical ends; 3) [because of] the introduction of universal public education, which permits the recruitment of this kind of worker from classes which were previously excluded, and are accustomed to an inferior living standard. The development of capitalist production therefore devalues the labour capacity of these people, their salaries, while their capacity for work increases; partly through better preliminary training, and superior skill resulting from the increase in the division of labour and the tradition handed down from the past. The auxiliary means of this labour, such as all the necessary books on commercial arithmetic, etc., and the art of book-keeping, etc., are also perfected.

But the labour time these people have to work stands in no connection with the labour time required for the reproduction of their labour capacity. All the labour they perform over and above this is unpaid labour time, which capital appropriates without an equivalent. Its costs would otherwise be very much increased, if it only received an equivalent in EXCHANGE for the value of this labour capacity which it pays. Its rate of profit would be very much reduced. But whatever the relation of the unpaid to the paid labour time which this kind of worker provides for capital, this unpaid labour never increases the value of the commodity, and it therefore does not add any surplus value to it. All it does is lessen the cost of realising the value, hence lessen the ratio of the capital advanced to the surplus value, hence increase the rate of profit in the same proportion as it is not paid and no equivalent for it enters into the costs of production. It never adds to the value of the commodity more than its own value, hence never more than its cost, however far that cost may sink below the labour time for which the labour is active. If the capitalist could reduce this labour to 0, the rate of profit and the amount of profit would be higher to a corresponding degree. But if, on the other hand, the (actual) wage labour were reduced to 0, profit would vanish and, with surplus value, capital itself.

The side of capital turned towards circulation therefore appears double to the money capital, which must always buy. This achieves

an independent position in the shape of *MERCANTILE* capital, as capital which is always in the state of circulation, and which both alternately assumes the forms of commodity and of money and also, although in different proportions at different times, always exists simultaneously in both forms.

But productive capital not only alternately assumes the forms of commodity and money in the circulation process, its function thus appearing as that of selling and buying; not only must it always, for the sake of the continuity of the production process, be represented IN A CERTAIN AMOUNT OF CIRCULATING CAPITAL, CONSISTING IN MONEY. Buying and selling requires labour and this labour gives rise to costs, circulation costs. These are represented, alongside the productive workshop, in the *OFFICE* and its costs, which can be reduced partly to the consumption of the commodities needed to perform this labour of circulation, partly to the wages of the workers who are only employed in functions which arise from the circulation process of the commodity, partly in the realisation of its value, partly in the reconversion of the realised value into conditions of production, or, to look at this purely formally, in selling and buying. The commodities are sold to realise their value, they are bought (by the productive capitalist) for the purpose of reproduction, of starting industrial consumption or renewing it. This part of the capital advanced does not exist with the *FARMER*, e.g.; it is barely visible with the small industrialist, it attains a *PALPABLE* form in large-scale industry, but, like all the determinations which are appropriate to productive capital as circulating capital, it appears independently with *MERCANTILE CAPITAL*. Besides the part of mercantile capital which functions as commodity or money, another part is advanced in *OFFICE COSTS*, and in the wages of its *IN* and *OUT OF DOOR* FUNCTIONARIES. This is the only workshop of *MERCANTILE* capital. The part of capital employed in this way appears much larger with the big *MERCHANT* than with the industrialist, because apart from the *MERCANTILE OFFICES* proper which are associated with every productive workshop, the part of productive capital which would have to be employed in this manner by the whole class of productive capitalists is concentrated in the hands of individual *MERCHANTS*, who, just as they attend to the continuation of the function of circulation, attend also to the continuation of the costs of circulation which grows out of this continuation. What is true of the other part of *MERCANTILE CAPITAL* is true of this one. Every individual mercantile capital functions for A LOT OF PRODUCTIVE CAPITALS, and the whole of the mercantile capital laid out in this way replaces a capital which in this form was

employed by the whole [XVII-1035] PRODUCTIVE CLASS, and it replaces it with a smaller amount, since the total amount of these circulation costs is lessened by division and concentration of labour. It is precisely in this way that it increases the capital employed in production itself and thereby indirectly the productive power and the quantity of the productive capital.

In so far as these costs enter into the function of MERCANTILE CAPITAL, they naturally do not form, as costs of this kind, a part of its profit. As we saw directly with productive capital, they enter into the price of the commodity as capital advanced, costs of production. In so far as these costs of realising the price (selling) or converting value into commodity (buying)—these costs of circulation—enter into the difference between the MERCANTILE SELLING PRICE and the BUYING PRICE, this part of the difference does not form a profit, and it is not a part of the surplus value, but rather a mere reproduction of capital advanced. So that if we are speaking of mercantile profit, this part of the merchant's EXPENSES, OR THIS part of the SELLING PRICE, OR RATHER the difference between SELLING PRICE and BUYING PRICE, must be deducted.

But there is a considerable difference between the relation of MERCANTILE capital to its MERCANTILE wage labourers—and the same relation between productive capital and its MERCANTILE clerks, etc.

It goes without saying, first of all, that just as the function of MERCANTILE CAPITAL creates absolutely no surplus value (the same is true of the MERCANTILE part of PRODUCTIVE capital), the workers employed by it create no surplus value either. The costs of circulation always increase the capital outlay, and always reduce the rate of profit. The commodities which are consumed in circulation are withdrawn as much from industrial as from individual consumption, and the labour which is performed there is always a deduction from productive labour.

The relation of MERCANTILE CAPITAL to surplus value is different from the relation of *productive capital*. The former appropriates a part of the surplus value, TRANSFERS PART OF IT TO ITSELF. The latter produces it by direct exploitation of labour, direct appropriation of alien labour. The costs of circulation *appear* to productive capital as expenses; they appear to mercantile capital as the source of *its profit*, which—presupposing the general rate of profit—is in proportion to the magnitude of the costs of circulation. For mercantile capital, therefore, INVESTMENT in these costs of circulation is productive INVESTMENT. Hence the MERCANTILE LABOUR it buys is also, for it, directly productive. It is only through its function of realising value that mercantile capital functions as capital in the

reproduction process. The amount of profit it makes depends on the amount of capital it can employ in this process, and the greater the unpaid labour of the clerks, the more of this capital can it employ (the more capital can it employ in buying and selling). For the most part, however, it has its workers perform the function itself, through which its capital acts as reproductive capital (not merely interest-bearing capital, for example), but it pays them as labour capacity. Although the *unpaid* labour of these clerks does not create surplus value, any more than mercantile capital does in general, it does create *for it an appropriation of surplus value*, which for the particular capital is the same thing. It is therefore a source of profit for it. Mercantile business could otherwise never be conducted on a large scale—in capitalist fashion. The relation of the MERCHANT to his “clerks, etc.” is therefore much more analogous to the relation of productive capital to the productive wage labourer than the relation of the clerks in the MERCANTILE OFFICES attached to the factory, etc., although the exploitation of the MERCANTILE worker himself is the same in both cases.

Capital employed in *money-dealing* is a particular kind of commercial capital alongside capital employed in *commodity-dealing*. The one is a development of *commodity capital*, the other a *development of money capital*, or the one is a development of capital as commodity, the other of capital as money. Both are merely *forms and modes of existence of productive capital* present in the circulation process *which have attained an independent role*. Just as mercantile capital *exists* before productive capital, as the first free form of capital, so does money-dealing and capital employed therein (MONEYED CAPITAL, interest-bearing capital, also belongs here) presuppose only *merchants' capital* [XVII-1036]; it therefore equally exists as a form of capital *which precedes* productive capital.

Mercantile capital—within the capitalist reproduction process—is absolutely nothing but on the one hand productive capital *in general* in its circulation $C—M—C$ (which however simultaneously assumes a shape of its own, because the commodity here is capital: $M—C' C''—M$), in its function of buying and selling—or in the movement of the complete metamorphosis it passes through in its sphere of circulation, and on the other hand a part of productive capital which has been separated off from it, *has become independent*, and for which the sphere of circulation is the sphere of production peculiar to it. The situation is exactly the same with money-dealing capital.

Circulating capital (and all capital circulates, even fixed capital,

to the extent that its depreciation enters into the commodity as a value component) is precipitated as money when it RETURNS from a circuit or appears as the starting point of a circuit. For a sum of value which must first be converted into capital, money appears as a starting point in isolation. This is only the case for *newly invested capital*. But for capital already involved in the process, and therefore IN A CONTINUAL COURSE OF REPRODUCTION, *both the concluding point and the starting point appear only as points of transit*. In so far as capital has to pass through $C—M—C'$ between its stay in the sphere of production and its return to the latter, the M is in fact only the result of a phase of the metamorphosis, to become after that the starting-point for the opposite phase which complements it. Capital, however, simultaneously passes through the acts $C—M$ and $M—C$. I.e. not only is there a capital in the stage $M—C$, while the other is in the stage $C—M$, but the same capital is *simultaneously* buying constantly and selling constantly, owing to the continuity of the production process. Capital is continuously to be found in both stages *simultaneously*. While a part of it is converted into money, to be reconverted into commodities, the other part is simultaneously converted into commodities, to be reconverted into money. Whether the money functions here as means of circulation or means of payment—in the second case so that the balances are paid, in the first case so that the value is always present in a dual form, at one pole as commodity, at the other as money—depends on the form of commodity exchange itself. But in both cases the capitalist has constantly to pay out money (and to *many people*; the productive capitalist has to pay many merchants, the merchant has to pay many capitalists, etc.) in order constantly to receive money in payment. This merely *technical operation* of paying money and collecting money in itself constitutes labour, which, in so far as money functions as means of payment, makes acts of account settling necessary, after the balance has been calculated. This labour is a *cost of circulation*. A definite part of the capital must constantly be available as hoard (as a coin reserve, i.e. a reserve of means of purchase and a fund for payment, a reserve for payments) and a part of the capital constantly returns in this form. This makes necessary, apart from payment and collection, the *keeping in safe custody* of this hoard, which is in turn a separate operation. It is therefore in fact the constant dissolution of the hoard into means of circulation and means of payment, and its rebuilding as money obtained through sale or payment fallen due—this constant movement of the part of capital which constantly exists as money—separated from the

function itself, this *technical* movement, which gives rise to particular labour and costs. *Circulation costs*. It is a result of the division of labour that these technical operations, which flow from the functions of capital, are allotted to definite functionaries on behalf of the whole capitalist class, and that these operations are concentrated in their hands. Here, as with merchants' capital, there is division of labour in a dual sense. It becomes a particular operation, a particular business, and because it becomes a particular business, performed for the whole class, it is concentrated, carried out on a large scale, and a division of labour takes place within it, both through its splitting into different branches which are independent of each other, and through the development of the workshop within these branches. A part of the productive capital involved in this movement is separated off from productive capital, and is employed only in these operations—first the storing of the money, then its payment, collection, settlement of balances, etc.—which are separate from the acts necessitating these technical operations. This is [XVII-1037] productive capital which has attained an independent role in money dealing.

If we now consider the reproduction process of a single capital, we see that the realised surplus value returns in the form of money. The profit is in part expended as income, and it must in part be reconverted into capital. The reproduction process is not only a simple reproduction process but a process of accumulation, reproduction on an increased scale. This manifests itself in part as *accumulation of money*. Whether the individual capitalist can immediately reconvert into capital his profit which exists in the form of money, i.e. utilise it within his reproduction process, depends 1) on the state of the market, which does not perhaps permit the extension of a particular business at that moment; 2) also on the organic composition of his productive capital; since not every sum can be converted immediately into productive capital, this conversion depending in part on the technological conditions (I may have enough money to extend a factory, not enough to add a new one), in part on the magnitude of the sum, which must be large enough to be divided into variable and constant capital in the appropriate proportions. As long as this is not possible, the money is a hoard lying idle—now capital lying idle. The job of storing it falls to the money dealer. This is an operation of the money dealer which arises from a moment of the capitalist process of accumulation, which initially presents itself as *accumulation of money* (in part at least). As long as the capitalist cannot invest the money in his own business, he endeavours to

valorise this idle hoard as *interest-bearing* capital, to lend it out. The money dealer does this for the whole class; *lending and borrowing*, like paying and collecting money, become a particular function of capital employed in money dealing—a function which proceeds from the reproduction process of capital itself. What previously appeared as a *concentration* of the hoard reservoir, now appears as simultaneously a concentration of *money* loanable as capital.

The same is true of the capitalist who has brought his gains into safety but wants to consume them not as money but as capital, i.e. wants to live on interest.

Similarly for all *productive capitalists* themselves—for the part of the profit they expend as income, yet NOT AT ONCE, but *au fur et à mesure*.^a This consumption fund (the actual *coin reserve*) can be lent out as capital in the interval, and it must under all circumstances be accumulated as money IN CERTAIN DIMENSIONS. The same holds for the *recipient of rent* who wants, apart from this, to consume a part of his income as interest-bearing capital. Ditto for all unproductive workers whose income is in part capitalised, in part consumed *au fur et à mesure*, but received in larger portions at certain intervals.

All this is concentrated as loan capital with the money dealer, who apart from this himself lends money and must keep READY definite funds, in order always to be able to pay. The function of his particular capital is only the independent form of the processes which emerge from the reproduction process of capital (conversion of profit into capital), in part from the form of circulation; the fact that newly arisen capital steps forth in the form of money. The money dealer lends and borrows for the whole class, or rather he performs the lending and borrowing of the whole class.

Exchange rate business and *exchange business* proceed from the function of money as world money; the difference between the national currencies. Finally the *BULLION trade*; in *part the settlement of international payments*, therefore the movement back and forth of money capital (here capital, because it is a form of capital); in part the procurement of fresh supplies of *gold and silver* from their sources of production. The latter is in fact brought about by foreign trade. But the *technical aspect*, the BULLION RETURN, is taken over by the money dealer. Hoard formation—usurers' capital—the exchange of international coins—the BULLION trade (the ENGLISH GOLDSMITHS) form the foundations of the independent development

^a Gradually.—Ed.

of money dealing. It is specially connected with dealing in commodities [XVII-1038], since only merchants' capital—before the development of capitalist production—constantly buys and sells on a mass scale, lends and borrows, pays and collects, in short constantly has its wealth chiefly in the form of money.¹²⁹

Only with the *credit system* does MONIED CAPITAL and money dealing receive the form which emerges from the capitalist mode of production itself.

The profit of *money dealing* does not offer the same difficulty as that of mercantile capital. With the latter the difficulty arises from the fact that the profit originates through an addition to the prices of the commodities, and the commodity is sold dearer than it is bought; which appears to contradict the determination of the price of production and ultimately the value of the commodity by labour time. With the former, in contrast, the commodity as such remains entirely outside the picture, and by far the greater part of the money dealer's profit consists of the interest for which he lends capital, whereas he borrows it for nothing; or of the excess of the interest at which he lends it over the interest at which he borrows it. A part of the surplus value itself therefore directly appears as the source of his profit, and his profit merely appears as a share in that surplus value.

We shall be able to go into this in more detail in the section on capital as *credit*,⁶⁷ but this does not form part of our task at present.

EPISODE. *REFLUX* MOVEMENTS OF MONEY
IN CAPITALIST REPRODUCTION

Let us take first the circulation between productive capitalist and SHOPKEEPER and worker. Let the SHOPKEEPER represent all the sellers of the means of subsistence which enter into the worker's consumption.

Money is paid as wages by the capitalist to the worker; the worker gives out this money as means of circulation, buys commodities from the SHOPKEEPER with it; with the money the SHOPKEEPER replaces his STOCK from the capitalist, who we shall assume produces means of subsistence.

In so far as the money is exchanged on the part of the capitalist for labour, it is money which is converted into productive capital. It is the first element (disregarding the part of the money which is converted into raw material, etc.) in $M-C-M$, as form of the reproduction process of capital.

Furthermore, as far as this capitalist is concerned, the money functions as means of purchase, means of circulation. $C-M-C(L'^a)$. (He has converted the commodity into money and now converts this money into labour, another commodity.)

As far as the worker is concerned, the money is simply coin. L (his commodity)— $M-C$ (the commodity he buys from the SHOPKEEPER); a mere money form, which his commodity assumes, to be subsequently converted into means of subsistence.

With the SHOPKEEPER, the money functions initially as means of circulation. $C-M-C$. He is constantly selling commodities and buying new commodities with the money. But CONSIDERING that he bought the commodity before he sold it, his process presents itself

^a Labour capacity.—Ed.

as $M—C—M'$ $M'—C$, etc. And this REFLUX represents here the capitalist movement.

This money in the hands of the capitalist in the act $M—L$ (labour¹³⁰ as commodity), disregarding the fact that it is means of circulation (means of purchase), represents capital, but only a capital in the course of changing its form. It is converted from the form of money into the form of labour, from the form of money into that of the commodity. This is a change of form which capital undergoes in the reproduction process, but it does not express a *valorisation* of capital; for the money the capitalist pays=the *value* of the labour capacity he buys. No *surplus value* arises out of this process, considered in itself. Surplus value only arises from the industrial consumption of the commodity.

For the worker the money, as being merely coin, merely represents *income*. This is always the case where the money merely represents the simple metamorphosis $C—M—C$; the conversion of the commodity into money, so that it can be converted into means of subsistence. In fact exchange of the commodity for means of subsistence. Mr. Tooke calls money that is spent in this manner *income*, because it must in fact derive from an income, wages, profit—interest or rent.^a

[XVII-1039] Lastly, if we consider the SHOPKEEPER, for him the money is not only the form of his capital but its REFLUX movement, it is the movement of his capital. $M—C—M'$, money which returns increased from circulation, self-valorising value. We shall consider this point presently.

However, it is clear even now that nothing can be more incorrect than Tooke's direct identification of the different determinations of the form of money with the question whether they represent capital or income. Thus for example money as means of circulation=income, but when it is not expended as income it is *capital*.

D'abord,^b money appears as *means of circulation* in all 3 processes. For the capitalist $C—M—L'$. For the worker $L—M—C$. For the SHOPKEEPER $C—M—C'$. The same money functions here further as a mere change in the form of capital, as income, as capital+income; i.e. as capital which constitutes capital in relation to itself.

If we consider the whole process of the productive capitalist, money is merely a form of his capital, a form which he changes

^a Th. Tooke, *An Inquiry into the Currency Principle...*, London, 1844, pp. 34, 36.¹³¹—*Ed.*

^b To begin with.—*Ed.*

through his exchange with labour; considered from the point of view of the content, this is a reversion into conditions of production. The same money in the worker's hands becomes income and circulates as income. The same money returning into the hands of the *épiciér*^a=capital+profit, and its *departure* from the shopkeeper in renewed purchases from the productive capitalist is a mere change in the form of his capital, which denotes a moment in the process of reproduction. It is therefore ridiculous to say that this money is income or capital or ANYTHING OF THE SORT.

Let us assume that the productive capitalist has bought labour capacity for £100; the workers buy with this money £100 of commodities (which the SHOPKEEPER has bought from the capitalist) and they thus return his money to him. This REFLUX expresses for him the concluding process of a part of his capital. $M-C-M'$. He has withdrawn more money from circulation than he threw in. If the profit=10%, the commodities he sold for 100 cost him $90^{10/11}$. ($9^{1/11}$ profit on the 100.) He sells the commodities to the workers for 100 and buys them from the capitalist for $90^{10/11}$. But in fact in his sale to the SHOPKEEPER the capitalist does not realise the whole value of these commodities—the production price of these commodities, but leaves the *épiciér* to realise $1/11$ of the value. The workers therefore obtain commodities the real production price of which=100. They obtain an equivalent for their 100. And when the *épiciér* makes his profit on the commodities he is merely participating in the capitalist's profit.

In examining how the different parts of the total capital are exchanged for each other,¹³² how their values are realised one through the other, and how their use values replace each other, we saw that if we subsume the *épiciér* under the productive capitalist, or entirely leave him aside, the transaction presents itself like this: The capitalist pays £100 for the labour of the workers: the latter buy back from him £100 worth of commodities. Thus the £100 flow back to him. But in this transaction the capitalist gains nothing. Instead of directly paying the workers commodities to the value of £100, he pays them a value of £100 in the form of exchange value (real money or tokens of value), and as soon as he receives this £100 back, he pays in commodities. Although every part of the commodity contains value, and every individual commodity consists in equal parts of $C+P$, cost and profit, paid labour and unpaid labour, the part of the total product (or of the value of the total product) which is paid in wages contains no

^a Shopkeeper.— Ed.

SURPLUS VALUE, if it is considered in isolation, just as the part of the total product which replaces the constant capital contains no surplus value—because the whole of this part of the product (after the *remplacements* have been deducted) is then calculated as consisting merely of SURPLUS labour.

Hence for the *épicier* (who trades with the workers) to be able constantly to withdraw more money from circulation than he throws in, all that is needed is that enough money should circulate to pay the workers' wages. The *épicier* withdraws more money from circulation than he throws in because he in fact throws more value into circulation than he withdraws from it. Admittedly, the means of subsistence he bought from the capitalist had a value (we say here value for price of production, since we are dealing with capital as a whole and consider every particular sphere only as a part of the total capital) of [XVII-1040] 100, but a realised value of only $90^{10/11}$. But he throws them into circulation with their adequate, full value expression of 100. And for the question we are considering here it is entirely the same thing whether the commodity is thrown into circulation with a higher value than that with which it was originally withdrawn therefrom, because its value has grown, or because a merely latent value has been made manifest, realised. We say: this is the same thing here, where we are considering the relation of circulating money to the reproduction process.

Let us assume that the *épicier* consumes his profit entirely, and in the same articles he buys from the capitalist. In this case, if he originally buys with $\pounds 90^{10/11}$, he sells these commodities to the workers for 100, and with this 100 he can buy back not only enough to replace the commodity capital which was to be sold to the workers (namely $\pounds 100$ worth of commodities for $\pounds 90^{10/11}$) but also $1/11$ of the commodity value of 100 for his own consumption. Hence in this case he would buy back from the productive capitalist commodities to the value of $\pounds 100$. The sum of money ($\pounds 100$) the capitalist needs to pay the workers would therefore constantly flow back to him from the *épicier*. If the *épicier* buys for $\pounds 90^{10/11}$, he obtains a commodity value of $\pounds 100$, and he sells this to the workers for $\pounds 100$. If he buys for $\pounds 100$, he obtains a commodity value of $\pounds 110$. Therefore, after he has sold a value of 100 to the workers, he retains a commodity value of $\pounds 10$ for his own personal consumption.

Here, therefore, we see *d'abord* an example in which it is only required that the capitalist should pay the workers their wages weekly (or over some other period)—hence that money to the

amount of their wages should circulate—for the *épiciér* to be able constantly to withdraw from circulation more money than he threw in. In this case $10/11$ ($(9\frac{1}{11})11=99+11/11=100$) is constantly returned by the *épiciér* to the capitalist from the circulation he requires in order to pay wages. But he would have to procure the remaining $1/11$ in some other way, *which we shall discuss later*. Secondly, however, if the *épiciér* realised his profit of $\text{£}9\frac{1}{11}$ in the commodities of the capitalist himself, the $\text{£}100$ of wages paid by the capitalist would be sufficient not only for the workers to obtain their wages and the *épiciér* to replace his capital, but also for him simultaneously to realise his profit. To pay the wages of his workers periodically, therefore, the capitalist would *need no other fund* than this circulation between himself, his workers and the *épiciér*. As for the SHOPKEEPER, he would constantly withdraw from circulation *more value* than he threw into it (expressed as *value*), namely $\text{£}110$, while he only threw in $\text{£}100$. Nevertheless he would always throw into circulation as much money as he took out, namely $\text{£}100$. In this case, however, he constantly withdraws $\text{£}110$ worth of commodities from circulation and only throws back $\text{£}100$ worth. This version of the matter appears to contradict the previous one. First we said that he withdrew more money from circulation than he threw in, because he threw in commodities of greater value than he withdrew. Now we say that he throws exactly as much money in as he takes out, because he withdraws commodities of greater value from circulation than he throws back into it. The two are in fact identical expressions. In the one case he realises his surplus value in commodities, in the other in money. The *épiciér* constantly withdraws from circulation a commodity value of $\text{£}110$ for $\text{£}100$, while he only throws into circulation, sells to the workers, a commodity value of $\text{£}100$. This is the result of the fact that he constantly withdraws (realised) commodity value from circulation for $\text{£}90\frac{10}{11}$, and throws back into it a value of 100 (realised in the same quantity of commodities).

At any rate, we have here an example in which the same circulation ($\text{£}100$) suffices for the capitalist to pay wages; suffices at the same time for the *épiciér* to realise a SURPLUS value of $\text{£}10$, and finally *the same* amount suffices for the *épiciér* to realise capital and income, and for the capitalist constantly to expend the same amount for the repeated purchase of the same amount of labour.⁴³

Let us assume that the capital of the *épiciér* is $\text{£}1,200$. Let this sum turn over 4 times a year, so that every year he makes $\text{£}4,800$ worth of purchases from the capitalist, which is $\text{£}400$ a month and

£100 a week. *His own capital* would be replaced in the first quarter. If the rate of profit were 10% per annum—hence the 4fold turnover were the AVERAGE REVOLUTION OF THE MERCANTILE CAPITAL—the *épiciier* would add $2\frac{1}{2}\%$ on each 100, for 10% on 1,200=120, and 120 on 4,800= $2\frac{1}{2}\%$. In this case, if the *épiciier* paid 100 he would obtain a commodity value [XVII-1041] of $102\frac{1}{2}$, and since he only gives the workers a commodity value of 100 for £100, these £100 worth of commodities would cost him $£97\frac{23}{41}$. Here, therefore, a weekly circulation of £100 (the £100 turn over 4 times a month and 48 times in the year) would 1) pay for labour⁴³ with an annual value of £4,800, and 2) realise a commodity value of £4,800. Taken together, a value of £9,600 would be realised. Apart from this, the capital of £100 would return to the capitalist at the end of the whole circuit, whether this was itself equal to a value of £100 (if gold money, etc.) or it was only represented by a token of value or credit paper, which is the same thing for this discussion. While it realised these commodity values, the £100 would at the same time have replaced the *épiciier's* capital of 1,200 and realised a profit of 120.

(The calculation is in itself absurd on account of the *hypotheses*. For if the *épiciier* only needs 100 in turnover, he cannot invest a capital of 1,200. We should then have to assume that, apart from the sum which he always has READY and which after all amounts at most to $\frac{1}{3}$ of what is being turned over, hence £40 at most, the remainder is counted for his SHOP, wages, etc., circulation costs. We should then have to calculate a higher surcharge: 10% profit and so much, etc., for the replacement of the fixed capital. We should then have had to bring into the calculation as well the circulation between the *épiciier* and his own workers.)

But what we are concerned with here, and what is the case independently of any hypotheses, is this: In one single cycle of the circulation of the capital, in which the capitalist lays out £100 in labour, the workers buy commodities with the £100 from the *épiciier*, and the *épiciier* uses this £100 to buy back commodities from the capitalist, the £100 buy labour for £100 and commodities for £200, namely the £100 of commodities the workers buy from the *épiciier*, and the £100 of commodities the *épiciier* buys from the capitalist. This admittedly expresses, in so far as we are considering the circulation of money, merely its circuit, $M-C-M-C$, etc. But at the same time, if we look at the process which lies hidden behind this, [it expresses] a complete cycle of the reproduction process, which contains, entwined together, the moments of production, consumption, distribution, circulation and

reproduction. In contrast to this, the 40 turnovers of the £100 in the year express the 40fold repetition of this complete cycle. A single cycle may proceed slowly or quickly, the amount circulating may be big or small, but the money must pass through these turnovers. ITS SUFFICIENCY for the 40 times greater amount, on the other hand, has as its condition a given number of repetitions of the cycle, hence that the reproductions of the whole cycle of reproduction over a year should be sufficiently rapid.

Assume that the capitalist pays the workers £100 out of his own pocket (before he has begun to trade with the *épiciier*). The *épiciier* buys with £100 from his pocket a commodity value of £110 from the capitalist (namely $£90^{10/11}$ of commodities for resale and $9^{1/11}$ for his own consumption). £200 of money has now been laid out, therefore. £100 is in the pockets of the workers. The capitalist for his part has replaced the £100 through the sale of the commodities. As soon as the cycle has started, and the £100 has passed from the workers to the *épiciier*, and flowed back from the latter to the capitalist in purchases, £200 is in the capitalist's pocket. But he pays his workers with the £100 he receives back from the *épiciier*, not with the £100 he received from him before the cycle. £100 of money is now thrown out of this circulation. But the capitalist now may retain £100 less in the form of money. He can invest it elsewhere. The CURRENCY flows to him from the *épiciier*. This is in general the service performed by capital engaged purely in trade. The capitalist does not gain any capital thereby. For he provided £100 of commodities for the first £100, and for the £100 of the *épiciier*, with which he pays the workers from now on, he must always provide commodities afresh. But what he gains is that he can invest this value of £100 elsewhere. Whether the *épiciier* was the original owner of the £100 or not is demonstrated at the end of the first cycle. If it was his, he now has £100, just as before, since he has consumed the surplus value of £10 in commodities. If it belonged to the capitalist, the *épiciier* has to pay out the £100. If he buys anew, this happens in fact with fresh credit.

[XVII-1042] In the real reproduction process we must presume that one part of the profit is consumed as income, another part is accumulated. Let us assume that the *épiciier*, who makes a profit of 10% on a capital of 100 (this 100 needs to be merely an aliquot part of his capital and stands for x here), consumes half of the 10% and accumulates the other half. On our assumption the workers buy from him £100 worth of commodities, which cost him $£90^{10/11}$. His profit= $£9^{1/11}$. But in order to simplify the calculation we should prefer to say, and the relation is the same here: the workers buy for £110 commodities which cost him £100. £110 is

here what the capitalist has to pay the workers; he only receives the whole sum back from the *épicier* if the latter constantly consumes the £10 profit, and indeed consumes it in the capitalist's commodities. If he consumes £5, £105 comes back to the capitalist, and if this occurs regularly this amount is constantly in circulation. The capitalist, on the other hand, would constantly have to draw £5 from sources other than this cycle of circulation and, through wages, throw them into circulation as SURPLUS, except under certain circumstances which will appear shortly.

The £5 the *épicier* accumulates is initially accumulated by him in the form of money, and this is the sole, *most direct, immediate* form in which he can accumulate, unlike the productive capitalist. The productive capitalist can accumulate *in natura*, if his product itself enters as a condition of production into itself, as e.g. wheat does as wheat seed in agriculture, or he can accumulate through exchange, as do e.g. the machine manufacturer and iron producer. (What would correspond to this in the case of the SHOPKEEPER, perhaps, would be an increase in the part of his capital which enters into the circulation costs of his circulating capital, such as buildings, etc. But even so this too requires a prior conversion into money.)

//It is true that accumulation may appear with all capitalists as *accumulation of unsold commodities* (presupposing here that they have sold the part of the commodities which replaces their capital). But this is always involuntary accumulation and it hinders reproduction, with one sole exception. The capitalist may consider it necessary to produce an increasing reserve fund of commodities to cover increasing demand (this can naturally only happen with commodities which can be preserved FOR SOME TIME, such as clothing materials and the raw material for them, etc., cattle, machines, etc., metals, etc.), and SO FAR (this may also be case for the SHOPKEEPER) all accumulation amounts to annual overproduction, an overproduction which is the law of expanding production, not stagnant production.//

OUR SHOPKEEPER may now accumulate this £5 straight away in real terms as capital, i.e. convert it into capital, or only accumulate it as the material of capital, as money capital destined for reproduction, but temporarily at rest. This is in fact a mere hoard, but with the determination of capital lying fallow.

With £100 the SHOPKEEPER bought commodities of a value of 110; the capitalist paid the workers £110 of wages; the workers paid the SHOPKEEPER the £110 for commodities which are worth 110 but only cost the SHOP 100. On our first presupposition the SHOP[keeper]

spends with the same capitalist, apart from the 100 needed for the replacement of his commodity capital (which has a value of 110), 10 more for his own personal consumption. For 110 he receives commodities of a value of 121, but he consumes this value of 21 or sells it to himself. The commodities cost him only 10, although they are worth £21; but cost him as his own customer the value of 21. (Just as he obtained 110 for 100 (in the case where his capital was $90^{10/11}$) but consumed 10. The £110, however, circulates constantly; it provides the money for both the workers' wages and the *épiciers*' commodities, as well as the commodities the *épicier* buys back; equally the £110 replaces his capital and his profit.)

If the *épicier* always consumes £5 and accumulates £5 (as distinct from the HOARD, which is always involuntary with the capitalist, but which is, both for him and for the hoarder, money withdrawn from circulation, exchange value at rest as money) the situation remains the same in so far as he still buys commodities for £110; £100 to replace his capital, £5 as profit added to the capital, and £5 for his own consumption. But certain distinctions enter here. As far as concerns the £5 consumed by the *épicier* himself, the old rule still prevails. He buys with it a commodity value of $£7\frac{3}{4}$, which he himself consumes, however. [XVII-1043] It is different with the other $£7\frac{3}{4}$.

This is wrong. We assume that he always adds 5% to the capital, hence the capital is 100, 105, 110,¹³⁵ etc. For him to accumulate this, to apply it as capital, the workers need to buy more from him, the capitalist must therefore buy more labour⁴⁵ (whether by employing more workers, or by having to pay more because more work is done. Here we leave out of account any rise in the market price, although this amounts to the same thing for the circulation of money. Similarly, the production price of the commodity could have risen, hence either more labour is employed by the capitalist in order to produce the same amount of commodities, or the raw material, etc., has become dearer. We are not considering any of these CASES here. It is assumed that commodity values remain the same.) The mere accumulation of the SHOP[keeper], SO FAR AS it is not SPEND OF HIS PROFIT, is not of the slightest use to him in accumulating as capital the money saved, if the workers do not have any more to buy. And we are assuming that this is his LINE OF BUSINESS, and we leave out of account here the competition through which one SHOPKEEPER extends his sphere of action at the expense of another. (This is a very important consideration in dealing with the competition of capitals.⁶⁷ Here one of the SHOP[keepers] represents the class of SHOP[keepers].) It is admittedly possible that he e.g.

expands his SHOP, etc., and maintains a larger service personnel. This already requires a considerable increase in the accumulation of his capital (OR RATHER HIS LATENT CAPITAL). It therefore only comes about in consequence of a long (productive) accumulation or growth of latent capital.

But let us assume that the workers buy more and that the shopkeeper's accumulation corresponds exactly to the growth in wages (hence to the growth in the reproduction of the *variable* capital of the capitalist). (If the latter were to proceed more rapidly, he would have to take credit from the capitalist. His profit would then grow more rapidly than his capital.)

Let us say that this process takes up e.g. 5 years.

Year I) Capital 100. SHOP[keeper] buys from the capitalist for £100 commodities of the value of £110. Capital pays £110 in wages. The workers buy commodities from the SHOP[keeper] to the value of £110.

//If the situation is normal, the worker, like anyone else, buys the commodities at their value. They are only dearer for him because he provides more labour for the money with which he buys them than the money represents; not because the commodity is worth less in money than it costs him. The money costs him more labour than it is worth.//

II) *Capital 105.* SHOP[keeper] buys from capital for £110 (hence commodities to the value of £121). But he only has in his shop commodities for £105, hence to the value of £115¹/₂. He consumes commodities to the value of £5¹/₂, which cost him £5. (The ¹/₂ is 10% on 5.) The capitalist pays £115¹/₂ in wages, with which the workers buy from the SHOP[keeper] a commodity value of £115¹/₂.

III) *Capital 110.* SHOP[keeper] buys commodities from capital for £115¹/₂, hence commodities of the value of £126¹/₂+¹/₂₀, or £126¹¹/₂₀. But he has in his shop only £110 of commodities, consumes therefore a commodity value of £5¹¹/₂₀. The value of these commodities, for which he has laid out £110, is 121. The capitalist pays £121 in wages. The workers buy commodities from the SHOP[keeper] for £121.

IV) *Capital 115.* SHOP[keeper] buys from capital for £121=a commodity value of £132¹/₁₀. But he only has in his SHOP commodities for 115, the value of which is 126¹/₂. He therefore consumes a commodity value of 6⁶/₁₀. The capitalist pays £126¹/₂ to the workers; they buy with this commodities which cost the SHOP[keeper] 115.

[XVII-1044] V) *Capital 120.* SHOP[keeper] buys from the capitalist for £126¹/₂. But he only has enough in his SHOP for £120. He

therefore consumes $\pounds 6^{1/2} = a$ commodity value of $6 + \frac{1}{2} + \frac{6}{10} + \frac{1}{20} = 6 + \frac{1}{20} + \frac{12}{20} + \frac{1}{20} = 6 + \frac{14}{20} = 6\frac{7}{10}$.

He has in his SHOP commodities for $\pounds 120$, hence a value of $\pounds 132$. The capitalist pays $\pounds 132$ to the workers; they buy for this amount from the SHOP[keeper], etc.

Two things are assumed here for the SHOP[keeper] to be able to add 5% to his capital every year. Firstly, that the individual CONSUMPTION OF THE SHOP[keeper] himself grows somewhat every year. Otherwise the accumulation would have to proceed more rapidly. Secondly, that the capitalist (this is what we call the directly productive capitalist $\kappa\alpha\tau'\acute{\epsilon}\xi\sigma\chi\eta\nu^a$) accumulates, since this is demonstrated in the growing magnitude of his variable capital, i.e. the annual growth in his outlay for the purchase of labour. But we see here at the same time that though the circulation of $\pounds 100$ was enough as long as the SHOP[keeper] did not accumulate but consumed his $\pounds 10$ of profit in commodities, this is no longer the case once he begins to accumulate. Just as at the beginning of the process he bought for $\pounds 90\frac{10}{11}$ and sold for $\pounds 100$, the capitalist therefore having to add $\pounds 9\frac{1}{11}$ to circulation, but the $\pounds 100$ being sufficient, so now at the beginning of each year the capitalist has to make an addition to circulation from his own capital in order to keep reproduction going.

Year I) SHOPKEEPER operates with $\pounds 100$. Capital pays wages of $\pounds 110$. Therefore throws $\pounds 10$ more money into circulation.

Year II) SHOPKEEPER operates with $\pounds 105$. Capital pays wages of $115\frac{1}{2}$. Throws $\pounds 5\frac{1}{2}$ more money into circulation.

Year III) SHOPKEEPER operates with $\pounds 110$. Capital pays wages of $\pounds 121$. Therefore throws $\pounds 5\frac{1}{2}$ more money into circulation. ($115\frac{1}{2} + 5\frac{1}{2} = 120 + \frac{2}{2} = 121$.)

Year IV) SHOPKEEPER operates with $\pounds 115$.¹³³ Capital pays wages of $\pounds 126\frac{1}{2}$. Therefore throws $\pounds 5\frac{1}{2}$ more into circulation.

Year V) SHOPKEEPER operates with $\pounds 120$. Capital pays $\pounds 132$. Throws $\pounds 5\frac{1}{2}$ more into action.¹³⁴

The total amount the capitalist has added to circulation over the five years = $\pounds 10 + 4(5 + \frac{1}{2}) = 10 + 20 + \frac{4}{2} = \pounds 32$. This amount replaces the whole of the SHOPKEEPER'S profit, because he consumes part of it in the commodities of the capitalist, hence sells it to himself.

Incidentally, the eventual upshot of all this is the law we developed earlier. The wage of the worker pays the whole capital of the SHOP[keeper] as well as his profit. Therefore, if a SHOP[keeper] who only provides the workers with the means of subsistence, i.e.

^a Par excellence.—Ed.

is only sustained by variable capital, accumulates, the money laid out for wages must increase. In fact the causal relation is reversed. The SHOP[keeper] can only accumulate as SHOP[keeper] (i.e. reconvert into CAPITAL his profit in his BUSINESS) if productive capital produces on an expanded scale, and only in so far as this expansion involves an expansion of variable capital, i.e. capital laid out in wages. The expansion of circulation—to the DEGREE of the SHOP[keeper]'s ACCUMULATION—must then be provided by capital.

Now take the second case. The SHOP[keeper] has no opportunity to expand his business, because the capital laid out in the purchase of labour does not increase, or does not increase in the proportion to which the SHOP[keeper] would like to accumulate.

If e.g. his capital is 100, the value of the commodities he buys is 110, and if he consumes half of the 10, he will accumulate £25 in the 5 years; if his capital=1,000, he will accumulate £250. Thus the accumulation of capital appears here at first as accumulation of money, WHICH IS NOTHING ELSE than HOARDING, although here the hoard has the character of latent capital. All surplus value which is realised in money assumes this form initially, until it has been reconverted into productive capital. The latent capital may also have other forms, those of fixed capital, etc. But then—with the exception of unsold commodities destined for individual consumption (apart from the means of subsistence for the workers)—it already exists as a condition of production, realised (not in the money form) and available.

[XVII-1045] This accumulation of capital in the form of money is however the sole kind which can take place without the presupposition of simultaneous reproduction in other spheres of productive capital. This SHOPKEEPER can thus be compelled to HOARD the £250 as money, because there is no growth in variable capital. This lack of growth does not prevent him from setting aside annually £5 of money, or more, depending on his greed or mania for accumulation, which he cannot however directly apply as capital in his business. This is an incidental feature of the reproduction process which is important for the explanation of many phenomena.

Under the circumstances we have indicated, the SHOP[keeper] buys from capital:

1st year for £100. Capital has to throw £110 into circulation. Thus £10 more than it receives from the SHOP[keeper].

2nd year for £105. Namely £100 for SHOP and £5 for SHOPKEEPER. The SHOPKEEPER accumulates OR RATHER HOARDS £5. Capital has as before to throw £110 into circulation. The SHOP[keeper] for the £5

receives £5½ of commodities *in natura*. But for the £100 he receives a value in commodities of £110, which the capitalist has to pay his workers as wages. But since he receives £105 from the SHOP[keeper] he has to add 5.

3rd year the same. *4th year* the same. *5th year* the same.

The capitalist has therefore to add to circulation in the first year 10, in the 4 following years £20 (each year 5), in the 5 years £30. It was £32, while the SHOP[keeper], instead of putting the £5 into the bank (in short laying it aside), invested it productively in the purchase of capital's commodities. It is therefore—*prima facie*—almost the same CASE, *quoad circulationem*,^a as if the SHOP[keeper] had accumulated productively.

Given the capitalist mode of production, however, it is to be assumed that the SHOP[keeper] deposits this amount every year with a banker. Whether or not he draws interest from this is here irrelevant. Yet it would need to be considered for reproduction as a whole. This much is clear, however, that the amount the SHOP[keeper] puts aside in this case—the amount capital has to add every year over the 5 years—£5. The SHOP[keeper] first puts aside £5 at the end of the first year, hence £25 over the 5 years. In the first year capital throws £10 into circulation. But 5 out of this 10 remains in circulation or returns to it from the SHOP[keeper]. With the exception of the £10 which the capitalist casts into circulation in the first year, he continues to throw in no more than 5 a year, since the other 5 remains in circulation. Since the 105 remains in circulation (the capitalist has thrown in the 5 once and for all) there remains to be added by the capitalist over the 5 years, after the deduction of this amount—and it is in circulation, flows back—only £25, exactly the same amount the SHOP[keeper] has lying in the bank. This money—capital lying fallow, accumulating latent money capital for the SHOP[keeper]—forms the source of the supplement capital needs for the circulation. Thus the circulation can last year by year with the sum of £110. The profit of the *épicier* is *verbalement*^b PAID TO HIM IN HIS OWN COIN. He himself puts back £105 a year, and £5 is paid to him in his money which he has deposited with the BANKER. (It is assumed here that he himself receives no interest; otherwise an increase of circulation from one direction or another would be necessary.) The capitalist pays him his annual balance of £5 with his £5 annually deposited with the BANKER. The business is now done in the following way:

^a From the standpoint of circulation.—*Ed.*

^b Literally.—*Ed.*

First year. Capitalist receives £100 from *épiciier*. Pays 110 to workers, who buy commodities from the *épiciier* with this money. The *épiciier* pays 105 and takes 5 to the banker.

Second year. Capitalist receives £105 from *épiciier* (5 of which is thrown into circulation by capital). He takes from the BANKER the 5 which the *épiciier* has deposited. He pays the workers £110. Back to the *épiciier*. The latter brings to the banker the same £5, which have been returned to him in the £110.

Third year. Capitalist receives £105 from the *épiciier*. He takes the £5 from the banker and pays it to the *épiciier* for the second time, in the 4th year for the 3rd time, in the 5th year for the 4th time. The £25 deposited with the BANKER by the *épiciier* therefore continues to exist only in the form of £5. And in fact the capitalist threw £10 into circulation only at the beginning of the transaction; this £10 passes through the same cycle just as before. Out of the £25, therefore, only £5 is to be found with the BANKER as money accumulated and constantly expended by the capitalist; this £5 constantly travels from the banker to the capitalist and from the [XVII-1046] *épiciier* to the banker. Only by an indirect route does the *épiciier* annually throw £110 into circulation. His capital of £25 deposited with the BANKER amounts to his having a balance of £25 in his favour with the BANKER, which is present (in so far as the BANKER deals at all with his own capital) in the form of SECURITIES, mere drafts on future income, government stocks, bills of exchange, share certificates, etc. What has accumulated here in fact is the *épiciier*'s draft on the BANKER, the BANKER'S draft on the future receipts of the state, share companies, productive capitals. The accumulation is IN FACT here an accumulation of mere drafts on receipts which derive from productive capital. (For the revenue of the state can also be reduced to receipts of this kind, which are paid to it annually by the productive capitalists.) This discussion belongs actually to the credit system.⁶⁷ What is important here is that we should see how the £110 continues to suffice for the circulation, although £25 is accumulated as *latent money capital*. One can see from this the difference between actual (apparent) accumulation of money and the inflow of CURRENCY. What must be accumulated here in CURRENCY is nothing but the identical original £110, although the SHOP[keeper] annually withdraws £5 of this from circulation.

//Even if the SHOP[keeper] accumulates productively, and annually buys £5 more of commodities from the capitalist, the latter receives the extra amount from the BANKER in the same way. Yet in this case circulation increases by the whole amount of money the

SHOP[keeper] does not consume in commodity value, as his purchasing money. The capitalist must obtain from other sources the increased wages over and above this purchasing money.// The capitalist indeed owes the banker capital (value) to the value of £5 each time, for the £5 he withdraws annually in this way. Hence at the end of the 5th year £25. But this is definitely not the same as saying that he has as a result of this changed the figures in his account with the BANKER. If, e.g., he has increased his constant, without increasing his variable, capital, he will have more to receive from the BANKER (who administers his account for him) for the sale of his commodities. We do not say, therefore, that he borrows the £25. To be sure, he must lay out £5 more of his capital every year in money. But for this it is not necessary that the amount of CURRENCY he himself provides via the SHOP[keeper] be increased.

With regard to the MERCHANT (*épiciér*, SHOPKEEPER) who sells the means of subsistence to the workers—with regard to a part of the capital (part of the MERCANTILE CAPITAL)—we have seen, thus, how he constantly “extracts from circulation more money than he throws in”. He extracts a part of the “surplus value” in “commodity value”, but this must be a GENERAL LAW, since all those who live off profit //interest and rent// must expend a PART for their individual consumption. It is enough for the operation that the amount of money necessary to pay the worker his weekly wage should circulate, hence the amount necessary to pay for the commodity values the worker consumes. The money necessary for this circulation is provided (and forms a part of the capital) from the capital of the SHOPKEEPER himself for the most part (unless he is trading on credit from the MANUFACTURER). The part originally provided by the productive capitalist himself=the profit of the SHOPKEEPER, i.e. it is not equal to the annual profit on his capital, but=the part of the profit which falls on the weekly turnover. (In fact the excess contains not only profit but at the same time the depreciation of the capital laid out for the circulation costs.) Let us assume that the SHOP[keeper] circulates £1,000, which turn over 4 times in the year. And the profit (including costs, etc.)=16%. Thus 4% in three months and $\frac{4}{3}\%$ in 1 month, and in one week $\frac{4}{12}=\frac{1}{3}\%$. (4% in 3 months on 1,000=£40. And in 12 months=£160. And 16% annually on £1,000=£160.) This would be a weekly addition of $\frac{1}{3}\%$ to 1,000. To £100 it is £ $\frac{1}{3}$. To £300 it is $3 \times \frac{1}{3}=\text{£}1$. To £900 it is £3. And to £1,000 it is £3 $\frac{1}{3}$ or £3 $\frac{2}{3}$ s. And this would be the amount the manufacturer had to add to the CURRENCY of £1,000. (Naturally all these amounts must

in reality be set somewhat higher, because the REFLEX movement does not proceed without friction. A part of the wage, for example, may run into other channels, may be HOARDED by the worker, etc. On the other hand, we are leaving almost entirely out of account compensations for credit.) We have seen how [XVII-1047] this amount *remains constant*, if on the one hand wages (and the number of workers employed) remain the same, and on the other hand the *épiciér* consumes the whole of his profit in the commodities of the capitalist. It is not greatly modified when the SHOP[keeper] WITHDRAWS PART OF HIS PROFIT. If the *épiciér* accumulates productively, i.e. expands his business, the prerequisite is that the variable capital employed by the capitalist should increase. In this case too, what the capitalist adds is only equal to the profit, or RATHER the *weekly expression of the profit*, of the tenant.^a A very small rate, therefore. *Incidentally, see the following*

//Note to p. 1044.^b

The calculation is wrong, because it is always only the part of the SHOPKEEPER'S money with which he operates as capital which is calculated, thus not the money he expends for his own consumption, the money he expends as income. Then matters proceed in this way:

Year I. SHOPKEEPER buys with £100 for his SHOP a commodity value of £110. Wages 110. The *capitalist* throws into circulation £10, = the profit of the SHOPKEEPER, = the 11th part of the circulation.

Year II. SHOPKEEPER expends £5 as income. Buys commodities for the SHOP for 105. He therefore expends the £110 he has received from the workers. For the £105 he receives commodities of 115 1/2. The capitalist has to pay wages of £115 1/2. £110 of this has been thrown into circulation by the SHOP[keeper]. The capitalist now has to throw in 5 1/2.

Year III. SHOP[keeper] throws in £115 1/2. Capitalist 121. Hence 5 1/2. Similarly in Years IV and V.

The calculation is thus correct after all. Besides this, the amount the capitalist throws in here as an increment is smaller than the amount he originally threw in by almost a half—5 1/2 instead of 10.//

* At first view, it seems a puzzling question, how the capitalist shall be able perpetually to withdraw more money from circulation than he throws into it, the more so since he, in fact, throws all the

^a This seems to be a slip of the pen. It should probably be "shopkeeper".—Ed.

^b See this volume, p. 181.—Ed.

money into the circulation, or is the starting point as well as the returning point of the circulation?*

With the *épicier* the capitalist has only to throw once and for all into circulation—if the reproduction process remains the same and the *épicier* consumes the whole of his profit—the part—the weekly expression of the profit of the MERCANTILE capital of the *épicier*. This addition to the capital thrown into circulation every week by the *épicier* himself //we can look later at the differences which enter through the fact that the *épicier* buys perhaps only once a month or once every 3 months, depending on the circumstances, and sells weekly//+the weekly monetary expression of this capital itself is then sufficient for the *épicier* to be able to withdraw every week from circulation e.g. £10 more than he threw into it, although the weekly CURRENCY remains £110, as before. And what the capitalist has thrown in, ONCE and FOR ALL, is only $\frac{1}{11}$ of the weekly expression of his variable capital, hence, since the weekly variable capital = $\frac{1}{52}$ of the annual variable capital,

$\frac{1}{11}$ of this, $\frac{1}{52 \times 11} = \frac{1}{572}$ of the variable capital he has to lay out

annually. Whether I pay 1,200 thalers (value) all together at the end of the year, or 12 thalers a month or 3 thalers a week, changes nothing in the *amount of value* I have to pay for the whole year. In the first case, however, 1,200 thalers of money would be needed to realise the value. In the second, if the 3 thalers flow back, they may be sufficient to pay the 1,200 thalers. 3 thalers, turning over 400 times in the year, realise 1,200. But one sees at the same time that important as the above investigation is for the role played by mercantile capital in relation to the circulation of money proceeding during the reproduction process, the question is not thereby exhausted. This is so in two respects.

1) Since mercantile capital is itself PART and PARCEL OF THE CAPITAL, one should, to begin with, refer it to productive capital itself. The operation would then look like this: The capitalist pays out 110 in wages, the workers buy back from him commodities of 110, and the money thus flows back to him. This shows us indeed how a money capital of 110, laid out weekly (in money as CURRENCY, means of payment), is enough if he has to lay out a variable capital annually to the amount of £5,720. The workers receive from him in the course of the year a commodity value of £5,720. But the sum of £110 is sufficient to pay them this over the whole year. The simple circuit of the money is only that *the same* coin passes through different hands. In contrast to this, the REFLUX move-

ment—continuity—implies [XVII-1048] that the same coin or at least the same amount of money passes again and again through *the same* hands as means of purchase or payment. Hence the money capital the capitalist must have in order to pay his variable capital to the workers is in no way proportionate to the size of this variable capital itself. Although the weekly expression in money of the variable capital for the 2 variable capitals A and B is naturally proportionate to the magnitudes of A and B. If A is 50 times greater than B, its weekly expression in money is 50 times greater than that of B. In either case this is quite compatible with the MONETARY expression of A and B over the whole year never being, respectively, greater than $A/52$ and $B/52$. This is an important moment in the REFLUX movement, in order to grasp the mechanism of the circulation of money. But whether the capitalist pays out £110 at the end of the week or 5,720 at the end of the year, this movement does not explain how even a centime of profit flows back to him, hence also profit realised as money. For, reduced to a still simpler expression, the process comes down to this: He first pays out the amount in money; he then pays out the same amount of value in commodities and thus draws back the money. It is reduced to this, that every week he pays out a value of £110 to the workers. No advantage results from this process of payment. And not in the least from the fact that he first gives out the tokens (the money) and then draws them back and gives out the real commodity values.

2) *But secondly*, with regard to the MERCANTILE CAPITAL of the SHOPKEEPER, the matter can be reduced to this: His specific profit requires merely that the value of the commodity sold by him should be paid; and, since the workers are the buyers of his commodity, that the wage of labour should=the value of the commodities sold to them by him. But expressing this generally we find that the problem itself is only repeated (leaving aside the SPECIFIC NATURE OF MERCANTILE CAPITAL) IN ANOTHER FORM: Expressed generally this means nothing but: for the capitalist to draw from circulation more money than he has thrown into it nothing more is needed except that the value of his commodities should be paid for, or that enough money should be there to pay for the value of his commodities. Or that enough money should be available every week, i.e. that enough money should periodically circulate, to pay for the periodically circulating amount of commodities that he offers for sale. But since the value of his commodities includes surplus value (profit (interest, rent)), hence he has given out less money in order to buy the elements of the commodity, it means

that so much money is (periodically) in circulation as to enable him periodically to withdraw from circulation more money than he has thrown in. This solution of the QUESTION, generalised, is therefore nothing more than a repetition of the QUESTION itself.

We must above all endeavour TO REDUCE THE PROBLEM ITSELF TO ITS SIMPLEST EXPRESSION.

The fact that the capitalist receives back more value than he gives out is not what constitutes the question. For this would be the question of the origin of surplus value, which we have already solved. *Therefore, what is at stake here is the question of how this surplus value is realised in circulation.* In the first act of capital, $M-C$, it buys commodities to which, as shown above, surplus value is added in the production process, i.e. value the capitalist has not paid for but which he can sell. In the second process, $C-M$, in contrast, in the sale of the reproduced commodities, the capitalist in fact throws into circulation more value than he has withdrawn from it in $M-C$. The only requirement for the realisation of this higher value is that it should find an equivalent in circulation. We have discussed how this happens, in investigating the way in which, in the total reproduction process, the use values and values of the different capitals replace, pay for, and realise each other.¹³⁵ Hence this too is not the problem. In explaining that process we made abstraction from the circulation of money, or we considered money only as the expression of value, as money of account. The question was therefore then posed in this way: *Assuming the product is sold, how is it replaced?* Or, on the other hand, *who buys it, who possesses the values needed to replace it?* The question is now related to *the money* with which the purchase is conducted. Capital's extraction from the circulation process of a greater commodity value than it originally threw in is explained by the fact that it throws in the surplus in one form, before it extracts it in the other form. And the way it throws in the surplus in advance in the other form has been explained.

[XVII-1049] But the question here is: How is the surplus realised in money? How does the surplus value assume the form of a surplus of money? The money the capitalist lays out at the beginning of the process does not enter into the production process. The capitalist rather gives it away entirely. The fact that he has given it away is a condition for the initiation of the actual production process. Hence whatever increase of value occurs in the production process, the value which was originally represented by money increases, but this increase of value changes absolutely nothing in the quantity of money. It itself is present in circulation

in the same quantity, before and after the production process. It has changed hands. If now through the circuit of reproduction it flows back into the hands of the capitalist, how should it flow back in increased quantity? Let us say the total productive capital=1,000, and there were commodities of that amount in the hands of the MERCHANT. WELL. The commodities are now partly present in the productive process, and are partly being consumed by the workers. The £1,000, in contrast, is now in the hands of the MERCHANT. Once the production process has ended, commodities to the value of 1,100 ought to be found in the hands of the productive capitalist. How is the MERCHANT to buy commodities to the value of £1,100 with £1,000? It is of no assistance to shift the question from one foot to the other and to say: the MERCHANT sells the commodities to the consumers for £1,100. Who are the consumers? The industrial consumers and the individual consumers. Industrial consumers are the capitalist himself and the workers. But they only buy back when the £1,000 has been converted into 1,100. Individual consumers—profit (interest, rent) and RETAINERS. But this profit and its branches—interest, rent and the salaries of the unproductive workers—have first to be realised. They are contained precisely in the £100. One therefore says in fact that the capitalist pays the merchant the 100, so that the latter can pay him £1,100 for commodities of a value of 1,100, since the merchant only possesses £1,000 from the previous operation.

SO BROADLY PUT, the question answers itself. In the form in which the problem is posed, money is only considered in circulation, excluded from the production process. //We disregard here credit money, in which circulation itself functions as the workshop for the production of money.// And it is excluded, as money. But not as commodity. As the latter, it emerges itself from the production process. And the money (gold, silver) is at first a commodity—before it runs its course in circulation as money. Let us transfer gold and silver production from the gold and silver lands to the home country itself, so that the entry of foreign trade does not bring in superfluous incidental details in advance. TO WORK A GOLD OR SILVER MINE, the capitalist has to lay out constant and variable capital, as in every other branch of industry. But his constant capital consists only of fixed capital and *matières instrumentales*.^a Living labour forms a large proportion of the total outlay. Let us assume that when he lays out £100 in money, he gains £130. This £30 then forms the surplus value. ///(Profit and rent) The production

^a Instrumental materials.—Ed.

of gold and silver is distinguished from all other branches of production by the fact that here, rather than comparing the value of the product with the value of the outlay, we must compare the money value of the outlay, the EXPENSES MONETARILY EXPRESSED, with the *total amount* of the product. The outlay, £100, = A CERTAIN MASS OF GOLD. Its price of £100 is merely the expression in the language of money of account of the fact that the outlay = a certain quantity of gold. Hence if the product is 130, i.e. if it contains $\frac{3}{10}$ more gold than the outlay, the profit = 30%. The rate of profit (which here includes rent) is determined purely by the excess of the use value obtained (gold) over the outlay (similarly in gold), expressed in the same use value, gold. And this is entirely independent of the value of the gold. An equalisation of the profit can here only take place to the extent that if the rate of profit = 10% and the excess of gold = 30, this 30 may be split up into rent and profit. On the other hand, the outlay itself depends, to be sure, on the value of the gold, hence on the productivity of the labour employed in the production of gold and silver—a productivity which is determined by the natural level of yield of the mine, if the mode of production is given, and which depends on the mode of production if the natural level of yield is given. If the value of gold and silver stands high, because the mines yield little // We want to leave aside the mode of production here, although it is important for SURPLUS value, as in every other TRADE; the capitalist [XVII-1050] can extract more surplus labour if he employs division of labour, machinery, etc.// and therefore a large quantity of labour provides a meagre result, £20 may perhaps buy as much labour (i.e. means of subsistence for the workers), instruments and *matières instrumentales* as in another situation 100. If, therefore, £100 is invested and yields a SURPLUS PRODUCE of only £3, the rate of profit will admittedly only be 3%. But as much can be bought with this £3 as with £30 in the other case.///

Or the surplus labour is expressed in £30. Let us assume that the capital consists of 40 constant capital and 60 variable capital, i.e. £60 laid out in wages. In this case the £100 thrown into circulation comes out of the production process itself as gold and silver to the value of £130. The whole of the capital does not need first to be converted into gold or silver by the circulation process, but is converted into gold or silver *in natura*. The first metamorphosis here is not the conversion of the commodity into gold or silver (money) but inversely the conversion of gold and silver into commodity. Gold and silver are only realised as commodities and converted into money through their exchange

with other commodities. Our gold producer would *d'abord* have had to pay out $\frac{6}{13}$ of his product to the workers. The REFLUX of this $\frac{6}{13}$ or £60 would not take place with him. The workers buy from the SHOPKEEPER with it, but the SHOPKEEPER does not have to buy from the gold producer with the £60, which is gold. He rather expends £60 in order to buy commodities from the capitalist who produces means of subsistence. The £60 therefore flows towards the latter. (The profit of the SHOPKEEPER continues to consist in his receiving from the capitalist for the £60 a commodity value of say £66 (10%). Whereas he himself naturally only gives out commodities to the value of £60 for the £60.) And the £30 is reconverted by the gold producer into machinery, *matières instrumentales*, etc.; they therefore flow to the machine manufacturer, coal producer, etc. Finally, profit and rent of £30 is in part consumed, whether in means of subsistence and luxuries or by being handed to unproductive workers (the state, servants, etc.); and a part of it is destined for accumulation, therefore thrown onto the loan market. As long as it is not loaned out, it lies idle as a hoard. Once it is loaned out, it is itself again laid out in constant capital and variable capital and thus thrown into circulation. The gold which the gold producer has thus thrown into circulation flows back to him from circulation only in the form of the commodity; it returns to him (with surplus) out of his own sphere of production as gold and silver. Thus the £130 of new gold flow as money into circulation, partly in exchange for means of subsistence, it may be for the workers, it may be for the other classes, partly in exchange for machinery and *matières instrumentales*. This commodity, unlike all others, does not have to be converted into money, but becomes money through its conversion into a commodity; it therefore performs the opposite movement to that performed by the other commodities. If on the one hand a SURPLUS of commodity values is thrown into circulation, on the other hand a surplus of gold is thrown in. This is on the assumption that there exists a circulation adequate to begin the new cycle of the reproduction process. On the same assumption, all that needs to be circulated anew, is surplus value. From the other angle, the angle of gold production, it is not only the surplus (the £30), which is thrown into circulation but the whole product (with the exception of the accumulated gold, as long as it lies idle). Thus on the above assumption,^a if e.g. the capital consists of 1,000 and the profit of 100 (the total SURPLUS VALUE), all that needs to be thrown into

^a See this volume, pp. 189-91.— *Ed.*

circulation is gold for £100. Thus a capital of $71\frac{5}{13}$ would suffice for gold production. For the product equals 100. (Profit $28\frac{8}{13}$.) Relatively little capital suffices here because it is not the surplus of this capital but capital and profit—the total product in which it is reproduced—which is expended in paying for that surplus of commodity values.

The whole of the portion of annual production which is exchanged for gold or silver (this is how the matter presents itself when gold and silver are not produced within the country) or directly employed in the production of gold and silver, 1) represents more gold or silver than is expended to produce it; it represents SURPLUS value directly in gold or silver, as a surplus of gold and silver; 2) reproduces in gold or silver the whole of the capital laid out. This gold (let us leave out silver to simplify matters), in so far as it enters as a material into gold and silver manufacturing, is as we have seen^a also a form of hoard-formation, which we are not concerned with here. It replaces the constant capital of the jeweller, GOLDSMITH, watchmaker, etc. Another part enters the CURRENCY, whether to replace worn out, [XVII-1051] abraded coins, or because the realisation of the commodity values requires a greater QUANTITY OF CURRENCY. A third part becomes a hoard, and in this form it is either a mere hoard (capital lying idle) or a reserve fund for means of payment and purchase, or, finally, for the settlement of international balances, or a means of purchase abroad. As BULLION, gold can only serve as means of payment on the world market; within the country it must be converted into actual coin or at least transferred into money of account.

According to our assumption, gold production takes place within the country.

The gold producer has to exchange his product 1) for variable capital by means of the wage paid to the workers; 2) for constant capital, for machinery and *matières instrumentales*; 3) for means of subsistence, etc., in which PROFIT (RENT INCLUDED) IS SPENDED [expended]; 4) a part of the profit is accumulated. If this accumulation is not to be mere HOARDING, it must in turn be laid out as variable and constant capital.

Let us start from 4); the part of the newly produced gold which is accumulated as profit. It must either BE HOARDED, if there is no direct employment for it, or, if there is employment for it, it

^a K. Marx, *A Contribution to the Critique of Political Economy*. Part One (present edition, Vol. 29, pp. 359-70).—Ed.

replaces constant and variable capital. If the latter takes place, the gold producer may either invest it in his own business or loan it out as interest-bearing capital. As far as the first is concerned, the gold producer has it in common with all other producers whose SURPLUS is realised in money that it is initially a hoard which lies idle, latent money capital. As such it lies with the banker, and waits for its conversion into productive capital. The sole difference is that in the one case it can exist in the form of tokens of value (government stocks) or as banknotes or some other form of credit money, but here it exists itself as value, i.e. money. The second case is as follows: He accumulates, i.e. capitalises the profit existing as a SURPLUS of gold. This happens either through his investing it in his own business or loaning it out.

Let us assume that he invests it in his own business. Then, in this particular case, his accumulation will be different from that of the other capitalists. The other capitalists can only employ their own product again as a condition of production if it really enters as a condition of production into their own product. E.g. coal enters into coal production, machines enter into machine production, metal enters into metal production, corn enters into corn production. But they can never do more than reproduce it *in natura* as *constant capital*. One might refer to the producers of means of subsistence which can be stored; e.g. living cattle, corn, clothes, etc., are variable capital which is accumulated *in natura*. But cattle-breeders, FARMERS, CLOTHIERS, etc., must all first sell cattle, corn, clothes before they can pay the workers with them. The wage must be paid in money. They indeed accumulate, TO A CERTAIN DEGREE (no one produces means of subsistence to pile them up; the capitalist produces at most the excess quantity he THINKS TO BE ABLE TO SELL WITHIN THE YEAR, basing his calculations ON THE GENERAL OVERPRODUCTION AS COMPARED WITH THE YEAR PAST), variable capital FOR THE SOCIETY, but not *directly* for themselves. Apart from this, every particular branch of production produces ONLY ONE ITEM OF THE VARIABLE CAPITAL, AND CAN ONLY BY ITS CONVERSION INTO MONEY BE RECONVERTED INTO ALL THE INGREDIENTS OF VARIABLE CAPITAL. The gold producer, in contrast, can never reproduce *in natura* any part of his constant capital. Gold is neither instrument, nor *matière instrumentale* for the production of gold. It does not enter into the production of gold *in natura*. But the gold producer, unlike the other producers, can directly reproduce his variable capital, i.e. the variable capital in its direct form, gold paid to the workers as wages. For the worker to be able to realise this gold there must admittedly be the commodities on the market into which, as means of subsistence, he

sinks his wages. (For society it is variable capital which the producers of variable capital can accumulate, i.e. a commodity; but not this commodity in the form in which it serves them themselves directly as variable capital. Conditions of production and commodities which belong to the consumption fund of society can BE ACCUMULATED, the former TO A GREATER, THE LATTER TO A SMALLER DEGREE.) This gold paid to the workers would go directly into circulation. The more workers were employed, the more gold could circulate, and more gold would have to circulate, SINCE THE WORKMEN ARE TO BE PAID CONTEMPORANEOUSLY AT A GIVEN PERIOD. But here A DIFFERENCE comes in. What he has to advance for CIRCULATION is the *weekly* MONETARY EXPRESSION OF THE NEW VARIABLE CAPITAL HE IS TO DISPENSE DURING THE YEAR. What he must pay is THAT MONETARY EXPRESSION OF ONE WEEK $\times 52$. The matter proceeds in this way. He employs e.g. 10 more workers a year, SAY = £520. THIS IS £1 WEEKLY per worker or £10 for 10 workers. [XVII-1052] But he has to lay out this £10 every week, since the outlay flows back to him not as money but as commodity. The *épiciier* receives the £10, buys a commodity from the manufacturer for it. If the circulation was previously 100—I mean this circulation between the manufacturer, *épiciier* and WORKMEN—it is now 110. The manufacturer continues to receive the £100 he EXPENDS FOR HIS OWN WORKMEN, REPLACED BY THE *épiciier*; he receives further, replaced by him, the £10 the gold producer SPENDS for his WORKMEN. The *épiciier* makes his profit on the £10 as on the 100. He sells the workers for £10 commodities of the value of £10, but they only cost him $\text{£}^{10/11}$ or $18^{2/11}\text{s.}$, if his profit on 100 = 10% (it is however much less on account of the turnover of the capital). The *épiciier* therefore pays the manufacturer 110 the first week. But the manufacturer only pays his workers 100. Hence the £10 the gold producer threw into circulation does not flow back into this circulation between worker and *épiciier*. But the *épiciier* must now buy £110 worth a week from the manufacturer. Every week he receives from the workers who produce gold this addition of £10 for circulation. Nevertheless only £110 circulates every week. Therefore, out of the £520 the gold producer has laid out in additional labour during the year, no more than £10 enters into the circulation between the manufacturer and the SHOPKEEPER. The basic sum of 510 is money which has replaced the capital of the manufacturer, i.e. commodities to this amount, in which capital and profit are both included. Assume that the SHOPKEEPER, who has to buy $\frac{1}{11}$ more from the manufacturer, bought in the 2nd week £110 worth, before he received the £10 from the gold producer's workers, that

he therefore advanced the £10 from his own capital. Thus the manufacturer lays aside £10 (within this circulation), since he only has to pay 100 to his own workers. In the 2nd week, the *épici*er receives £110, 100 from the manufacturer's workers, 10 from the gold producer's workers. But he already possesses commodities for £110 (deducting what he keeps for himself). To the manufacturer's workers he gives £100 in commodities, and to the gold producer's workers he gives £10. He therefore once again has £110.

The only difference is this: If the *épici*er has advanced the £10, so when the cycle is broken off he retains the £10 which flow to him from the gold producer's workers. If he paid the money from his receipts from the gold producer's workers, he has to hand over the £10 to the manufacturer.

In any case, £520 worth of the manufacturer's commodities are converted into money. The manufacturer pays the wage IN FACT only for the first week in money. Later he always pays it in commodities. For the money form of his commodities flows back to him from the 2nd week onwards from the *épici*er. Every week the gold producer pays in gold. But this gold does not enter into this circulation, or only in his exchange with his workers. It only serves once as the workers' means of payment, and is then converted in the hands of the manufacturer into THE MONETARY EXPRESSION OF THAT PART OF HIS CAPITAL WHICH DOES NOT *in natura* ENTER INTO THE CONSUMPTION OF HIS WORKMEN. I.e. it is converted into the MONETARY EXPRESSION (AS FAR AS IT GOES) OF THAT PART OF ITS PRODUCT WHICH REPRESENTS HIS CONSTANT CAPITAL AND HIS PROFIT. $\frac{1}{52}$ of the variable capital of the gold producer enters into the circulating money capital of the SHOPKEEPER, and therefore functions as CURRENCY between the SHOP[keeper], the manufacturer and the WORKMEN, $\frac{51}{52}$, on the other hand, becomes the expression of the constant capital and profit of the manufacturer. (Here we disregard the PROFIT of the SHOPKEEPER, which receives its MONETARY EXPRESSION in the $\frac{51}{52}$.)

Let us assume that the capital the manufacturer has laid out is £700. Then the gold manufacturer's 10 workers replace £520 for him. The £100 of "circulation" his workers cost him are to be found in the circuit between him and the SHOP[keeper]. Therefore he only has to turn into money a commodity value of £170 [XVII-1053] in order to realise the whole of his capital, CAPITAL and profit. Since his constant capital=600, he replaces, with this 520, 600-520, the whole of his constant capital except £80. If the profit=10%, he therefore has to replace a further £80 for constant capital and £70 for profit,=£150.

His constant capital amounts to variable capital+profit for the producer of constant capital. If wages again form $\frac{1}{7}$, the variable capital amounts to $7^2\frac{2}{7}$. And profit= $445\frac{5}{7}$. If the whole of this is given out, £520 flows back to him for commodities, since he provides the means of subsistence. And he only has to sell an additional £150 worth of commodities.

This much is clear *d'abord*,^a that even the part of the gold producer's capital that he lays out in wages does not remain in circulation as COIN, but adds at most the MONETARY EXPRESSION OF ONE WEEK'S WAGES to this circulation. He pays this part as wages. This is the way in which he throws this part into circulation. But it does not remain in circulation for the payment of the wage. It is converted instead into the money capital of the productive capitalist. If, as a result of an increase in the production of gold (we do not mean a rise in the productivity of the mines, etc., but a growth in the labour and capital invested in gold production), the manufacturer increased his own production, hence e.g. in the above case^b employed 10 more workers (an incorrect proportion: if the gold producer employs 10 more workers the manufacturer will employ at most one more) the process would be as follows: he had to pay £100 in wages to 100 workers, and now he has to pay 110 for 110 workers. But on our assumption the SHOPKEEPER receives £10 a week from the workers of the gold producer. This would be the calculation, assuming that the production of the manufacturer provided enough commodities for 10 workers in addition to his own.

1st week. SHOPKEEPER receives £10 from gold producer's workers. 100 from manufacturer's workers. Buys for £110 from the manufacturer. Buys with this from the manufacturer commodities to the value of £110. Manufacturer pays £100 of this to his workers, uses the £10 in some other way. Only £100 flows to the *épiciér* from the manufacturer's workers, but 10 flows from the gold producer's workers. The first £100 circulates constantly within this sphere. The last £10 is constantly thrown afresh into *this* circulation every week, but does not return to it.

2nd week. Assume that the manufacturer increases his production by 10 workers as a result of new demand from the gold producer. He therefore pays a wage of £110. The SHOPKEEPER now sells for £110 to the manufacturer's workers, for 10 to the gold producer's workers. He buys for £120 from the manufacturer. But the manufacturer only needs £110 for wages. £10 therefore

^a At the outset.—*Ed.*

^b See this volume, pp. 194-96.—*Ed.*

flows back. Therefore if he increases his own variable capital as a result of an increase in gold production, he only increases—*quoad* circulation—the *weekly* expression of his addition to variable capital. The gold of the gold producer which flows to him afresh every week—BEYOND THIS POINT—does not flow back to *this* section of circulation.

Let us now take the part of the profit which the gold producer expends as INCOME. Apart from particular expenditures, he will sometimes buy commodities of greater value, sometimes of smaller. For example, some furniture, jewels, etc., horses, carriages, etc., may have a high price, so that much gold must be expended at one time in the sale. But we can take an average. For 10 weeks he throws into circulation perhaps £10, while for 2 weeks 100 each time. If that is right, he would have thrown into circulation in the 12 weeks gold to the value of £1,200. That makes £100 a week. Over the year he throws £1,200 in gold into circulation. But we can calculate the quantity, which remains constant in this circulation between him, his SHOPKEEPER and the MANUFACTURER and FARMER, AS ABOUT £100. The remainder, £1,100, goes into the pockets of the manufacturer and FARMER (in part into the SHOPKEEPER'S pockets), in order to serve in another *sector of circulation*, or it lies there as latent capital. If production is increased in this way, the *WEEKLY MONETARY EXPRESSION OF THE WAGES OF THE ADDITIONAL LABOURERS* must be added to this. The greater part of this gold is however withdrawn both from the circulation between SHOPKEEPER, WORKMEN and MANUFACTURER, and from the circulation between SHOPKEEPER, MANUFACTURER AND GOLD-PRODUCING [XVII-1054] capitalist.

The 3rd part of his product, finally, is exchanged for constant capital, where it again pays for wages (variable capital) and constant capital. Speaking of the former, what we said previously applies. Most of it is withdrawn from the sphere of circulation, into which it is thrown, and does not return there. Let us assume it is £110, and £10 of this represents the profit of the producer of the constant capital. Let $\frac{1}{5}$ of his outgoings of £100=labour,⁴⁵ hence £20. This £20 does not return to circulation (or only a small part of it for an increased outlay in labour). The £20 replaces $\frac{1}{4}$ of the constant capital in money, SINCE $\frac{80}{4}=20$. 70 remains to be replaced profit included. But the circulation which occurs within the sphere of circulation of the exchange of the constant capital is sufficient to realise the £80. Of the 20 paid for the variable capital, a half—10—is sufficient for the realisation of the profit. Of the £100 the producer of the constant capital

receives 90 is therefore superfluous for his circulation. (Or at least most of the 90, if he expands his business as a result of the demand from the gold producer.) What now happens to this £90? To the producer of the constant capital it represents not an equivalent for profit but an equivalent for capital. He receives back more of the equivalent for his capital in money, an excess quantity in money, which he needs in the natural form of his capital as RETURN.

Let the whole of the annual productive capital consist of 6 million, i.e. let this be the magnitude of the part of the capital which comes onto the market as a commodity and which therefore includes the annual depreciation of the constant capital. Assume that the variable part of this capital = $\frac{1}{6}$, = 1 million. Then all that

needs to be circulated for this in money is $\frac{1 \text{ million}}{52} = 19,230$.

This 19,230 in fact circulates 52 times its own value in commodities. There therefore remain to be realised 5 million + 19,230. Assume further that the profit (rent included) = 30%, hence 1,800,000 on the 6 million. Assume that this profit is completely consumed. If the capitalists, like the workers, were to spend their income roughly immediately in equal weekly portions, this would require $34,615\frac{5}{13}$ a week. However, on account of the larger occasional and periodic purchases let us say 100,000. Then we have ABOUT 119,230 for CURRENCY. For the CURRENCY which is expended as profit. This sum replaces not only the profit of the producers of the means of subsistence, but their variable *capital*; it replaces not only the profit of the producers of constant capital but at the same time their variable capital. Let us assume that the proportion of variable to constant capital is in general 1:5. This proportion is not displayed exactly in the division of the 6 million, because it is merely the depreciation of the fixed capital which enters into it, not the fixed capital itself. According to our previous calculation, 2,800,000 of this consists of means of subsistence (1 million for replacement of the total variable capital of the society, and 1,800,000 for the profit on the total capital) and this is circulated on our first calculation by £108,334. Since these commodities of 2,800,000 are the product of the capitalists who produce the means of subsistence, their total product = £2,800,000. This includes their capital advanced + a profit of 20%. Hence $\frac{1}{6}$ of this amount consists of their profit, and the remainder consists of capital advanced. Out of the £2,800,000, therefore, $466,666\frac{4}{6}$ is profit and 2,333,334 is capital

advanced. The profit these producers consume in their own reciprocal commodities, or rather this reciprocal consumption of their profit in their reciprocal commodities, may occur in three ways. They may buy simultaneously or on credit from each other. In both cases, there is at most a balance to be paid, now from one, now from another. Or one may buy today from the other in CASH, the other tomorrow in CASH from the former. In this CASE—the *most unfavourable* case for the reduction of the CASH present in CURRENCY—there takes place at all events a REFLUX movement of money and through this REFLUX movement a circulation of money. Here a definite sum of money circulates, and pays many times over in the same hands for different portions of commodity value. Let us say it passes through each pair of hands 10 times. Thus only $\frac{1}{10}$ is needed of the amount that would otherwise be necessary to circulate the above profit. Assume that the profit of 466,333 referred to= $\frac{1}{4}$ of the 1,800,000, of which it forms an aliquot PART. (It is more than $\frac{1}{4}$.) Then, if a circulation of £100,000 is required for £1,800,000, £25,000 is required for $\frac{1}{4}$ of that. But this 25,000 should be reduced to a tenth of that amount. There therefore remain 75,000+2,500, or £77,500, for the total circulation present in profit. Furthermore, if the proportion of variable to constant capital in [XVII-1055] this sphere of production=1:5, the capital of 2,333,334 will be divided into $\frac{1}{5}$ variable capital and $\frac{4}{5}$ constant. The variable=466,666 $\frac{4}{5}$, say 466,667, and the constant=1,866,667. £8,974 is required for the circulation of the variable capital, and this is already calculated in the circulation of the total variable capital. There remain £1,866,667, with which the producers of the means of subsistence pay for their constant capital, and with which the workers and capitalists employed in the manufacture of the constant capital replace their variable capital and realise their profit, in short expend wages and profit.

After deduction of the 2,333,334 which are employed in the production of the means of subsistence there remain 3,666,666 of the capital of 6 million. £533,333 of this is variable capital (since variable capital is 1 million altogether and 466,667 falls to the workers in sphere I, that of the production of the means of subsistence). There remains a constant capital of 3,133,333. This amount, with which the capitalists of sphere II realise their profits and their variable capital, is sufficient to allow class I to replace its constant capital. £2,500 for profit and £8,974 for wages is sufficient for class I (for the circulation within it). So there remains for circulation between class I and class II, etc.¹³⁶

The calculation SOMEWHAT ELSE TO TURN.

//We had a capital of 6 million. 20% profit=1,800,000. Hence the value of all the commodities in circulation=7,800,000. If 2,800,000 consist of means of subsistence, a constant capital of 5,000,000 remains over. (The proportion is greater here because only the part of the constant capital which enters as depreciation into the commodity enters into the *value* of the annually circulating commodity.)//

Hence I) £2,800,000. *Sphere of the capital employed in the production of the means of subsistence.*

Out of these commodities of the value of £2,800,000 20% represent profit—ABOUT 466,667—and the remainder, capital=2,333,333. 388,888 of this capital is variable capital. There remains a constant capital of 1,944,445.¹³⁷

There circulates within this sphere for the variable capital $\frac{388,888}{52}$, of which the weekly MONETARY expression=ABOUT 7,477

(7,476 ³⁶/₅₂ to be precise). And there circulates for the profit, which is on our assumption entirely consumed, say for all expenditure of income (which is not wages), $\frac{1}{10}$ of the total amount, which would be ABOUT 46,667. But since the consumers of the profit are reciprocally dealers in the commodities they consume, a REFLUX takes place here. The butcher buys from the baker, and with the same money the baker buys from the butcher and the butcher again from the baker. Through the REFLUX movement, therefore, *the same* sum of money passes through the same hands. Say this turnover takes place 10 times on the average. Then only $\frac{1}{10}$ of the previous amount is required to turn the profit into money. There therefore remains about £4,666, whereby we have not made any attempt to calculate how much of his own commodities the SHOPKEEPER, etc., gobbles up.

In this sphere, therefore, what is required for circulation within it is £7,477 for wages and £4,666 for profit. Taken together=£12,143 in money.

The remaining £1,944,445 worth of commodities of class I are sold to class II, the manufacturers of constant capital.

So now to class II. Its capital, with profit,=a commodity value of £50,000,000. Of this, profit=somewhat more than 833,333. Out of the 5 million, the 1,944,445 replace the part of the product which consists of wages and profit; wages thus=1,111,112. In order to pay these wages, $\frac{1,111,112}{52}$ is needed,=£21,367. And to pay the profit say $\frac{1}{10}$ of the amount is needed, hence 83,333. Thus the

total amount of money that has to circulate [XVII-1056] = $83,333 + \pounds 21,367 = \pounds 104,700$. With this $\pounds 104,700$ the capitalists and workers of class II buy their means of subsistence from class I, and class I buys the replacement of its constant capital *in natura* from class II. A REFLUX takes place. Class II buys e.g. means of subsistence from class I for $\pounds 100$; class I uses the same $\pounds 100$ to buy constant capital from class II. It is like a wagon which travels backwards and forwards, first taking A's load to B and then on the return journey taking B's freight to A. With this money, therefore, a commodity value not of $\pounds 1,944,445$ is realised, but one of $2 \times \pounds 1,944,445 = \pounds 3,888,890$. The same amount of money realises the constant capital of I, and the variable capital and profit of class II. There therefore remains of the 5 million of class II:

III) $\pounds 5 \text{ million} - \pounds 1,944,445 = \pounds 3,055,555$. Let us assume that only $\frac{1}{10}$ of this is replaced *in natura*, which as regards agriculture is much too little. This part does not enter into circulation at all, and does not need to be turned into gold. ABOUT 305,555 should be deducted from the amount to be realised. There remain: $\pounds 2,750,000$ worth of commodities. This 2nd circulation in class II is a mere reciprocal TRANSFER of capital, an exchange mediated through money. The iron producer buys coal from the coal producer, the latter in turn buys machines from the machine-builder, he in turn buys iron from the iron producer, etc. The money here will for the most part circulate as means of payment and only balances will be paid in money. But even if it circulates itself, at most $\frac{1}{20}$ is required. $\frac{2,750,000}{20} = 137,500$.

What is required altogether, therefore, to realise the capital of 6 million as well as a profit of 1,800,000 (wrong again, should be 1,200,000, for this is $\frac{1}{5}$ of 6 million or 20%, BUT NEVER MIND), to realise commodities of the value of 6 million plus profit of 1,200,000, or $\pounds 7,200,000$ worth, is the following:

$\pounds 12,143$ circulating in class I;
 $\pounds 104,700$ between class I and class II;
 $\pounds 137,500$ in class II. Makes together: $\pounds 254,343$ in money.

Sum total: 254,343.

We have assumed in this connection that out of the capital of 6 million, variable capital = $388,888 + 1,111,112 = 1,500,000$, hence the variable capital = $\frac{1}{4}$ of the capital advanced. This is somewhat more than $\frac{1}{6}$ of the capital advanced in wages. The adjustment of

balances and credit, etc., has not been brought into the calculation. Hence if the gold producer only provided enough gold to realise $\frac{1}{6}$ of the capital laid out in wages, or, what is the same thing, if enough of the commodity was exported to return gold from the mining countries, etc., this would be sufficient to provide the whole CURRENCY. And once this had been imported, it would be enough (deducting wear and tear on the money) as long as the mode of production remained the same.

What is in general needed to enable the capitalist to withdraw more money from circulation than he throws into it is nothing more than this: enough money must circulate in order to convert into money the commodity values which are circulating. It is not yet necessary for this purpose that $\frac{1}{6}$ of the capital should be available as money; this is the annual amount of money which has to be paid out in wages alone. The amount which is needed, however, is provided by the part of capital which is exchanged directly for gold, i.e. the commodities which are sold to the producers of gold and silver, and bring back BULLION in RETURN. But a part of the capital is accumulated as hoard, under its various aspects. Thus one part always lies idle. Assume that the capital which circulates annually in commodities = £110. And $\frac{1}{10}$ is required to convert it into gold, hence £10. If then £10 worth of commodities are exported and exchanged for gold, this is divided up among the whole class which produces the £110 worth of commodities.

[XVII-1057] Just as the producers of the means of consumption replace the variable capital and the part of the production of all classes expended as income, so these gold importing elements (THE SAME AS GOLD PRODUCING PART) of the COMMUNITY replace the money needed for the circulation of the whole of the capital.

After what we have developed so far, the following two points should first be made:

Firstly: The turnovers of the same amount of money effected by the REFLUX are always accompanied by turnovers of the same *monetary individuals*, while the number of different turnovers performed by the same monetary individuals by no means includes the REFLUX. E.g. £100 from the SHOPKEEPER to the manufacturer, from the manufacturer to the worker, from the worker back to the SHOPKEEPER. Here the same money makes 3 turnovers. At any rate 2, from the manufacturer to the workers, from the workers to the SHOPKEEPER. In addition to this, the REFLUX includes the repetition of this cycle, for *the same amount of money*, whether this consists of the same identical pieces of money or not.

A piece of money, on the other hand, may turn over 10 times in one day without expressing a REFLUX. I buy a commodity for 5s., the SHOPKEEPER gives the 5s. to another buyer in the change for £1, who in turn pays a worker with it, the worker makes a purchase with it, etc. The mere rapidity of turnover of *the same* piece of money—mostly in inverse proportion to its magnitude—is different from the rapidity with which the cycle passes through its phases and is repeated.

Secondly. Where money as *coin* appears in $C—M—C$ in the first conception, i.e. the conversion of the commodity into means of subsistence for its producer or owner, it only functions, first as paid out wages, $W—M—C$; second where profit, interest, rent, etc. (also the wages of the unproductive) are spent as income. For here the M that they expend represents the exchange value form of a sold commodity, to be subsequently resolved into means of subsistence. $C—M—C$. The fact that the money expended in this way simultaneously replaces a capital (capital+profit) does not alter the situation at all. On the other hand, all other functions in which money appears *in circulation* are always forms in which it constitutes a phase of capitalist reproduction, which either does not proceed as far as RETAIL at all (as the EXCHANGE OF CONSTANT CAPITAL FOR CONSTANT CAPITAL), or is, at least, a PREVIOUS PROCESS. As long as it circulates in this way it is money capital. For the RETAILER, the income taken from the other is admittedly also money capital. But this is not reciprocal. Here the money does not derive from the metamorphosis of *capital as such*, but from incomes which have arisen from it and become separated off.

We have examined the cycle performed by the same amount of money between SHOPKEEPER, manufacturer and worker; which is IN FACT—if we leave aside the mediating SHOPKEEPER—the circulation of *the same* amount of money between manufacturer and worker. The manufacturer buys with *the same* money labour⁴³ which is always new, and the worker buys with the same money *commodities that are always new*. The manufacturer (if we leave aside the SHOP[keeper]) originally throws this money into circulation. He must therefore have originally received it from circulation; but from the circulation with the gold producer. Or this process took place earlier and he possesses this money as a part of his capital accumulated in money form, just as he possesses another part in machinery. If the weekly value of his commodity=£600 (including £100 of profit, or 20% [of the capital advanced]) and the wage to be paid every week=£100, he must sell $\frac{1}{6}$ of his commodity to the gold producer. He then has once and for all the £100 he needs

for the weekly payment of the wage. Suppose that the whole of his capital is 1,500, of which 1,000 is fixed capital, 398 a week *matière brute et instrumentale*,^a 100 a week wages. Suppose the fixed capital is used up over a cycle of 10 years. Then he needs £100 a year for depreciation. And £2 a week (we shall reckon 50 weeks of labour a year). He therefore has a depreciation of £2 a week. 398 *matière brute* and *instrumentale* and 100 wages=an advance of £500, on which there is 20[%] profit=100. He perhaps has to replace the depreciation of £100 only once in the year (probably less often). The first week he takes in £600, of which 100 are not exchanged for commodities but for money. He has therefore converted the whole of his profit into money. Or he brought £100 more, apart from the WORKING CAPITAL. (This is IN FACT advanced by the SHOPKEEPER.) Or he can consume none of his profit in the first week. For he possesses $\frac{1}{6}$ of the commodity in gold, his workers consume $\frac{1}{6}$, and $\frac{4}{6}$ replace his constant capital. In the next week he does not need to buy gold from the gold producer with any part of his commodity in order to be able to pay the wages. But in the 1ST WEEK he needs a part of his capital twice over. Firstly in the form of the commodity, the $\frac{1}{6}$ that the workers will consume, secondly in the form of gold, so as to enable the workers [XVII-1058] to buy their $\frac{1}{6}$ from him. During this week, therefore, he must have currency in reserve for his own consumption, money which does not flow to him from the business but which he has inherited, etc., or he must live by borrowing, which is likely if he starts his production with £500.

In the 2nd week he does not need to possess $\frac{1}{6}$ of his commodity in dual form as commodity and as money; for the £100 of wages flow back to him from the worker in payment for the commodity.

Hence in order to maintain this circulation between himself and the worker in existence he only needs to buy gold from the gold producer with $\frac{1}{6}$ of the product of a week.

There is always the question of who *first* throws into circulation the part of the money present therein. The answer is: it is always the capitalist, whether he be producer or MERCHANT; never the worker or the recipient of interest or rent. He who loans out at interest throws capital into circulation, i.e. TRANSFERS IT TO THE PRODUCTIVE CAPITALIST; but it is the latter who first throws it really into circulation.

The *recipient of rent* receives his money in part from the FARMING

^a Raw material and instrumental material.—Ed.

CAPITALIST, in part from the INDUSTRIAL CAPITALIST (who works mines, etc., and for buildings) (and the rent of houses); further, he receives it from the worker. (Part of the rent of land, and the rent of his house.) In so far as rent is provided in currency by the *workers*, this part of its MONETARY EXPRESSION (just as with the SHOPKEEPER who sells means of subsistence to the workers) is drawn from the circulation between capitalist and workers, hence contained in the CURRENCY which circulates for wages. Admittedly this part does not flow back as quickly (if the manufacturer is not himself the LANDLORD of the FARMER, which is very often the CASE) as the part of the wages given out for the means of subsistence. Yet this latter CASE is a peculiar one. The same money which the MANUFACTURER OF FARMER here gives out as a wage realises for him the rent he takes as LANDLORD, or the rental he takes as a letter of houses, leaving aside the fact that it replaces for him the depreciation of his commodities. The worker receives the value, namely the house, which he rents by the week. But a part of this value can be reduced to house- and ground-rent. And what the manufacturer pays as manufacturer simultaneously turns into money for him his revenue as LANDLORD and house-letting capitalist. He himself has advanced the CURRENCY for this in the purchase of labour.⁴³ But the worker pays back to him ground- and house-rent.

He makes 2 transactions with the worker. He buys his labour with money, and secondly he sells him housing and receives back for it a part of this money. But the value he sells here to the worker is not entirely paid by him; it contains unpaid labour. By paying this to him, the worker pays him ground- and house-rent. There is therefore no contradiction in the fact that in drawing back the money he himself has thrown into circulation he draws back more money than he threw into circulation, i.e. more money than the paid value he threw in. For all LANDLORDS and house-letters, in so far as their ground- and house-rent is paid by the workers (just as with the taxes), the same money circulates the wage and realises a part of the rent and the interest on capital, hence monetises a part of the surplus value. All that is needed to monetise the whole of this part of surplus value, which can be reduced to the rent and interest on houses^a paid by the worker, is the CURRENCY necessary for the payment of wages. The same is true of the profit of the SHOPKEEPER who trades with the workers.

The ground-rent of buildings, etc., forms part of the costs of fixed capital. Therefore a part of the CURRENCY which the

^a See present edition, Vol. 31, p. 572; Vol. 32, p. 18.—Ed.

productive capitalists advance for the fixed capital simultaneously monetises a part of the SURPLUS VALUE, namely the rent of land.

Rent on private houses, etc., forms part of the expenditure through which the capitalist SPENDS HIS PROFITS; the actual rent paid by the FARMER, MINING CAPITALIST, etc., forms a part of the surplus value of their products.

With the money he receives for rent the LANDLORD buys commodities from the manufacturer and FARMER, or he buys them from the SHOPKEEPER, who pays the manufacturer and FARMER with it. Therefore once this part of the CURRENCY exists, it flows back continuously to the productive capitalists, just as the money for wages does, although they must again withdraw it from circulation by means of commodities. But it is enough to enable them to pay the rent in the form of money over and over again, in order to receive the money back for commodities. But more flows back to them, namely the part of the rent which the workers pay to the LANDLORD as rent of their houses or the part the MANUFACTURER has paid as rent for buildings. Therefore the CURRENCY which monetises the rent is sufficient not only to pay it over and over again, but to pay the part of the wage which is resolved into rent, and the part of the costs of fixed capital which is resolved into rent. But it is only the part of the rent which does not always flow [from] wages or fixed capital that necessitates its own circulation of money, A SPECIFIC SUM OF CURRENCY OF ITS OWN.

[XVII-1059] What is true of rent (to the LANDLORD) and interest (to the money-lender) is true of profit itself (*whether interest be paid to another person or not, whether or not, consequently, it be included in the revenue of the producing capitalist), as far as the productive capitalist spends it, and spend it he must, in some part, since he lives upon it.* The money given out in THE SPENDING OF PROFIT, money thrown into circulation, *contributes as well as the money spent in the realisation of rent and interest to provide the monetary means for paying the capitalist.

The monetary expression of rent, interest, profit, as far as they buy commodities for individual consumption,* must flow back to the PRODUCTIVE CAPITALIST as means of purchase or payment just as much as does the MONETARY EXPRESSION OF WAGES. The profit, RENT, INTEREST HAVE BEEN SPENT DURING LAST YEAR; the money given out for them is no longer in the hands of the LANDLORD, rentier, PRODUCER, but in those of the *épiciier*, who pays the WHOLESALE DEALER with it, who in turn pays the PRODUCTIVE CAPITALIST. In the same measure as this money flows back to the SHOPKEEPER, HIS STORE HAS BECOME EMPTIED AND WANTS REFILLING. The money therefore performs in reverse the same

course as it performed *d'abord* in a forward direction. Since it thereby realises the commodity values of the PRODUCTIVE CAPITALIST, the latter is able to pay RENT and interest with the same money and TO EXPEND FOR HIS OWN USE another part of the surplus value.

For the productive capitalist to withdraw from circulation more money than he threw into it nothing more is necessary than that enough money should circulate in order to pay the commodity values. If BARTER were to occur, one would find nothing mysterious in the fact that the capitalist withdraws more commodity value from circulation at the end of the cycle than he threw in in the form of money. For at the end of the cycle he has a greater commodity value to exchange. The origin of the whole PERPLEXED QUESTION is therefore that one does not see where the CURRENCY is to come from, the REAL MONETARY EXPRESSION OF THAT ENHANCED VALUE. WHAT PUZZLES is that more is withdrawn from circulation by the capitalist than is thrown in, which is the more PUZZLING in that he himself—as a class—IN FACT possesses the whole of the monetary wealth (*possesses it* because he directly owns the whole of the surplus value, whatever he may have to give up of this). But *il faut distinguer*.^a As capitalist he throws his capital alone into circulation (i.e. THE MONETARY EXPRESSION OF IT), but as a fellow who has realised profit (or if he has not yet realised any he must possess OTHER MEANS), he throws PART OF THE MONETARY EXPRESSION OF HIS SURPLUS VALUE into circulation, just as THE MONETARY EXPRESSION OF THE OTHER PART OF THAT SURPLUS VALUE—OF RENT AND INTEREST—IS CONTINUALLY THROWN INTO CIRCULATION by the LANDLORD and the *rentier* and lastly the MONETARY EXPRESSION OF WAGES is thrown in BY THE WORKMEN. If a capitalist has thrown into circulation £1,000, i.e. employed it reproductively, and at the same time consumed £200 (*sub specie* of profit), and if his profit=20%, he has thrown into circulation exactly as much money as is necessary in order to give monetary expression to his commodity,=1,200, his capital+his surplus value. He has not made a gift to circulation, either with the £1,000 or with the £200; he has withdrawn commodity values in return for this money, for the 200 he has withdrawn as much as he threw in, for the 1,000 he has withdrawn 20% more. Nevertheless, he has provided the MONETARY EXPRESSION with which the commodity value of £1,200 can be paid to him, and, if we view the capitalist as one person with the PARTNERS IN THE SURPLUS VALUE ABSORBED BY HIM // *The Times* for November 19, 1862 [p. 9] calls the Lancashire manufacturers

^a One must make distinctions.—Ed.

“WEALTH ABSORBERS” and their workers “WEALTH-WINNERS” *//, he has in fact himself provided the money with which he is paid; but he has provided it IN EXCHANGE FOR COMMODITIES and (AS FAR AS IT IS GOLD, ETC.) himself ORIGINALLY RECEIVED it IN EXCHANGE FOR THE LABOUR OF HIS MEN.

*The first class of productive capitalists consists of those who produce the means of subsistence in their final form, in the form in which they enter into individual consumption. The value of their annual product consists of two parts: [The first part is] constant capital, which contains the depreciation of the fixed capital, this depreciation entering annually into the product. The other part, which remains unconsumed, has nothing to do with the value of the product (although, in the AVERAGE RATE OF PROFIT, profit and interest on this part of the capital advanced are reckoned just as much as on any other part. But even in this case the fixed capital only enters here as an ANNUITY, depreciation+profit on top, as with the second class of capitalist. We leave out the profit here as we are separating the surplus value). It consists secondly of raw material and *matière instrumentale*, which *in natura* in part, and in value every time, entirely enter into the product, because they are entirely consumed in the production process. Secondly: variable capital. In the hands of the capitalist this exists as money; once it is realised it exists as labour. For the worker who provides the commodity in which this part of the capital is realised, it exists as WAGES. Finally the 3rd part of the product. *Surplus value*, which can be resolved into profit (interest) and in part into rent.*

The whole of the annual product of this class, in so far as it enters into annual consumption, enters into individual consumption. Here we are leaving accumulation entirely to one side, for the moment, and only examining simple reproduction. A part of this product [XVII-1060] is bought by the workers of this class I, hence paid back with the money which is given them in WAGES by the capitalists. Or the money in which the variable capital of this class is paid out buys back an appropriate part of the value of the product. This money thereby flows back to the productive capitalist. This is not a *replacement* of the part of the capital

* In a LEADER occasioned by the Manchester DISTRESS,¹³⁸ where the Manch[ester] men went begging to the whole of England FOR “THEIR POOR WORKMEN”, but nervously buttoned up their own purses, and, as Mr. Cobden says, QUITE JUST SO. Of course. If alms are given by those who do not directly participate in the exploitation of these particular workers, that is philanthropic. But for the capitalists themselves to be compelled to pay tribute instead of WAGES [XVII-1060] to their own workers once they cease to be able to exploit them, would be “AGAINST THE SOUND PRINCIPLES OF POLITICAL ECONOMY” and “WOULD”, AS *The Morning Star* INSINUATED, “SMACK OF SOCIALIST PERVERSION”.¹³⁹

consumed by the workers; it is however the REFLUX to the productive capitalist of the CURRENCY in which he has paid the workers and with which he buys them afresh. The more or less small part of the surplus value which is consumed *in natura* in this class does not need any monetary expression, since it is appropriated by the producer in its natural form and does not enter into circulation. AS TO THE OTHER PART, the rent, interest, profit, which were paid the previous year (or, if the business is in progress, *au fur et à mesure* of the reproduction (AS TO THE PRODUCTIVE CAPITALIST)) (or, if the business is *begun afresh*, from the currency reserve of the productive capitalist), are used to buy back the appropriate part of the value of the total product of class I. In this way the CURRENCY in which the productive capitalist pays rent and interest flows back to him. Not as a replacement for what he has paid; but for the commodities he is selling afresh for the money he himself has provided. It is not a replacement for the interest, rent, etc., paid the previous year, but a REFLUX to productive capital of the CURRENCY in which he has paid the LANDLORD and the rentier and in which he will pay them afresh. He will give them back the same tokens as a claim on the aliquot part owing to them of the commodity SURPLUS, which represents their share in the surplus value of these commodities. Finally, if e.g. capitalist A, a member of this class, which can be divided into an immense number of particular spheres—as numerous as the means of subsistence themselves—buys means of subsistence from B, C, D, E, he thereby enables them to realise in money the aliquot PART, consumed by him, of the product A—the part consumed by the productive capitalist himself. They in turn enable him to realise his own product in money, until everyone has drawn from someone else's pocket the MONETARY EXPRESSION of the consumed part of his product. Thus the CURRENCY with which each of them has bought, and will buy again, the commodity of the other, flows back to each one. The part of the value of product I which consists of variable capital and surplus value (profit, interest, RENT) is thus entirely realised in money.

But as far the other part of capital I is concerned, constant capital, this must be replaced *in natura*, reconverted from the form of the FINAL commodity into its elements of production, raw material, machinery, *matière instrumentale*, etc. (We consider the part of these products which enters again into their own reproduction as a condition of production, such as corn, coal, etc., as belonging to 2 from this point of view. By the way, corn is not directly a means of subsistence, at most flour is. Fruit, eggs, etc.,

poultry, etc., are though.) Or this part of capital I must be bought by class II. We therefore come now to the circulation of money between these two classes.

Second class. Its product consists similarly of *constant capital* (raw material, *matière instrumentale* and depreciation of the fixed capital), *variable capital* and *surplus value*, which is in turn divided in the form of profit (interest) and rent. But the product of this class does not enter into individual consumption (one might deduct dwellings, which enter into both individual and productive consumption. But this division is necessary for clarity) (or in so far as it does enter, it is class I, the section of class I whose product is simultaneously an element of variable and of constant capital). Neither the money which represents the variable capital of this class, nor the surplus value which is realised in its product, can BE SPENT IN THE PRODUCE OF THIS CLASS.

In order now to determine the circulation between these 2 classes, we start with the MOST EVIDENT POINT.

Class II pays its variable capital out in money, as does class I, but this money does not flow back *directly* to the productive capitalist, as was the case *under I*). The worker buys his means of subsistence from class I. The WHOLE MONETARY EXPRESSION OF THE VARIABLE CAPITAL OF CLASS II therefore flows to the productive capitalists of class I. With it they buy from the productive capitalists of II a product value—i.e. constant capital, raw material, etc.—which is equal to the value of the variable capital of II. By this *detour* the CURRENCY originally given out by the capitalists of II and needed by them *for the payment of wages* flows back to them. At the same time they have by this detour sold the part of their product which equals the value of the variable capital to class I, and the latter class has TO THAT AMOUNT RECONVERTED ITS PRODUCE INTO THE ELEMENTARY CONSTITUENTS OF THAT PRODUCE. //This mediation must occur with class I as well, in the case of those who produce means of subsistence which do not enter into the workers' consumption. Their workers buy from the other capitalists of I and thus provide them with the money with which they in part give monetary expression to interest, rent, profit and use this to buy (as SPENDING of income) from the capitalists of I who do not produce means of subsistence for the workers. They thereby replace for the latter the CURRENCY needed for their variable capital. At the same time this CURRENCY serves for them as the monetary expression of a part of the profit, etc.// //Once banks have developed, the money [XVII-1061] for wages IN FACT returns every week to the productive capitalist, and it is a matter of indifference whether it would otherwise only have

returned to him by detour.// In any case we see here how the same sum of money circulates between a productive capitalist and his workers, is then paid out by these workers to another class of productive capitalists, and is laid out by these as capital in the purchase of the commodities of the first productive capitalist and thus returns to him. The purchase of constant capital on the part of class I occurs—since it is a conversion of capital into its elements, not a conversion of income into the means of subsistence—at longer intervals of time and in larger amounts, corresponding to the scale on which production takes place and to the conditions of reproduction of capital in each of the particular spheres of I. The money paid out in wages therefore does not flow back every week to class II, but at greater intervals and in greater quantities, so that one cannot tell at all by looking at this money where it comes from. In agriculture too, by the way, and in certain urban trades, even if wages are paid by the week, a great deal of labour is employed at certain times, hence a lot of wages is paid, while at other periods in the year little is employed and little paid. The reflux therefore does not take place as smoothly as CLOCKWORK. But all that is needed here is to grasp the *essential* movement. Its further course should first be developed under the *credit system*⁶⁷; but to understand this, PREVIOUS KNOWLEDGE OF THIS ESSENTIAL MOVEMENT is necessary. The exchange of the part of the product of class II which represents its surplus value for the constant capital of class I, which exists in means of subsistence, is tangibly demonstrated on the world market, e.g. in the exchange of English CALICOES for cotton, or the exchange of English machinery and yarn for foreign wheat, etc.

Finally, as far as concerns the income which can be utilised in this sphere in the form of profit (interest, rent), its monetised existence of the previous year, etc., is consumed in the last remaining part of the product of class I. There thus flows to class I the money with which it buys back from class II the part of its constant capital which is still missing. The money for its surplus value thus flows back to this class.

In this way the productive capitalists of I and II, apart from the fact that their fund for income is established in the form of money, are [able] to pay interest and rent in money to the lenders of capital and the LANDLORDS, whereupon the whole process begins again. It must be noted here, once more, that a reproduction of capital for class I is a realisation of surplus value in money for class II; and, further, that the *way in which the money flows from II to I*, precisely because this is in the form of daily expenditure or

occasionally (irregularly) more important expenditures—since it is the expenditure of income and therefore corresponds to the needs and whims of individual consumption—must differ from the way and form in which the same sum of money flows back from I to II, since this is a reconversion of capital existing as money into productive capital; and the quantities in which purchases are made here, ditto the intervals [of payment], must correspond to the conditions of production of both capitals.

It is clear that if the capitalist SPENDS £200 IN REVENUE and throws £1,000 into circulation as capital, but withdraws £1,200, he has withdrawn from circulation more money than he threw into it, for as capitalist he has only thrown £1,000 into circulation. He has spent the £200 on means of subsistence of equal value, which have passed into his consumption fund. In short, as mere money-owner, and spender, not as capitalist.

Class I has now replaced the whole of its constant capital *in natura*, its variable capital in money, and similarly its income fund in money (profit (interest, rent)) and it has nothing further to buy from class II, nothing further to pay to it (since we are for the moment not speaking of accumulation here). That part of agriculture, as for example the cultivation of corn, etc., the breeding of cattle, etc., belongs at the same time to class II, i.e. is at the same time a producer of constant capital, does not alter this situation. To the extent that agriculture does belong to class II, what we shall now develop further in relation to class II applies to it as well.

We showed previously—presupposing reproduction on the same scale—that the new labour added during the year, or the value produced during the year, = the variable capital reproduced + the surplus value, cannot buy any more or pay for any more than what has just been discussed, i.e. the annual product of the articles which enter into individual consumption (class I) and the part of the *product* of the producers of constant capital which represents the variable capital and the incomes of class II.

Adam Smith would have been entirely correct if he had said that this part of the annual product resolves itself into mere income, which is paid by wages, profit (interest), rent. He would nevertheless have had to add here too that this total income replaces the total constant capital of class I. But Smith is wrong in asserting this of the totality of the annual product, and in having the constant capital of class II replaced by its income and that of class I. It is therefore also incorrect when Smith says the following.

Beforehand [XVII-1062] one further remark: under "DEALER" Smith includes all capitalists who participate in the production process and the circulation process,¹⁴⁰ under "CONSUMERS" he includes the workers and the capitalists, LANDLORDS, etc., and their RETAINERS, AS FAR AS THEY SPEND REVENUE.

He says:

*"The circulation of every country may be considered as divided into two different branches—the *circulation of the dealers with one another, and the circulation between the dealers and consumers*. Though the same pieces of money, whether paper or metal, may be employed sometimes in the one circulation and sometimes in the other, *yet as both are constantly going on at the same time*, each requires a certain kind of money of one kind or another to carry it on. *The value of the goods circulated between the different dealers with one another never can exceed the value of those circulated between the dealers and the consumers, whatever is bought by the dealers being ultimately destined to be sold to the consumers*" (*Wealth of Nations*, McCulloch's edition* [Vol. II, pp. 79-80]).

This corresponds to Smith's incorrect analysis of the value of the commodity into WAGES, PROFIT and RENT. On this see our earlier remarks.^a And this incorrect view itself rests in turn on the fact that the accumulated capital—including the constant capital—in the capitalist mode of production originally flows from surplus labour, i.e. profit is converted into capital, from which it nevertheless by no means follows that the profit once converted into capital consists of "profit".

The VALUE of the GOODS CIRCULATED BETWEEN THE DIFFERENT DEALERS is always greater than the VALUE of the GOODS CIRCULATED BETWEEN THE DEALERS AND CONSUMERS, because the first circulation includes an EXCHANGE of the natural components of constant capital, which replaces a part of the value of the capital which the CONSUMER never pays. The *simultaneous* parallel course of the movements—and every successive moment of metamorphosis and reproduction appears at the same time as occurring simultaneously and in parallel—prevented Smith from seeing the movement itself. He would otherwise have found in the monetary circulation of capital a refutation rather than a confirmation of his proposition, which is derived from an incorrect analysis of the natural price.¹⁴¹ The phrase "DEALER" and "CONSUMER" is also disturbing, since the DEALERS—the productive capitalists—appear in that EXCHANGE simultaneously as the final "CONSUMERS", even if industrial CONSUMERS, not individual.

Tooke remarks as follows on the above passage from Adam Smith, which he makes into one of the basic foundations of his theory of money:

^a See present edition, Vol. 30, pp. 398-408 and Vol. 31, p. 106.—*Ed.*

*“All the transactions between dealers and dealers, by which are to be understood all sales from the producer or importer, through all the stages of intermediate processes of manufacture or otherwise to the retail dealer or the exporting merchant, are *resolvable* into *movements or transfers of capital*. Now transfers of capital do not necessarily suppose, nor do actually as a matter of fact entail, in the great majority of transactions, a passing of money, that is, bank notes or coin—I mean bodily, and not by fiction—at the time of the transfer. All the movements of capital may be, and the great majority are, effected by the operations of banking and credit without the intervention of actual payment in coin or bank notes, that is, actual, visible, and tangible bank notes, not suppositions bank notes, issued with one hand and received back by the other, or, more properly speaking, entered on one side of the ledger with a counter-entry on the other. *And there is the further important consideration, that the total amount of the transactions between dealers and dealers must, in the last resort, be determined and limited by the amount of those between dealers and consumers*” (Th. Tooke, *An Inquiry into the Currency Principle*,* London, 1844, [pp.] 35-36).

In the concluding sentence, Tooke repeats Adam Smith’s proposition, with the crudeness peculiar to him as a practitioner, in the process depriving it of its theoretical teeth. That the “TOTAL AMOUNT” of the “TRANSACTIONS BETWEEN DEALERS AND DEALERS” must be determined “IN THE LAST RESORT” by the AMOUNT of the TRANSACTIONS BETWEEN DEALERS and CONSUMERS is not subject to any doubt and is a triviality. The capital of the whole class that is employed in production at all depends in the “LAST RESORT” upon, and is therefore determined by, the amount of the product which the producer can sell, for it is only from the product he sells that he derives his profit. But Adam Smith, whose proposition Tooke thinks he is repeating, was not talking about this. Smith says: * “the *value* of the goods circulated between dealers and dealers” = “the *value* of those circulated between dealers and consumers”.* Tooke is exclusively concerned in the above-mentioned pamphlet with the struggle against the CURRENCY PRINCIPLE.¹⁴² The [XVII-1063] phrase that the CIRCULATION BETWEEN DEALERS and DEALERS can be resolved into “MOVEMENTS OR TRANSFERS OF CAPITAL” //he is only interested here, vis-à-vis his opponents, in the question of *how* the reciprocal obligations arising out of the circulation of capitals in the reproduction process are *settled*, a question which is theoretically entirely subordinate// shows the crudeness of the whole conception. “MOVEMENTS OF CAPITAL.” What was required was to determine and analyse precisely these MOVEMENTS. What underlies this is that he *means* the MOVEMENTS of capital in *the sphere of circulation*, for which reason he always understands under capital here money or commodity capital. “TRANSFERS OF CAPITAL” are very different from MOVEMENTS OF CAPITAL, although they are MOVEMENTS. They only apply in fact to mercantil-

ist capital, and they mean in fact nothing more than that the different phases, in which capital passes from the hands of one buyer to the next, are IN POINT OF FACT *only the movement of its own circulation*. The "MOVEMENTS" of capital, however, are qualitatively distinct phases of the reproduction process. "TRANSFER" OF CAPITAL also takes place when variable capital passes into the hands of the workers as wages, thus being converted into "CURRENCY". The long and short of the story is simply that in the movements of capital as such—before its definitive exchange as commodity with the consumers—the money only circulates as means of payment, hence functions in part exclusively as money of account, in part exclusively as balance, IF THERE BE ANY. Tooke concludes from this that the distinction between these two functions of money is a distinction between "CAPITAL" and "CURRENCY". In general he firstly confuses money and commodity with money and commodity as modes of existence of capital, with money and commodity capital, and secondly regards the particular money form in which the capital is circulated as a distinction between "capital" and "coin".

The following point by Tooke is a good one:

*"The business of bankers, setting aside the issue of promissory notes on demand, may be divided into two branches, corresponding with the distinction pointed out by Dr. Smith of the transactions between dealers and dealers, and between dealers and consumers. One branch of the banker's business is to collect capital from those who have not immediate employment for it, and to distribute or transfer it to those who have. The other branch is to receive deposits of the incomes of their customers, and to pay out the amount, as it is wanted for expenditure, by the latter in the objects of their consumption. The former may be considered as the business behind the counter, and the latter before or over the counter: the former being a *circulation of capital*, the latter of *currency*"* [*l.c.*, p. 36].

(I.e. the first circulation of money capital. This is not actual *circulation*, but *TRANSFER*. Real circulation always includes an objective moment of the reproduction process of capital. *TRANSFER*, as with MERCANTILE CAPITAL, puts one person in place of another; but the capital continues to be in the same phase as before. There is each time a transfer of money—or titles to property—from one to the other (or also a transfer of commodity), without the money's having undergone any metamorphosis. This is even truer of the *TRANSFER* OF MONETARY CAPITAL BY LOANS, etc., BY THE MEDIUM OF THE BANKER. The same is true of the *TRANSFER* by which the capitalist distributes the monetary expression of his surplus value in part to the rentier, in part to the LANDLORD. In the latter case it is distribution of income; in the former, distribution of capital. Only the *TRANSFER* of

MERCANTILE CAPITAL from ONE SORT OF MERCHANT TO THE OTHER brings commodity capital itself closer to its conversion into money.)

*“The distinction or separation in reasoning of *that branch* of banking which relates to the *concentration of capital* on the one hand and the *distribution of it on the other*, from *that branch* which is employed in administering the *circulation** for *local purposes of the district, is so important, etc.”* (l.c., [pp.] 36-37).

In class II as in class I the total product can be divided into 3 parts.

//Here it may be remarked incidentally: *capital*, as opposed to profit, is the name of the *amount of value advanced*. But it is not an amount of value. It is *capital* and therefore implies in this form a relation to profit. As long as the surplus value is not realised, hence the movement of capital as capital has not yet come to an end, the total product (surplus value included) is called capital; it is pregnant with surplus value, but the latter has not yet [XVII-1064] attained an independent position in relation to capital. It is still self-realising capital, HENCE capital absolutely.//

1)

2)

3)

Constant capital—Variable capital. Surplus value. (Profit, rent, interest.)

We have seen how 2) and 3) have been realised and have circulated in the exchange with 1). We have now to consider the first part, constant capital.

It consists a) of the *unconsumed* part of the fixed capital, which does not enter into the value of the product, and therefore does not come into consideration.

b) Secondly, however, it is necessary to replace the part of the value which represents the depreciation of the fixed capital and *matière instrumentale* and *matière brute, s'il y en a*.^a

Just as in class I the part of the product which consists of profit—or which is expended as income—is realised through the consumption of the product *in natura* on the part of production or by exchange within the different spheres of production of this same class, so in class II the same takes place for the constant capital, whether through replacement *in natura* in its own sphere of production, or through exchange with products between the different spheres of this same class. The products here re-enter as condition of production into their own production (as corn enters as seed, breeding cattle, etc.) or the product of sphere A e.g. enters into the product of sphere B as condition of production,

^a Instrumental material and raw material, if any.—Ed.

and the product of sphere B enters into the product of sphere A, as iron into machine production or machines into iron production. The product of sphere A may enter into sphere B, that of B into C, and that of C into A. This intertwining—the GENERAL BALANCE of these spheres, without any need for an exact balance between any two spheres—makes no difference to the situation. It lies in the nature of the situation that here money will develop as means of payment and therefore the movement without money will be compensated for by SETOFFS. Yet since the period in which product A enters B may differ from the period in which B enters A, etc., here too circulation of money can take place, and will do so *plus ou moins*,^a particularly before capitalist production is completely developed. It is in any case important to consider it so here.

Since there in fact takes place here EXCHANGE of constant capital for constant capital, and the products merely change their place in the production process reciprocally, the money constantly flows back to the person who expends it. E.g. when the machine manufacturer buys iron in order to replace his machine-building machine, there enters into this: 1) the depreciation of the machine-building machine itself; he advances this himself; 2) iron, etc. He buys this from the iron manufacturer; the iron manufacturer buys machines from him in order to replace the depreciation of his own machinery and thus the money flows back to the machine-builder.

Even where the product enters directly into its own reproduction, there may take place, in consequence of the division of labour, a circulation of money; the reproduction of capital may be accompanied by a circulation of money. A FARMER may sell all his corn and buy the seed from another farmer. But then the latter must grow seed both for himself and for the other. To the one farmer a part of the value of the corn represents the purchase price for the replacement of the seed, to the other it represents his variable capital+surplus value. In this case the money does not flow back between the two of them directly. Yet the seed man must expend the money in order to buy means of subsistence, corn among other things. He pays his workers with the money and expends it as his own income. The money of the farmer's workers flows back to him in part. They belong to the public who enable him to sell his corn as a whole. And so it is with cattle-breeding. One farmer may only fatten up the cattle to sell them as means of

^a More or less.—Ed.

subsistence; but the other may produce breeding cattle, to replace the constant capital of the farmer who fattens for slaughter.

This part—resolving into constant capital—of the product of the productive capitalists who produce constant capital for class I, is just as much the product of the year's labour as every other part of the product, i.e. it is only reproduced by passing through the labour process. But its *value* is the result of past labour, labour of the previous year, etc. And as such value it buys back the part of the product which is required for its reproduction. The more developed capitalist production is, the more, consequently, the result of past labour enters as *agens* into production, the greater is this part of the product, which falls to the share of production and never leaves that sphere. And the greater the value component of the product which goes to replace the constant part of the constant capital. But the labour is more productive to that degree. This value itself is dependent not on the labour it cost but the labour its reproduction costs. It is therefore on the one hand constantly piled up with the progress of capitalist production, and on the other hand constantly depreciated over shorter or longer periods. Its value only remains constant as long as the mode of production does not alter.

[XVII-1065] We have still to consider the following:

- 1) Accumulation, specially in respect of money.
- 2) *The simultaneity* of the movements.
- 3) *The gold and silver producer.*
- 4) The whole movement of *mercantile capital.*

First of all, as far as concerns 4), *MERCANTILE CAPITAL*, we have already elucidated its movement with the example of the *SHOPKEEPER* who sells means of subsistence to the workers. Put in the place of this *MERCHANT A*¹⁴³ the whole class of these *SHOPKEEPERS*. Their business is, as before, to sell the producer's commodity to the workers, and to take back from them *MONEY WAGES* in return. Their capital is replaced *IN MONEY* and their *profit is realised* by the same money as originally existed as variable capital and is then paid to the workers as *MONEY REVENUE* and in turn paid back by the workers as *COIN* to the *SHOPKEEPER*, in order to realise the share of the total product which belongs to the workers in aliquot parts of that product. The *MONEY CAPITAL* of the *SHOPKEEPER* himself, in so far as it is not *INVESTED IN COSTS OF CIRCULATION*, consists of his circulating money capital. If he buys for £200 *AT EVERY PERIOD* in which he makes a purchase, 100 for credit, 100 from his own pocket, he has advanced £100 of the money capital constantly present in circulation. If this £200 turns over 40 times he successively buys

commodities of a value of £8,000 with it. It changes nothing in the situation that a SHOPKEEPER from this sphere A buys from 50 different producers, and 50 SHOPKEEPERS from this sphere in their turn buy from 1 producer. Just as little is anything changed by the fact that this SHOPKEEPER consumes his profit in part in his own commodities, and in part buys commodities with it from other SHOPKEEPERS, who in turn buy from him again in accordance with the division of labour, so that the money which realises the profit of this class passes in turn through an intermediate circulation (SPENDING OF REVENUE) among the different agents of this class. What he consumes through purchasing from others realises their profit, and what others consume from him realises his profit. But each of them must thereby buy back from the producer with this money (in which their profit is realised) a part of the commodities, in order to renew this consumption. E.g. if SHOPKEEPER A of this class buys for £100 from producers and receives commodities for £110, in return for which he receives £110 from the workers, he has a profit of 10%. But if he buys for £110 and consumes for £10, he continues to sell to the workers for 100 and receives 110. But the 10 return to the PRODUCER in payment for the commodities consumed by the shopkeeper. He therefore receives the full value of the commodities for 10. If the profit is 10% he receives commodities for $£10 \frac{1}{10}$, but he consumes these. If in contrast he buys with £10 from another SHOP[keeper], B, the latter realises his profit in this transaction, but must return $£9 \frac{10}{11}$ to his producer, in order to replace the commodity. And if B buys from A for £10, the same thing is true of him.

Assume that the whole of the product which producer class I (the section *which* produces means of subsistence, and indeed that part of them which is sold to the workers) sells to this SHOPKEEPER class A=£500,000.

Assume that there are 5 WHOLESALE DEALERS who buy this 500,000; but that their capital turns over 5 times. Every fifth of a year they buy 100,000 between them. Each of the 5 buys 20,000 worth. Therewith each buys 100,000 worth over the whole year, thus 500,000 taken together. Assume their profit is 10%. Then the profit on the 20,000 each year=£2,000, and in each $\frac{1}{5}$ of a year=£400.

The capitalist therefore sells *in appearance* to each of the 5 £20,400 worth of commodities every fifth of the year for £20,000. These 5 WHOLESALE DEALERS sell to the SHOPKEEPERS, RETAILERS of class A, in the course of every fifth of a year. Let there be 100 of these retailers. They sell by the day and by the hour, but buy at smaller

intervals from the WHOLESALE DEALERS, perhaps only every fifth of a year or every month. Let the price supplement of these SHOPKEEPERS be 20%, namely 10% profit and 10% to replace their circulation costs (which also have to be deducted for the 5 WHOLESALE dealers; to simplify matters we have not done this). The commodity value 1 WHOLESALE DEALER has in hand = £20,400. And the commodity value 5 have in hand is £102,000 (since this is for $\frac{1}{5}$ of a year, over the whole year this = £510,000 worth of commodities). Of this £102,000 each SHOPKEEPER has to buy £1,020. 20 of these shopkeepers correspond to 1 WHOLESALE DEALER, but $\frac{1}{20}$ of £20,400 = £1,020. 10% on this £1,020 makes 102. But let us assume this SHOPKEEPER makes his purchases 10 times a year. He then needs only £510 to buy £1,020 over a fifth of a year.¹⁴⁴

[XVII-1065a] Assume that the complete wage bill for classes I and II is £550,000. This is therefore the commodity value which the SHOPKEEPER class A sells to the workers. For the SHOPKEEPER to gain 10[%] he must have paid $\frac{1}{11}$ less for £550,000 than is contained therein. This = £50,000. So that he would only have paid £500,000 for the commodity value of £550,000. Only assuming that the SHOPKEEPER turns over his capital 10 times in the year, or renews his purchases 10 times, twice every fifth of a year. Thus he only has to advance a capital of £55,000. And on this there is an annual profit of 10% = £5,500. And this makes £1,100 every $\frac{1}{5}$ of a year. Assume there are 100 SHOPKEEPERS; then each of them advances a capital of only £550. And every 5th of a year each of them receives a profit of 11%.^a But each of them sells to the workers every 5th of a year for £1,100. Over the year this amounts to 5,500 for 1 SHOPKEEPER and 550,000 for the 100 SHOPKEEPERS. On this £1,100 he adds a profit of £11. The commodity therefore costs him only £1,089. And 5,445 annually. And 544,500 for the 100. So that the producer would have sold him commodities of the value of 550,000 for 544,500. But there is further to be deducted the profit the SHOPKEEPER makes on the capital invested in the costs of circulation, the shop, etc., the depreciation of this capital; finally the part of the price supplement which falls to the capital invested in the productive labour of RETAILING: costs and profit. Assume that all of this comes to as much as the profit on the capital constantly circulating in purchases. Hence another £11 every fifth of a year. Thus 11 must be deducted from the £1,089, which brings it to 1,078. But in order to simplify matters let us assume that this second £11 is a price supplement which includes

^a Thus in the original. It should be "£11".—Ed.

the costs (of circulation and production) and profit on the productive part of the capital. £11 per year comes to £55 for each SHOP[keeper], and 5,500 for the 100. We therefore deduct this 5,500, as not contained in the value of the purchased commodity, but added to it by the SHOP[keeper]. There remain 544,500. This is the *real commodity value* which the SHOP[keepers] buy annually from the producers. There must further be deducted 5,500 for profit. There remain 539,000. The SHOP[keeper] therefore pays 539,000 a year to the producer, and for this he receives a commodity value of 544,500 from him, adding 5,500, partly in circulation costs, partly in production costs (which however include the profit he himself makes as a capitalist producer). So we now have:

The workers buying commodities for 550,000 every year.

100 SHOPKEEPERS selling to them every year for 550,000; costs them 539,000 (whereby a value of 5,500 is added by them themselves). And they obtain from the producers a commodity value of 544,500 for the 539,000.

Each of the 100 SHOPKEEPERS sells every year for £5,500, every 10th of a year for £550, and every 5th of a year for £1,100. A value of £11 is deducted from this £1,100, added by the SHOP[keeper]. £1,089 remains (every 5th of a year). This £1,089 costs the shopkeeper 1,078 (every 5th of a year) and over the whole year 5,390, and it costs the 100 SHOPKEEPERS 107,800 every 5th of a year, over the whole year 539,000. 20 of these fellows therefore buy for 21,560 every 5th of a year, receiving in return a commodity value of $1,089 \times 20 = \text{£}21,780$.

[XVIII-1066]¹⁴⁵ One more point on the question of interest on interest⁶⁰:

The notion of capital as a self-reproducing entity—BY VIRTUE OF ITS INNATE QUALITY AS A PERENNIAL ANNUALLY GROWING VALUE—led to the wondrous ideas of Dr. Price, which left the fantasies of the alchemists far behind them. Pitt seriously believed in these ideas and made them pillars of his financial wisdom in his laws on the SINKING FUND¹⁴⁶:

*“Money bearing compound interest increases at first slowly. But, the rate of increase being continually accelerated, it becomes in some time so rapid, as to mock all the powers of imagination. One Penny, put out at our Saviour’s birth to 5% compound interest would before this time have increased to a greater sum, than would be contained in a 150 millions of Earths, all solid gold. But if put out to simple interest, it would in the same time, have amounted to no more than 7 sh. 4½d. Our government has hitherto chosen to improve money in the last rather than the first of those ways” (Richard Price, *An Appeal to the Public, on the Subject of the National Debt*, London, 1772, 2nd ed.* [pp. 18-19]).

(His trick: the government should borrow at simple interest and put out the borrowed money at compound interest.) In his:

Observations on Reversionary Payments etc., London, 1772, he flies still higher:

“A shilling put out to 6% compound interest at our Saviour’s birth would ... have increased to a greater sum than the whole solar system could hold, supposing it a sphere equal in diameter to the diameter of Saturn’s orbit” (l.c., XIII, note). *“A state need never, therefore, be under any difficulties; for, with the *smallest* savings, it may, in as little time as its interest can require, pay off the *largest* debt”* (l.c., [XIII]/XIV, p. 136).

What fine principles emerged from this for the credulous Pitt!

PRICE WAS SIMPLY DAZZLED BY THE ENORMOUS QUANTITIES RESULTING FROM THE GEOMETRICAL PROGRESSION OF NUMBERS. Since he regarded capital as A SELFFACTING THING, WITHOUT ANY REGARD TO THE CONDITIONS OF REPRODUCTION OF LABOUR, *merely as a self-increasing number* (just as Malthus regarded MAN in his GEOMETRICAL progression^a), he could believe he had found the laws of its growth in that formula. The formula: $S=c(1+i)^n$. (In this formula, S =the sum of capital and interest to be calculated; c =the capital advanced; i =the rate of interest (ALIQUOT PART OF 100) and n =the number of years during which the process takes place.) In a speech of 1792, proposing to increase the sum of money devoted to the SINKING FUND,¹⁴⁷ Pitt takes Dr. Price’s mystification entirely seriously.

“The House of Commons resolved in 1786” (see Lauderdale¹⁴⁸) “that the *consentement unanime* was that 1 million pounds sterling be raised for the public benefit” (Lauderdale, l.c., p. 175).

According to Price, who was believed by Pitt, nothing was better, of course, than to tax the people in order to “accumulate” the sum of money raised by the tax and thereby to spirit away the STATE DEBT through the mystery of COMPOUND INTEREST. Taxes for “SINKING FUND” or amortisation fund.

“That resolution was soon followed by a law—of which Pitt was the author—which ordained the accumulation of $\frac{1}{4}$ million pounds sterling, until the time when the annuities fell due and the fund increased to £4 million per year” [p. 176] (CH. XXXI of the ACT of the 26th Year of the Reign of George III).^b

In his speech of 1792, in which he proposed increasing the sum devoted to the SINKING FUND, Pitt included machinery, credit, etc., among the reasons for England’s commercial pre-eminence. But

“the most extensive and long-lasting reason is *accumulation*. This principle is developed fully and explained adequately in Smith’s work alone, that genius, etc. ... This accumulation of capitals operates by reserving at least a part of the annual profit in order to increase the principal sum, which must then be employed in the

^a [Th. R. Malthus,] *An Essay on the Principle of Population...*, London, 1798, pp. 25-26.—*Ed.*

^b Marx quotes partly in German and partly in French.—*Ed.*

same manner in the next year, thereby providing a continuous profit" [pp. 178-79].^a

Pitt considered Price's interest on interest—COMPOUND INTEREST—calculation, to be identical with *Adam Smith's theory of accumulation*. This is important.

[XVIII-1067] Child, the ancestor of the London banking system, was incidentally an enemy of the "monopoly" of the usurers, in exactly the same sense as Moses and Son in its bulletins declares its opposition to the "monopoly prices" of the small tailors.

We already find with *Josiah Child* (father of the London banking system) (*Traité sur le commerce et sur les avantages qui résultent de la réduction de l'intérêt de l'argent*, by Jos. Child (written in 1669), etc., translated from the English, Amsterdam and Berlin, 1754) that

"£100 at 10% would produce 102,400 pounds sterling in 70 years, if interest is added on the interest"^a ([p.] 115).

The first notion of ACCUMULATION is that OF HOARDING, just as the first notion of CAPITAL is as MERCANTILE capital. The second notion is that of COMPOUND INTEREST, just as interest-bearing capital, or money lent out at interest, is the second historical form of capital. Political economy SOMETIMES becomes perplexed when the antediluvian expressions of the relations peculiar to capitalist production again assert themselves as expressions of the latter, as with interest on interest for the accumulation OF CAPITAL.

How Price's notion is unthinkingly allowed to slip into the works of modern, and relatively critical, economists is shown e.g. by the following passage from *The Economist*:

"*If there be any cases in England in which land, with all its rights and privileges, has not been bought and sold over and over again"* (and hence, as he very wisely concludes, "has become merely the representative of the money paid for it") *—"which we doubt—we do ... not doubt ... that every sixpence of rent is the representative of capital, saved by the landlord and reinvested by the land, in those cases where land has not been sold... Capital, with compound interest on every portion of capital saved, is so all engrossing, that all the wealth in the world from which income is derived has long ago become the interest on capital. Although land be more valuable in some places than in others, all rent is now the payment of interest on capital previously invested in the land" (*Economist*, July 19, 1851).^b

The Economist could say, based on the same incredible notion, *that all the labour that may in myriads of ages be realised, will only represent interest due to capital till now accumulated.* I cite

^a Marx quotes partly in German and partly in French.—*Ed.*

^b *The Economist*, No. 412, July 19, 1851, p. 796.—*Ed.*

the passage merely on account of the incredible notion that accumulation=interest on interest. Otherwise, by the by, and *en passant*, *The Economist* remarks, l.c., *that the community as such

“as a corporate body ... claims the land (as common property), and never gives up that claim”.*

He who expends capital in the purchase of land

*“does in fact forfeit and give up to the community some of the advantages which belong to property *strictly and exclusively personal*” (l.c.).

Finally there is the following rubbish from the “romantic” Müller:

“Dr. Price’s colossal increase in compound interest, or the self-accelerating forces of the human being, presupposes an undivided, unbroken, and uniform order over many centuries, if it is to bring about these incalculable effects. As soon as the capital is divided, cut up, into a number of separate branches, growing on their own account, the whole process of the accumulation of forces begins again. Nature has divided the progression of force into a series of courses of roughly 20 to 25 years, which are allotted to each *individual worker* on an average. After this period of time has expired, the worker leaves his course and must now transfer the capital gained through the compound interest of labour to a new worker; for the most part he must divide it among several workers or children. They have first to animate and learn to employ the capital which falls to them, before they can draw from it actual compound interest. An immense amount of capital gained by civil society is, even in the most dynamic communities, piled up gradually, over long years, and is not employed in the direct extension of labour, being rather transferred to another individual, a worker, a bank, the state, under the name of a *loan*, as soon as a considerable sum has been brought together. The recipient then sets the capital really into motion, and accordingly draws *from it compound interest*, and [XVIII-1068] can easily pledge himself to pay the giver simple interest. Finally the law of consumption, greed, waste reacts against that immense progression in which the forces of man and their product would tend to increase, if the law of production or frugality alone were to hold sway” (A. Müller, *Die Elemente der Staatskunst*, Berlin, 1809, Part III, [pp.] 147-49).

It would be impossible within a few lines to jumble together more hair-raising and self-contradictory nonsense. We do not mention the ludicrous confusion of worker and capitalist, of value of labour capacity and interest on capital, etc.—let us just mention the assertion that the decline in compound interest is due, among other things, to the fact that capital is “lent out”, whereupon it “*then*” brings “compound interest”. The extraordinary shallowness of this “profundity” OR RATHER “stupidity”, this for example:

“In determining the *price* of things *time* is not an issue; in determining interest it is time which chiefly comes into consideration” (l.c., [pp.] 137-38).

Müller is speaking here of *circulation time*. Since he *sees* circulation time as determining in the case of *interest*, but *does not see* this in the case of the price of the commodity, the profundity

consists in holding fast to the *semblance* and reasoning forth on this basis. The same fellow tells us:

“Urban production is bound to the cycle of days; rural production in contrast to the cycle of years” (l.c., [p.] 178).

By “urban production” he means manufacture in contrast to agriculture. Agriculture which is not run in the capitalist fashion—and this is what he refers to—is of course bound to the annual cycle. Large-scale manufacturing on the other hand (IN CONSEQUENCE OF THE FIXED CAPITAL EMPLOYED) is bound to the cycle of 12 to 15, in some branches of the transport industry (railways, etc.) 20 years. Our Müller’s procedure is characteristic of Romanticism in all its manifestations. Its content consists of the most vulgar everyday prejudices, trivialities created from superficial appearances. This false and trivial content then has to be “heightened” and made poetical by a mystificatory mode of expression.

[XVIII-1068] Assume that there are 5 *WHOLESALE DEALERS* for the 100 *SHOPKEEPERS*. They have therefore to sell to the shopkeepers every year 544,500 worth of value, and in $\frac{1}{5}$ of a year 108,900 worth of commodity value. For which they, however, only receive a payment of 107,800 from the *SHOPKEEPERS*.

Each of the 5 *WHOLESALE DEALERS* has in $\frac{1}{5}$ of a year to sell to 20 *RETAILERS*. I.e. each has to sell a commodity value of £21,780, for which he receives 21,560 in money. But for this 21,560 each *WHOLESALE* dealer must *d’abord* receive from the *PRODUCER* a commodity value of £21,780. Indeed, he must receive more than this, since he also has to make his profit. Assume that his capital circulates 5 times in the year. All 5 buy over the year from the *PRODUCER* for 539,000. But they do this with a capital of 107,800. 10% on this makes £10,780 over the year. And over a fifth of a year this makes £2,156. The profit for each of the 5 *WHOLESALE DEALERS* every $\frac{1}{5}$ of a year is therefore £431 $\frac{1}{5}$. Each of the *WHOLESALE DEALERS* therefore buys from the capitalist every $\frac{1}{5}$ of a year commodities to the value of £21,780 for £21,560 money minus £431 $\frac{1}{5}$. He therefore pays £21,128 $\frac{4}{5}$ for the commodities, or 5 pay 105,644 every $\frac{1}{5}$ of a year, and 528,220 over the whole year. The producer therefore has in fact to provide a commodity value of 544,500 for 528,220—if we disregard the value addition made by the *RETAILER*—the difference thus does not come even to 3 $\frac{1}{2}$ % of the commodity value provided by the capitalist.

The only thing of importance here is that the interposition of the *WHOLESALE DEALERS* in no way alters the circuit, described above,

between the *épiciér*, the producer and the worker; except that here the workers are not only workers of class I, who produce means of subsistence for the WORKMEN. The RETAILER [XVIII-1069] does not put in his pocket the whole of the reduction in the price at which the PRODUCER sells him the commodity; instead this reduction is divided between WHOLESALER and RETAILER. In other words, what is divided is the part of the surplus value which amounts to MERCANTILE PROFIT. Instead of the MONEY WAGES PAID BY ONE CAPITALIST TO HIS OWN WORKMEN [being] RETURNED TO HIM BY THE SHOPKEEPER (but now for the re-purchase not only of wages in commodities, but of the profit of the SHOPKEEPER) the MONEY WAGES of all WORKMEN of classes I and II flow back to the producers of class I through the SHOPKEEPER and the WHOLESALERS (in the re-purchase of the commodities falling to the share of the workers+the realisation in commodities of the profit of the WHOLESALERS and RETAILERS). With part of this reflux the producers of class I replace in money their variable capital, and with the other part they buy constant capital from class II, who with this money again obtain the MONEY fund from which they pay wages.

The situation for shopkeepers and wholesalers B, who sell means of subsistence to the owners and consumers of the SURPLUS, is the same as for SHOPKEEPERS and WHOLESALERS A.

We saw that the product of the producers of class I, however many of them there might be, was collected in 5 WHOLESALE reservoirs, and then divided into 100 RETAIL reservoirs, then entered PIECEMEAL, by the day and by the hour, into the circulation between RETAILER and CONSUMER. With the REFLUX of the money, on the other hand, no such constantly increasing subdivision takes place as with the circulation of the commodity. On the contrary. The workers' money is concentrated in the 100 RETAILERS, then collected into 5 reservoirs at the WHOLESALERS, and is only re-divided once it returns to the individual producers.

In the case of the circulation of the commodity there is a mere TRANSFER FROM PRODUCER TO WHOLESALER, from WHOLESALER TO RETAILER, and it is the last who sells it definitively. Similarly in the reverse direction, with the REFLUX, TRANSFER, of the money which flows back to the capitalist (REFLUX of capital, when he sells on credit, but REFLUX of MONEY and indeed as means of purchase or REFLUX of the MONEY FORM of his capital when he sells for CASH) from the RETAILER to the WHOLESALER, from the WHOLESALER to the producer.

The situation is entirely the same with the MERCHANTS who mediate the purchase and sale of constant capital, i.e. buy and sell for industrial consumption. Here too the profit derives from the

fact that they buy the commodity below its value and sell it at its value, thus receiving their share in its surplus value. This circulation in itself has no particular significance. E.g. the WHOLESALE buys yarn from the spinner, sells it to the weaver, or buys flax from the FARMER and sells it to the linen yarn manufacturer. In fact it is the weaver who pays the spinner. The circulation of these particular mercantile capitals, through their constant sale of a particular commodity, conceals the real movement, the real connection. Everything e.g. which appears in the circulation between flax producer, MERCHANT and spinner is nothing but a constant buying by the spinner from the flax producer. Every individual act of the reproduction process thus appears divided and in an independent shape.

We now come to *accumulation*.

//But first still one more point. It is very important in estimating the GENERAL SURPLUS VALUE to include *mercantile profit*, because a part of the SURPLUS VALUE is concealed here and appears to arise out of a *specific sphere of production*./

But now back to p. 1065, Notebook XVII, 1) and 3) (*accumulation and the gold producer*).^a We have in the reproduction process

1) *the class of producers who produce means of subsistence*, the elements into which the variable capital and the part of the product produced as surplus value and expended as income are resolved,

2) *the class of producers who produce the constant capital* for the first class. This consists in the final analysis of the classes which provide the latter with elements of constant capital, hence raw materials, seeds (whether corn or breeding cattle. In the animal kingdom the seed is the cattle itself, in the vegetable kingdom it is the actual seeds), and produce the machines, containers and tools (we see even in agriculture how seed production, whether in the animal or the plant kingdom, can split away from production for consumption as an independent sphere of production).

[XVIII-1070] A house can of course serve as constant capital or enter into individual consumption, or both at once. Coal, wood, a horse, a wagon, a mass of small instruments and containers enter as *constant parts* of consumption, as tools of consumption. This makes no difference. In so far as the producers sell to individual consumers they belong to class I, in so far as they sell to producers, to class II. In one category things apply to them which pertain to that category; in the other, things which pertain to the other.

^a See this volume, p. 219.—Ed.

Alongside these classes the producer of the commodities which function as money, the producer of the precious metals, forms a category *sui generis*.^a For the sake of simplification, we only speak of the gold producer as the producer of the material of money. For the sake of simplification (since the countries which produce the precious metals have peculiar characteristics which are irrelevant to this general investigation) we place the gold producers in the middle of the country of capitalist production itself.

Incidentally, we have excluded foreign trade for the same reason¹⁴⁹; exporter and importer are themselves merely categories of WHOLESALE DEALERS. The exporter exports means of subsistence which enter in finished form into consumption: in this case he belongs to the WHOLESALE DEALERS, who do nothing in the reproduction process but mediate the TRANSFER to the RETAILERS of the product, which then flows directly into the sphere of consumption. Or he exports raw materials, semi-manufactures, instrumental materials, machines, instruments of labour. In this case he mediates the exchange between the producers themselves. In the one case it is $C-M$, in the other case $M-C$, the conversion of commodity capital into money, or of money capital into commodities. There is therefore no essential difference between these and the two main categories of WHOLESALE DEALERS. But the importer is the same as the exporter. The exporter of one country is the importer for the other one, and the importer of one country is the exporter for another one. There are of course exporters and importers in one single country, e.g. England. But the exporter imports into other countries, and the importer exports out of other countries.

Gold enters as raw material and *matière instrumentale* into a series of luxury products. In so far as the gold producer sells his gold to the producers of these articles, he belongs to class II, which sells and produces the elements of constant capital.

Every part of the product equally contains a portion of surplus value. Every individual commodity or portion of a commodity considered in itself. (Nevertheless, our distinction also appears in practice. If 2 thirds of the product consist of costs, $\frac{1}{3}$ of SURPLUS, and the capitalist only sold $\frac{1}{3}$, he would only have replaced his variable capital; if he sold $\frac{2}{3}$ he would have replaced his variable and constant capital, and would have realised no profit, although every part of the commodity, and every individual commodity,

^a In its own right.—Ed.

would have been equally sold at its production price, hence would have realised a part of the SURPLUS VALUE.) The gold producer realises just as much profit on this part as on every other part; because unpaid labour is contained in the gold and he realises this *pro rata*. But only formally. For he receives no other commodity. But instead converts the gold from the form of bars into the money form, which he could also do by sending it to the mint. (There is of course a difference for him between places where it is coined free of charge, as in England, and where *seigneurage* is charged as in France.) It emerges clearly in his case that the surplus value arises not from circulation but from production, because in production it already possesses the form in which it is capable of circulation. But this circulation between the gold producer and the gold consuming producer is important on account of one point. In this TRADE the gold producer withdraws money from circulation instead of throwing it in; for the gold that he throws in does not enter into circulation as money but as an element of production.

Therefore in a country where gold mines, etc., are located, we find AVERAGE productive consumption of gold, just as of all other commodities which form the object or the *matière instrumentale* of other commodities. If in this case this consumption were so large as to cover the wages [of the workers] of the gold producer and his profit (hence the part he spends as income) two things could be said:

1) The whole of this part of the annual gold production does not enter circulation as money; it neither enters as CURRENCY into the circulation between RETAILER and INDIVIDUAL CONSUMER (COIN) NOR does it enter as money capital into the TRANSACTIONS between the productive consumers. //The difference between coin and money exists here in SO FAR as the money capital is paid out to the worker in coin, because it has to circulate in the circulation between RETAILER and DEFINITIVE CONSUMER; whereas in the spheres in which it moves between the productive consumers, i.e. the productive capitalists, it does not enter into this circulation, serves chiefly as means of payment and in their hands ceases to represent capital, which is what it does do in the HANDS of the DEFINITIVE CONSUMERS. The simultaneity and parallel course of the different successive phases of circulation, which at the same time represent opposite phases for different capitals, brings about the difference between the kinds of money, in which capital circulates on the one hand and income on the other. The transition from one kind of money to the other is mediated through exchange.//

[XVIII-1071] 2) There takes place here a REFLUX of money (from circulation) to the gold producer, and this REFLUX repeats itself. If e.g. the gold CONSUMER (GOLDSMITH, etc.) pays him 4 times a year, or buys from him every quarter, here in the case we have supposed this is money flowing from circulation itself for the payment of wages. The gold producer would only need to have in reserve in coin the expression of wages for a quarter of a year, since the same amount flows back to him again from circulation every quarter. The GOLDSMITH, etc., in contrast, replaces his money capital, which he laid out in the purchase of gold, with the money which comes from the SPENDERS OF REVENUE, to whom the gold producer would himself in part belong. If this consumption of gold amounted to a sufficiently considerable part, it would provide for the gold producer not only the money for wages, but also for the income PART (what is SPENT as income) OF THE PRODUCER'S PROFIT (RENT). Here it must be borne in mind that the gold producer, like every other capitalist, needs ONLY AN ALIQUOT PART, AND A RELATIVELY SMALL PART, of the YEARLY MONEY EXPRESSION of the WAGES, in order to pay them, and that in spending his own income he also only needs A MUCH SMALLER MONEY EXPRESSION OF ITS YEARLY VALUE, since the same money flows back and performs the service anew.

Assume that the GOLD PRODUCER has to pay his workers £12,000 annually. This makes £1,000 a month, and say £240 a week, if 50 weeks are worked in the year. Assume that this producer advances the money weekly at the beginning of the first quarter, and, since it does not flow back to him, for the whole of the quarter. At the end of the quarter he makes a sale for £3,000 (if the year=50 weeks, the quarter=12½ weeks and the week=£240). To the goldsmith, etc. In the second quarter, therefore, he no longer has to increase the CURRENCY by a further £3,000, but instead he retains this £3,000 in his own possession or with his BANKER, and allows £240 of it to flow back into circulation every week. There is no doubt that this would be the case in an industrial country. Only a small part of the product would be necessary, and this would be sold to the productive consumers of gold so that in this way there would be a constant reflux of the wage from circulation. For this part of the gold producer's capital, therefore, and, depending on the circumstances, also for the MONETARY EXPRESSION OF HIS REVENUE, he adds nothing to circulation, in so far as its movement is between INDIVIDUAL CONSUMERS and PRODUCERS. This circumstance is entirely overlooked by Ricardo in a hypothesis he bases on the assumption that the gold mine is to be found in the country of capitalist production itself, e.g. England.¹⁵⁰

A money REFLUX would take place for this part of the gold producer's product, because he sells the gold as a commodity, does not buy with it, does not spend it as money.

//Within capitalist production *cost price*¹⁵¹ never=value. *Production price* can=value, if the coincidence occurs that 1) the capital which gives the commodity its final form, and 2) the capital which provides the machine and the raw material, both have the AVERAGE ORGANIC COMPOSITION. Just as the production prices of the commodities which form the *variable* capital may always vary in their value, the *amount* of these commodities, which forms the wage, always=the labour time (ON AN AVERAGE) the worker needs to reproduce this amount,=the value of the labour capacity for which the variable part of the capital is exchanged. This part, whatever its price,=its value. It is therefore sufficient for the other two parts—surplus value and constant capital—to possess the AVERAGE COMPOSITION, for the production price of the commodity to be equal to its value.//

In what follows, therefore, we entirely leave *à part* the part of the gold which enters as raw material into the production of other commodities, hence into the constant capital of other spheres of production.

As far as concerns the position of the gold producer for gold production (THUS CIRCUMSCRIBED), this is *sui generis*. The product, the commodity he has produced, cannot enter as an element either into the constant or into the variable capital of other spheres of production, and it therefore does not enter into the real reproduction process as considered above. Nor does it enter into his own constant or variable capital. Just as little does it enter into the category of commodities in which income IS IMMEDIATELY SPENT. On the other hand, however, this commodity directly possesses the form in which it can enter into the world market as money, just as it can be converted into national money through a merely technical transformation. It may function directly as money, i.e. buy. The converted form of the commodity is its primitive form. And it therefore also directly possesses the absolute form of circulating capital, the form of money capital.

The gold producer can therefore buy directly, without having to sell. HIS COMMODITY IS IMMEDIATELY CONVERTIBLE INTO EVERY OTHER COMMODITY, WITHOUT ANY REGARD to its relation to the productive conditions of existence of the commodities for which it [XVIII-1072] is exchanged; the commodities it buys.

We have transferred the gold producer to a country of capitalist production. What applies to every other sphere of capitalist

production applies to this one: it can only absorb its proportional part of capital and labour, if the rate of profit is not to fall below the AVERAGE PROFIT. In other spheres of production, where surplus value can be resolved into profit and rent, a relative oversupply of the sphere with capital would initially affect rent alone; the turn of profit would come when the relative oversupply of the sphere with capital and labour persisted, even after profit had swallowed up the rent. Assume that the capital invested in gold production yielded 30%, 10 PROFIT and 20 rent. If a given amount more of capital and labour were applied to this sphere, and correspondingly more withdrawn from the other spheres, the means of subsistence and the constant capital of the gold producer (i.e. the machines, etc., he must buy) would rise for instance from 100 to 120. This 120 would as before express numerically the same physical amount of means of production, i.e. the same amount of labour, and the same ratio as previously of machinery, etc., to this given amount of labour. The product would be as before 130, whether the capital laid out=100, 110, or 120. If we take the last figure, not only would the rent have disappeared, but also nearly 20% of the profit. For $120:10=100:8\frac{1}{3}$. Thus the rent of 20 would have vanished and the profit would have fallen from 10 to $8\frac{1}{3}\%$. The capital and labour employed in gold production therefore stands in a certain proportion to the amount of capital employed in all other spheres of production, or is brought back to this through the equalisation of the rate of profit.

The producer of the gold can buy what he wants with it (i.e. what commodities he finds on the market); hence means of subsistence on the one hand; instruments of production on the other. He can consume, in this form, the part of his gold product which represents surplus value (profit, rent), IN FACT HOARD WITH A VIEW TO CONVERT IT AT A LATER PERIOD EITHER INTO REVENUE OR INTO CAPITAL. In so far as he does this, the gold producer accumulates a part of his product in natural form, just as the peasant or the machine manufacturer does.

As regards the part he exchanged for means of subsistence or instruments of production, the part of the product sold to him by the producers of those commodities now exists entirely in gold, i.e. in a form in which the reproduction process of their commodities cannot be renewed. If they are to reproduce at the same level, the same part of their product (assuming that NO CHANGE has occurred in the value of the ingredients of their production) must be converted back into raw materials, machinery, etc. For example, those who sell the means of subsistence, i.e. commodities in their

final form, the form in which they enter into individual consumption, cannot use gold either as a raw material (semi-manufactured material), or as a *matière instrumentale* (for this has already been withdrawn for GOLDSMITHS, etc.), or to replace their means of production. It is implied, furthermore, that the circulation is already sufficiently FULL TO REPLACE BY ITS FLUX AND REFLUX ALL VARIABLE CAPITAL IN THE FORM OF MONEY, etc.; similarly the part of the circulating capital which must circulate as money capital. From the means of subsistence this class has sold to the gold producer, and IN RETURN for which it now possesses gold, it can accumulate in gold the surplus value contained in these commodities; it can hold onto the gold as the form of the surplus value; it can store up, preserve, retain this surplus value in the form of gold. But it must replace the raw material, machinery (it is assumed that the production of gold for luxury consumption replaces the CURRENCY for the gold PRODUCER, without his having to throw other money into circulation to achieve this; but the part of the commodity that he consumes—and, apart from this, the part of the labour that is contained in the commodity consumed by him—must be replaced by its producers through the purchase of new labour⁴³); for we assume that the previous circulation was sufficient to pay out the variable capital in money. The producer of the means of subsistence therefore buys with the part of the gold which he has obtained—the part he keeps as the direct form of his surplus value (profit)—semi-manufactured material, *matières instrumentales*, MACHINERY, etc. The producers of these commodities are all in the same position. Each one can only retain a portion of the gold—a part of his profit or surplus value in general. With the other part he replaces the raw material, etc. For this last part of the gold, which comes to the original producer, they sell their whole commodity, *pro toto*, with deduction of exchanges between the original producers, and they cannot again split up this part into a PART CONSISTING OF SURPLUS VALUE and a PART CONSISTING OF PRODUCTIVE CAPITAL. For them this gold therefore represents nothing but the part of their surplus value accumulated in gold. And the commodities they thus sell indirectly to the gold producer constitute a part of the part of their product in which surplus value is realised.

We have observed the course of events where the gold producer buys means of subsistence. THE SAME CASE AS FAR AS HE BUYS INSTRUMENTS OF PRODUCTION AND *matières instrumentales*. [XVIII-1073] Hence the whole annual product of the gold producer // we are deliberately leaving foreign trade out of the picture here// can be resolved into

the expression of surplus value in gold; it is a part of the SURPLUS LABOUR of the WHOLE SOCIETY which is directly incarnated in gold, converted into gold. For the gold producer, as for any other capitalist, his total product consists of 1) a part which reproduces the constant capital; 2) a part which replaces the variable capital; and 3) a third part which represents the SURPLUS VALUE. But in relation to the whole society it is merely the incarnation of SURPLUS VALUE and SURPLUS LABOUR. To the extent that this SURPLUS VALUE comes into consideration, the gold producer is distinguished from the others only in that for him it is a form emerging directly from the process of production, whereas for the others it is mediated through exchange, through circulation. The other producers—whether of means of subsistence or of constant capital—exchange, out of the part of their product which represents surplus value, a part for the gold of the gold producer; they thus replace his capital for him and he gives them the commodity in which they realise a part of their surplus value. The relation of the gold producer to classes I and II is therefore exactly the same as the relation of classes I and II to each other. That is, the whole of his annual product can be resolved into income, i.e. it is exchanged for a part of the means of subsistence and means of production which represent income for their producers, i.e. *realisation of SURPLUS LABOUR*. Just as class I realised a part of its SURPLUS VALUE in its own products, so also can the gold producer. But he can realise only a part. He must consume a part of his SURPLUS VALUE. The others, in contrast, must *not* consume a part of their SURPLUS VALUE, if they want to possess it in the form of gold. Therefore, in so far as this form of replacement comes into consideration, the exchange between the gold producer and the other classes does not represent a new phenomenon. But it is a new phenomenon in so far as a part of the SURPLUS VALUE is here directly converted into the material of money and thereby the simple reproduction process assumes the special feature that the valorisation of the commodity presents itself directly as accumulation of gold, hence as accumulation of latent money capital.

If we leave aside the form of capitalist production, it is clear that the producers must exchange a part of their products with each other, in part for individual consumption, in part for productive consumption. This part (and it forms BY FAR THE GREATEST PART OF THEIR PRODUCE) can ON AN AVERAGE be regarded as given, particularly in static conditions, such as were normal *before* the capitalist mode of production. They can only exchange the SURPLUS with the product of the gold or silver producer. And in fact their *hoards* are formed

in this manner, and in general the basis is laid for the circulation of metallic money. The situation that only this *surplus* can be converted into gold remains the same in capitalist production.

In so far as the gold producer and the other producers now convert their [surplus] into capital anew as money (in addition to the money otherwise circulating amongst them), the question is not specific. The same conditions are needed as are required in general for the conversion of money into capital.

So far, therefore, we merely have this: The accumulation of money—as identical with new gold production—requires that a part of the surplus labour of the country should be invested in the production of gold.

But now let us pose the question in a different form, in which the production of new gold is entirely left on one side. It is known that during a considerable period of time, roughly from 1808 to 1830, the newly added gold and silver were exactly sufficient to replace the abrasion, etc., the WEAR AND TEAR, of the money capital of Europe. The capitalist accumulation process must also be considered in itself—precisely with regard to money—without bringing in the production of gold and silver at all.

The question that concerns us here is not the same as the one considered previously, in dealing with reproduction: how surplus value existing as money, OR RATHER the part of the surplus value which is not consumed, can be converted back into *productive capital*. The question is rather how, and UNDER WHAT CONDITIONS, a part of the surplus value, INSTEAD OF BEING SPENT, MAY BE ACCUMULATED AS MONEY, AND THIS WITHOUT ANY REGARD TO THE EXCHANGE WITH THE GOLD OR SILVER PRODUCING CAPITALIST?

Let us consider the different classes:

class I, which produces means of subsistence;

class II, which produces the constant capital for those means of subsistence and the constant capital for this constant capital;

class III, THE MERCANTILE AND MONIED CAPITAL, WHO ONLY INTERMEDIATE THE MOVEMENTS AMONGST THE TWO FIRST CLASSES.

[XVIII-1074] On class I. This class has to replace its constant and variable capital. It replaces the latter through its own products, it buys the former through exchange for its products.

As regards the surplus value, class I must itself *consume* a part of it; but its whole product, *surplus value as well as capital, exists in the form of commodities destined for immediate consumption, or destined, at least, to fall into the funds of consumption, and, thereby, to be got rid of in the sphere of circulation. It must be sold, before any part of it exists in the form of money; and the

sale of it means its being bought for consumption.* This is what the part of the product which represents SURPLUS VALUE has in common with the part which represents capital. *If, therefore, that class need only consume part of its surplus produce itself, the whole surplus produce must be consumed—and, therefore, sold to consumers. If not, it will encumber their warehouses in the form of not consumed and unvendible commodities.*

According to our presupposition, class I exchanges with class II only the part of its product which represents its constant capital, hence NO PART OF REVENUE. When dealing with this question, therefore, the exchange with this class must *be left out of consideration altogether, as far as class I is concerned. We are thrown back upon [class I] itself.

Within class I itself, the exchange with the workmen must be also eliminated. The workmen of class II are already included in the exchange of class I with II, which exchange, we say, is to be eliminated. Their own workmen only pay them back in money the value of the capital paid out to them in commodities. This exchange has nothing at all to do with the *realisation* of the surplus value, but only with the variable capital advanced.

We are then forced to consider the parties of class I itself, which *share in the surplus value produced in it*, and who by their exchanges return to the producing capitalist the monetary value partly of his capital advanced, partly of his profit. Neither the exchange with class II, nor the payment of the variable capital within class I, has anything to do with the question thus put.*

We have seen how a part of the capital can accumulate as money capital, in SO FAR as not only the part of income which the gold producer consumes *in natura*, but the part of his product (gold) which he must give *in natura* in exchange, in order to replace his capital (leaving aside the part of this product that he sells as raw material to other branches of production), both constitute a part of the income of the other producers, a part which is retained directly in the shape of gold, is initially HOARDED gold, and can then function as money capital in reality, i.e. enter directly into the accumulation process of capital.

The question we now pose is this: Leaving aside this part of the SURPLUS VALUE, which is accumulated through exchange with the gold producer in the shape of gold, how is it possible at all for productive capital initially to pocket as gold a part of its income, instead of spending it, and then to accumulate this part as money capital?

The capitalist has laid out £100. His commodity=110. In our

presentation so far, where the surplus value of 10 BEYOND THE CAPITAL BECOMES MONETISED, we assumed that the income was entirely eaten up; SO THAT IN FACT THE MONEY SPENT IN THE CONSUMPTION OF THE REVENUE monetises the surplus value, PAYS IT BACK. But if the capitalist (and EACH CAPITALIST, for the matter must be conceived in a general way; as a process of capital, NOT OF ONE SINGLE CAPITALIST AT THE EXPENSE OF OTHERS, so that e.g. the sale by one capitalist of 110, of which he only SPENDS 105, is not explained by saying THAT ANOTHER IS UNABLE TO SELL PART OF HIS PRODUCE) replaces 100, SPENDS 5 AND ACCUMULATES 5, HOW IS THIS TO BE MANAGED ON A GENERAL SCALE? THAT IS THE QUESTION TO BE PUT AND TO BE ANSWERED.

Just as a part of the produce of particular spheres of production enters into them again as a condition [of production], this consideration would be important if we were to examine a specific sphere of production of class I. But here it is not important. Let 100 represent the total capital of this class and 10 its total profit. It must consume a part *in natura* (i.e. in the product of this class itself *in natura*). Say 5. The question is thus: under what conditions can this class keep back 5 as money, FIRST conditions for the reconversion of income into capital? The first condition is that it sells for 105. The 100—replacement of the capital—is explained, and therefore does not come into consideration any further here. The question is, to whom are the commodities to the value of £5 sold? They consist of commodities which in part merely enter into the income of the higher classes, in part enter into the consumption of the workers, productive or unproductive.

THE FURTHER ELUCIDATION OF THIS POINT TO BE POSTPONED.

[XVIII-1075] * MERCANTILE * CAPITAL [CONTINUED]

On the DISTRIBUTION OF CAPITAL AMONG THE DIFFERENT EMPLOYMENTS ¹⁵²:

"CAPITAL IS DIRECTED TO DIFFERENT EMPLOYMENTS BY THE RATE OF PROFITS. This GENERAL PRINCIPLE is modified by: * 1) the difficulties connected with a change of investment; 2) the risk which attends different investments. Risk of losses* determined by the INSURANCE SOCIETIES. But there is also *the risk of success. Should we take into account the many losses sustained by the community of merchants, the number of failures, as well as the instances of uncommon success, it would be found, that the average rate of profit in commerce, does not differ from that of capital, when vested in other branches of production" (S. P. Newman, *Elements of Political Economy*, Andover and New York, 1835, [pp.] 83-85).

"In the existing economical arrangements of society, the very act, which is performed by the merchant, of standing between the producer and consumer, advancing to the former capital and receiving products in return, and then handing over these products to the latter, receiving back capital in return, is a transaction, which both facilitates the economical processes of the community, and adds value to the products in relation to which it is performed"* (l.c., [p.] 174).

"Time is saved for the MANUFACTURER and the CONSUMER by his intervention and money. This *service requires an outlay of capital and labour* and must, *since it adds value to products, for the same products in the hands of consumers are worth more than in the hands of producers*" [p. 175],

// this is *absolutely wrong*. The use value of a commodity is greater IN THE HAND OF THE CONSUMER THAN IN THAT OF THE PRODUCER, because it is only then that it is REALISED at all. *The value in use of the commodity only becomes realised by passing into the sphere of consumption. In the hand of the producer it exists in a latent form only. But I do not pay a commodity twice over, first its value in exchange, and secondly its value in use. By paying its value in exchange, I appropriate its value in use. Its *value in exchange* is not augmented by passing from the producer to the consumer*//,

"STRICTLY BE CONSIDERED AN ACT OF PRODUCTION." //This is wrong.// (l.c., [p.] 175.)

“Let us say that trade is useful, but let us not say: trade is productive” (F. Vidal, *De la répartition des richesses etc.*, Paris, 1846, [p.] 198).^a

A very good work on mercantile capital is: Corbet (Thomas), *An Inquiry into the Causes and Modes of the Wealth of Individuals; or the Principles of Trade and Speculation Explained*, London, 1841.

Corbet does not pretend to give the GENERAL PRINCIPLES OF POLITICAL ECONOMY here. He conceives mercantile capital as something specific, and he describes its specific mode of operation. The connection between mercantile capital and the GENERAL PRINCIPLES IS RATHER LOOSELY more hinted at than developed. Yet, this is not the task Corbet sets himself. He leaves it to the GENERAL ECONOMIST. We shall now go through some of Corbet's main points.

*“All trade consists in the *exchange* of things of *different kinds*; and the advantage arises out of this *difference*. To exchange a pound of bread against a pound of bread ... would be attended with no advantage ... hence trade is advantageously contrasted with *gambling, which consists in the mere exchange of money for money*” * (l.c., [p.] 5).

With $C-M-C'$ the ADVANTAGE arises from the difference between C and C' , i.e. the use values exchanged. The commodities are only *realised* as use values through this exchange, by passing out of the hand in which they are merely repositories of exchange value into the hand in which they are really use values. Exchange value appears as a mere form for the mediation of this process, and no alteration in the exchange value is IMPLIED IN IT. The whole movement of [XVIII-1076] capital $M-C-M'$, on the other hand, IMPLIES THE QUALITATIVE IDENTITY OF THE EXTREMES M and M' . * If no alteration were implied in the *quantity* of the extremes, the operation would be tautological, silly and useless. And in fact, suppose a merchant has bought commodities for £100 and the state of the market forces him to again sell them for £100. It is the same as if he had kept the original £100 in his hands, as far as he is concerned or his £100 are concerned. If he were forced to sell them for less, [which] may happen, the operation implies a positive loss, which can never be its purpose or its aim.* This is the general formula for capital, whether INDUSTRIAL OR MERCANTILE. And whether the trade is in commodities or money. It is always buying in order to sell; hence, if we leave aside the CHANGE IN THE QUANTITY OF M' , AS COMPARED WITH M , * it is the exchange of money for money, of value in exchange for value in exchange. There is no *difference* in the *kinds* of the commodities exchanged. Hence no advantage arising out of that difference.* Thus according to *Corbet*

^a Marx quotes from Vidal in French.—Ed.

every MOVEMENT of capital would be * *gambling*, and the difference between *gambling* properly so called and other kinds of capitalistic gambling would amount to this: In the one case //but this is also the case with all the operations of the monied capital properly so called// the exchange of money for money is concealed by intermediate movements; in the other case it is not. The gambler directly (and he shares this with the capital-lending capitalist, the banker, etc.) puts out money to gain more money or to lose the money put out. The productive capitalist, whether industrial or commercial, first exchanges his money for the commodity, to afterwards exchange the commodity for money. In the one instance the exchange of money for money is undisguised, direct, *sans phrase*. In the other instances it is concealed by intermediate movements, but does always appear as the result of the complex movements.* If Corbet therefore calls GAMBLING GAMBLING because it IS EXCHANGE OF MONEY FOR MONEY, EVERY MOVEMENT OF CAPITAL RESOLVES INTO GAMBLING. This is why e.g. *Pinto* regards trade as "*un jeu*".^a But since this *jeu* would soon have to come to an end if this operation were to continue, if only one side gained, an alternation would have to take place: now one side, now the other, would have to be THE LOSING OR THE WINNING PARTY. This only expresses the contradiction that profit UPON ALIENATION¹⁷ implies loss on one side, and therefore cannot be a continuous, general relation of production. *Pinto* says:

"Trade is a game; and nothing can be won from beggars. If one won everything from everybody for a long time, it would be necessary to give back the greater part of the profit voluntarily, in order to begin the game again. This devouring trade would destroy itself" (*Traité de la circulation et du crédit*, edit. *Pinto*, Amsterdam, 1771, p. 231).^b

And our friend M'Culloch in fact finds himself unable to distinguish in any way at all the principle of speculation, i.e. of GAMBLING, from that of trade and the movement of capitalism—buying in order to sell. He says:

"Every transaction in which an individual buys produce in order to sell it again, is, in fact, a speculation" (*A Dictionary, Practical etc., of Commerce etc.*, London, 1847, [p.] 1056 sqq.).

Note which is to be made on the division of labour.

Corbet establishes a very important new principle of the *division of labour* WITHIN THE SAME SPHERE OF PRODUCTION. However, this principle of the *division of labour* cannot be developed here, where we are speaking OF ITS GENERAL NATURE, because it already presupposes the

^a A game.—*Ed.*

^b Marx quotes in French.—*Ed.*

real movement of capital.¹⁵³ The principle is the equalisation of the prices of commodities, WITHIN A LONGER PERIOD OF YEARS, TO THEIR PRICE OF PRODUCTION. In industry proper it is already the peculiar circulation of fixed capital WHICH FASTENS THE PRODUCER NOT ONLY TO A PECULIAR SPHERE OF PRODUCTION, BUT TO A GIVEN SUBDIVISION OF THAT SPHERE. In trade (WHOLESALE) the same SUBSUMPTION TO A SPECIAL KIND OF TRADE, AND TO A PARTICULAR SUBDIVISION OF THAT KIND, IS PRODUCED by the cycle of equalisation of commodity prices [XVIII-1077], i.e. market prices, which stretches out over a number of years. In general Corbet emphasises very well how the AVERAGE PRICE, which appears AT FIRST VIEW as an abstraction,

1) appears as a principle regulating the division of labour;

2) how in turn particular TRADES—SPHERES OF EMPLOYMENT OF CAPITAL—are formed, which are only founded on AVERAGES.¹⁵⁴

*“The third principle of trade is, to deal always in the *same commodity*, or set of commodities” (p. 12).* “This is in part founded on and *aided by the necessity of equalising the fluctuation of trade” (l.c.). “Hence when trade has made its greatest advances, and comes the next to perfection, such *divisions of the professions*, as the Russian merchant, the American, the Dutch merchant, the timber merchant, the fruit merchant, etc.” ([p.] 14).

“*Profit*, on the general principle, is *always the same*, whatever be [the] price; keeping its place like an incumbent body on the swelling or sinking tide. As, therefore, prices rise, a tradesman raises prices; as prices fall, a tradesman lowers price, i.e. as they are raised or lowered to him, he raises or lowers them to his customers” * (l.c., [p.] 20).

In this *superficial* and *upside down* form it appears to the TRADESMAN THAT PROFIT DOES NOT RESULT FROM A SURCHARGE OF PRICE, BUT THAT IT FORMS PART AND PARCEL OF THE VALUE OF THE COMMODITY. It appears to him rather in the inverted form that “PROFIT” is always A SURCHARGE OVER AND ABOVE THE REAL VALUE OR PRICE OF THE PRODUCE.

The equalisation of profits (along with the AVERAGE story we have just noted) is well presented in the following:

*“Every necessary trade must or does yield profit, and when trade ceases to do so it ceases to be necessary” (l.c., [p.] 22). “One business not more profitable than another” (l.c.). “*One business not more hazardous than another*” * ([p.] 24). “E.g. shipping: With regard to the trade in general, *the freight must compensate or pay for all hazards, and so far as the individual is concerned, they are covered or reduced to nothing by *insurance; a device by which the loss is spread over all*,” *

//it would be just as foolish to say *that this loss *ceases to exist*, because *it is spread over all*, as it would be to say that the diminution of profits resulting from the diminishing proportion of variable to constant capital, or from the longer revolutions of fixed capital or the later returns of some sorts of circulating capital, or of any of the circumstances, regulating the equalisation of profits between different spheres of production—and the hazard, the risk

of loss, greater or smaller in different spheres, fully enters into those regulating circumstances—does take away the diminution of the general profit of capital caused by those circumstances //,

“or the whole trade is made to contribute to the loss of each individual member, with a fair remuneration for those who take the charge and run the risk of equalising the business, i.e. the underwriters”* (l.c.). “It can be assumed THAT ALL THE SHIPS BELONGING TO GREAT BRITAIN are lost (by force or through DECAY) in 17 years” ([p.] 26). “INSURANCE against loss by fire would seem a very hazardous TRADE, if one compares the SMALLNESS of the PREMIUM RECEIVED with the GREAT SUMS the INSURERS are called upon to pay.... But owing to THE GREAT EXTENT OF THE BUSINESS and to the AVERAGE which that *extent establishes, it is reduced to a business of very equal tenor, yielding always a fair profit or percentage on capital, and no more; wonderfully exact and uniform indeed considering the extremes to which it is subjected”* ([p.] 27). “When we say that one business is not more profitable than another, *this is to be understood of business in general; and taken along with the fact that each individual business is at one time more or less profitable, or pays better or worse than at another. That, indeed, a variation of profit as well as of price, to a certain extent, perpetually takes place or is in constant operation in each and all businesses, is beyond question.* It arises out of *adjusting the supply to the demand” ([p.] 33). “Fluctuations compensate each other” ([p.] 35). “Fluctuations, ebbs and flows, or oscillations continually happen or are constantly taking place, to a greater or [XVIII-1078] less extent, in each and all businesses”* ([p.] 36).

With regard to competition:

“FOR COMPETITION the following general principles apply: THE MINIMUM OF PRICE OF ANY COMMODITY REGULATES THE MARKET PRICE OF THAT COMMODITY. Secondly: IT IS NOT THE MAJORITY, BUT THE MINORITY OF PERSONS, who regulate competition. Thirdly: *it is capitalists, i.e. the greater or chief capitalists, who fix price. In this manner there is only one company in England for the manufacture of plate glass of any size, viz. the British Plate Glass Company at Ravenhead in Lancashire, all others having been found unable to compete with it; and the great thread manufacturers at Shrewsbury, oblige all other thread manufacturers in the kingdom to do as they do, as all the Ironfounders in Scotland are regulated by and follow steadily in the rear of the great Carron company”* (l.c., pp. 42-44). “LETTING e.g. of LANDS AND HOUSES IS A CONDITIONAL SALE, OR SALE OF THE USE OF A THING FOR A LIMITED TIME” (l.c., p. 81).

Businesses ON AVERAGE:

*“The great principle on which all insurance proceeds, whether sea, life, or fire, is a *verage*, the spreading of the general loss over the whole insured; or the uncertainty of individual events, and the certainty of general or cumulative.* E.g. *the duration of the life of any one person is very uncertain, but the average duration or term of human life is very certain or well established. So also in sea or fire insurance, the destruction of any individual or particular property is a matter of uncertainty, but the average amount or value of the property destroyed, or that will be destroyed, within a given time, is a thing pretty well ascertained or settled. It follows, therefore, that the less the risks (i.e. each individual risk) in amount, and the greater the number of them undertaken, the more nearly is the business reduced to a perfect average, and the better conducted” (l.c., [pp.] 100-01).

“Business is at all times overdone” (p. 115 sqq.). “However great the appetite or desire of the public for any thing, the food administered, the supply furnished,

goes always beyond the demand. Like the Malthusian principle of propagation, the talent in society is always in advance, redundant, superabundant* (e.g. in the writing of newspapers). ...Nowhere is this more conspicuous than in towns. A town is always *OVERBUILT*; THERE BEING ALWAYS MORE HOUSES THAN ARE WANTED, particularly in the *OUTSKIRTS OR SUBURBS*, where they *never pay, but seem as if built for the public good or the dignity or honour of the place—with but a far distant or prospective view to profit*" ([pp.] 115-17).

An important circumstance in the *circulation* and *reproduction* of capital is this: *Time* passes between the outlay and the RETURN of the capital, *EVEN IF IT RETURNS*. This interval, in proportion to its size, has a dual impact. *Firstly on the use value*. Time destroys use value absolutely; i.e. *every thing, in a certain period, deteriorates, and is at last corrupted, spoilt and bereft of the qualities which constitute its value in use; some articles sooner, some later. Some must be sold very quickly, not to deteriorate or to be altogether spoiled; some may stand a longer time. All are ruined, more or less, if, beyond a certain time, they do not enter into consumption, or, what is the same, prolong their existence as vendible commodities, instead of being used as values in use. This, then, is the *first risk* a commodity runs, in fact capital runs, by being converted from money into the shape of commodities, whether destined for individual or industrial consumption. Besides, the *conservation* of [XVIII-1079] commodities, so far as they are values in use or articles, requests spending upon them of capital and labour, in some instances less, in others more. Into their *mercantile price*, there can only enter the *average* cost which the conservation of a given article, during the interval that it finds itself upon the market, necessitates. That average cost, for a given article, is determined by the average time it is fixed in this *interval* between production and consumption, or its average *stay* as a commodity upon the market. For *different* articles this cost of conservation is evidently determined, not only by the *average time* they stay upon the market, but also by the average deterioration or cost of preventing that deterioration, according to the nature of different articles, *during the same time*. If the average time is given, the cost of conservation depends for different articles upon their specific qualities as values in use. If the cost, resulting from the different nature of the articles, is given, it exclusively depends upon their different *averages* of return, or the different averages during which they encumber the market, find themselves upon the market in the state of *commodities* (vendible commodities is only a tautology). This then constitutes *one item of the costs of circulation*. But it is evident, that this item, instead of adding to the value of the general production, can in no case be anything but a *deduction*

from it. Suppose, that the average time, during which all articles stay upon the market, be the same; suppose in the second instance, that their deterioration and the costs to counteract it be the same; that, therefore, the *unavoidable dechet*^a during the identical time of circulation and, moreover, the cost to prevent extra-*dechet* or deterioration, be the same for every sort of produce; then it is clear, that this unavoidable *dechet* on the one part, and the cost of limiting it to its minimum, is a deduction from the value of exchange of the article (at least its *surplus value*), firstly because in a given time so much percentage of the whole production is simply lost, and, secondly, because so much *faux frais de production*^b are incurred, incurred not in creating surplus value, but in the task of realising it. It would never do to say that the consumer must pay this. But, from what source is he to pay it? His source for paying is *his product*, or the co-property in the product of another person. It is then clear, that his produce has been diminished, and that his costs of production have been augmented. Out of a diminished fund of production and of increased costs of production, he is positively unable to compensate another producer for the same loss incurred by that other producer. It is, therefore, clear, that as far as this item enters into price, it does not change the relation of prices of commodities, so far as the *ratio of those costs of circulation* is identical for them, and that, so far as it changes the relation of prices, and even of profits, this can only constitute a compensation for the greater loss incurred by particular branches of business, which exceptional loss, inherent to the nature of the business, is spread, by the equalisation of profits, over the whole sphere of employment of capital.*

[XVIII-1080] *The second effect of time* (disregarding the general effect of the RETURN, TO ENABLE THE PRODUCER TO ENTER UPON REPRODUCTION) within the circulation process *affects not the *value in use* (and the value in exchange only secondarily, so far as it *exists* only in the value of use), but the *value of exchange* directly, without any regard to the changes the article itself, or the value in use of a commodity, may incur during its intermediate stay between production and consumption, or during its sojourn on the market. We shall not speak here of the changes in the market price of commodities, since we always are reasoning here upon the

^a Wear and tear.— *Ed.*

^b Overhead costs of production.— *Ed.*

supposition that commodities are selling at a price corresponding to their real values.

But the real value of commodities changes during a certain interval of time, and the greater the time, the larger the field, the opportunity for such changes of value. We do not take into consideration the mercantile capital. Although it has bought the article beneath its value, the value of the article may fall before it sells it, and in this case the difference between buying and selling price may either diminish, altogether vanish, or even the selling price may fall beneath the buying price according to an intermediate change having taken place in the value of the article.

But, as said, it is not worth while to consider here the mercantile capital in particular.

The process of circulation of the capital dissolves into two parts, epochs or phases—first, the conversion of commodity into money, and, secondly, the reconversion of money into commodities, viz. those commodities which constitute the ingredients entering into the production or formation of the first commodity; productive ingredients, as we shall call them for abbreviation's sake. Now we shall inquire how far any *variation or change in value* may affect price and profit; any variation taking place in one or the other of these two phases. We shall commence with the latter, the reconversion of money into the productive ingredient.

Be the commodity produced cotton twist. The twist has been sold, converted into money, the surplus value contained in its price has been realised, and it is now about being reconverted into its productive ingredients.

It must be converted into cotton, and *matières instrumentales*, such as coal, soap, tallow, etc. It must, furthermore, be converted into labour, by paying anew wages out of the funds realised. The value of cotton, like all other raw produce, depends, independently of the will of man, or the capital expended, on the seasons. The same quantity of labour may, according to the favour of the season, as far as the old cotton fields are concerned, or to the fertility of the soil, as far as new fields for the production of cotton have been broken up, yield very different quantities of cotton. Consequently, the *same quantity* of cotton, say a cwt or a lb, may represent very different values. Suppose now that the value of cotton had risen, either because of bad weather, or because the additional demand for cotton was supplied from less fertile soils. In this case, to replace that part of his capital, which must replace cotton, the spinner has to make a greater outlay of the money realised. [XVIII-1081] This enhancement in the value of cotton

may absorb or surpass the whole profit made in the first revolution of his capital. Then the price of labour may rise, because the value of necessary. He must again pay [the] greater part of his return, to replace that part of his capital which resolves into wages. If both these circumstances occur at the same time, it is probable that, even if he employs the whole money return—capital and profit—he will be unable // without recurrence to loan, not falling under our consideration now// to recommence his operations on the same scale of production. At all events, he will be unable to do so with *the same amount of capital* originally advanced. His operation may be a losing one, if we contemplate not one, but both consecutive revolutions of his capital. Suppose that, during the first turn, he advanced £100 and had returned to him 120. Suppose that in the second turn, the outlay for a less quantity of constant capital having augmented, and ditto the variable capital having risen in value, but diminished in quantity (the quantity of labour employed), so that his profits were only 5 p.c. He has won 5 p.c. or $5^{15}/_{21}$ in the second revolution. But he has advanced £120, not only the capital but the profit of the first revolution. Thus he has lost $£14^{6}/_{21}$; because this part of his profit realised in the first turn has vanished. In both cases he has realised surplus value; but part of the surplus value realised in the first turn has been lost in the second. In the second turn, considered for itself, he has lost, because he had £100 capital and 20 profit, and has now 120 capital and only $5^{15}/_{21}$ profit. It is evident that his average profit must be determined by the *equalisation* of these fluctuations during the different turns. Hence he must stay to the same business, to get the *average rate of profit*.

There may also take place a *change of value* in the ingredients of his fixed capital. If coal, or iron, would have risen in value, the *dechet* may be impossible to be replaced at the same price, at which it originally entered into the process of production. The cost of its replacement may be higher than its original cost value amounted to. Besides, apart from this part of the fixed capital—the *dechet* of the last year to be replaced—the value of the whole machinery, instruments, etc., may have sunk by a fall in its cost of reproduction, or by a fall in its *new* value. In fact, if the *dechet* costs more to replace, the unconsumed part of the machinery will also rise in value; if the value of the whole machinery sinks, the cost of replacing its *dechet* will also sink.

We come now to * C—M, *the *phasis* during which the produce circulates, waiting to be changed into money. We do not speak of any fall or rise of market price originating from changes in the

relative forces of demand and supply. Because we suppose prices=values. If in the preceding example the price of x lbs twist= $\pounds 120$ (including cost= $\pounds 100$, of which say $\pounds 80$ for raw material, i.e. *cotton* + $\pounds 20$ surplus value), and if the value of cotton fell suddenly, from an extraordinary harvest, by 60 p.c., then the cotton worked up in the twist floating upon the market would sink as well as the cotton in its raw state. Hence the price of the x lbs would be reduced from $\pounds 120$ to $\pounds 88$ (the cotton contained in it sinking from $\pounds 80$ to 48). The spinner would have incurred a positive loss of $\pounds 12$, although he had realised a profit of $\pounds 20$, or a profit of [XVIII-1082] 20 p.c. which, in fact, may be a surplus value of 50 p.c. and more. But it would for him be the same as if he had bought x lbs [of] cotton for $\pounds 80$ in order to sell them for 48. If there was not the surplus value sold in his twist, his return would be only= $48+20=\pounds 68$. Consequently of $\pounds 20$ more than it is now in consequence of the surplus value realised. In fact, if cotton continued on the same low scale of price, the manufacturer, in the new turn of reproduction, might lay out only $\pounds 48$ in cotton, $\pounds 20$ for the other expenses, and continue on the same scale of production. And he might act with the $\pounds 20$ profit as before. (In regard to the capital laid out, the rate of profit would even have risen.) But on a full or an approximate return of the former cotton prices, he would not possess sufficient capital for a reproduction on the old scale. If he had debts to pay (interest for instance for $\pounds 100$ borrowed or bills of exchange on the suppliers of the old cotton, coal, etc.) he might be bankrupt. And, at all events, the *monetary value of his capital* would have depreciated, although no depreciation would have taken place in the *value of money*— $\pounds 88$ would at all events represent a smaller capital than would 100 (120 with the profit) before. The effect would be, of course, the reverse, if the price of cotton, etc., had risen instead of having fallen.*

Such a CHANGE OF VALUE directly depreciates the capital (productive), IF THE CHANGE HAPPENS DURING THE FIRST phasis $C—M$; IT CRIPPLES REPRODUCTION AND DIMINISHES PROFIT, IF IT OCCURS DURING THE SECOND PHASE—: $M—C$.

But since the capital is always in both phases simultaneously— (newly invested capital, OR ADDITIONAL CAPITAL, IS, OF COURSE, ONLY AFFECTED BY THE CHANGES OF VALUE WORKING ON $M—C$)—, A CHANGE OF VALUE will thus WORK IN A CONTRARY DIRECTION UPON THE PART OF THE CAPITAL CIRCULATING AS CAPITAL (in $C—M$) and *the part of the capital reconverted from the form of money into that of the productive ingredients. For instance, if the value of cotton falls, the twists and cottons upon

the market will be depreciated, but the capital of the spinner, etc., reconverted into cotton will yield higher profits than before and may enable him to enlarge his scale of production. (It will of course damage him, if he possesses great provisions of raw cotton, before the change of value took place. This will be depreciated like the cotton already worked up in twist, etc., and still more immediately.) On the other hand, if the value of cotton rises, the price (hence the profit, since the cost remains the same) of the circulating twist, etc., in short of all goods into which cotton has entered, will rise, and so the capital returned far exceed the capital advanced (the same will be the case with productive capital already invested in cotton=provisions) while the capital *to be* reconverted into cotton * ($M-C$) * will yield lower profit and may necessitate either a contraction of production (should wages not have fallen simultaneously) or the employment of additional capital, to yield the same quantity of produce and to absorb the same quantity, as before, of surplus labour. It is only with overstocked markets (be it that the markets are overstocked with yarns, goods, etc., be it that large accumulations of cotton of the former harvest still encumber the warehouses of the merchant or fill those of the manufacturer) that a fall in the price of cotton (or any other productive ingredient) can harm the productive capitalist to any degree. But an enhancement in the value of cotton, etc., will always check reproduction to a high degree, while only with markets overstocked can it bring him any profit.*

AT ALL EVENTS, these RISKS, arising out of the *change of value in the productive ingredients of commodities, and, therefore, affecting commodities in the interval between production and sale, or between their monetary form and their reversion into the productive elements,* can never enter into the *costs of circulation* [XVIII-1083], THAT IS TO SAY, SUCH COSTS OF CIRCULATION AS ARE COMPENSATED FOR IN THE PRICE OF THE PRODUCE. It is clear so far that the AVERAGE RISKS FROM SUCH CHANGES OF VALUE AS ARE COMMON TO ALL SPHERES OF PRODUCTION CAN GIVE NO TITLE OF COMPENSATION FOR ANY PECULIAR SPHERE OF PRODUCTION. SECONDLY, the commodities which ARE EXCEPTIONALLY EXPOSED TO SUCH SUDDEN FLUCTUATIONS OF VALUE (e.g. all those into which the annual produce of the earth enters, as opposed to those into which a specific mining product enters) *if they incur the risk of extraordinary losses, run the chance of extraordinary gains. And thus this becomes equalised.*

The contemporary COTTON crisis resulting from the American Civil War¹⁵⁵ has demonstrated both of these things. On the one hand, the greatest misery in the MANUFACTURING DISTRICTS and a

standstill OF THE MILLS ON THE LARGEST SCALE. On the other hand, since the markets have since 1860 been oversupplied, an increase in the prices of the YARNS and GOODS available on the market, and therefore a rise in profits for the manufacturers to whom these GOODS belong. But particularly for those who possessed a STOCK OF COTTON, and are speculating with it in Liverpool.

Now back to Corbet.

* "Time produces a *difference of price*. Now the principles of trade suppose a constant selling with one hand as a buying takes place with the other, so as that a person *shall never have any stock on hand on which time can operate or produce an effect*.* This is never literally the case, even with a GROCER, much less with a CLOTHIER. THE EFFECT OF A RISE OR FALL OF PRICE HERE APPLIES especially TO THE MANUFACTURER, with whom, in many cases, a considerable time often elapses between the time when he buys the raw material and that at which he is *able to bring it to market worked up and finished ... while all must be affected to the extent of their stock on hand when they come out of business, according to the difference of price at that period as compared with what it was when they went in" ([p.] 121). "With regard to the profit of the shopkeeper, or the value of the labour laid out on a raw material by a manufacturer, if in either case a person can replace his stock at a price by as much less as the amount of that profit or the value of such labour, he is secure and safe whatever other difference may exist between the price of the commodity when purchased and when sold.* E.g. *shall he produce £100 worth of goods, if he sell them for £85 and replace his stock or raw material at £80, or sell them only for £80 and replace his stock or raw materials at £75, in either case he comes out of the transaction with a clear gain, profit or return on capital or stock of 5%; and he can never be placed in any better situation by an advance of price, because if in that case he has much to receive, he has as much to pay when he returns to the market. It will thus be seen *that the profit on stock has nothing to do with, and is altogether distinct from the rise or fall of price*"* ([p.] 121).

But in any case his capital is depreciated. Incidentally, it is only correct to say that he then always makes a profit of £5, but it is wrong to say that he always makes a profit of 5%. $5 \text{ on } 100 = 5\%$; $5 \text{ on } 80 = 6\frac{1}{4}\%$ and $5 \text{ on } 75 = 6\frac{2}{3}\%$. If in consequence of the VARIATION OF VALUE there is a fall in THE VALUE OF CAPITAL, the *rate of profit* will rise, provided that the AMOUNT OF PROFIT remains the same; if the VALUE OF CAPITAL rises in the given manner, the *rate of profit* will fall, provided that THE AMOUNT OF PROFIT REMAINS THE SAME. This point is purely formal with the MERCHANT, who always adds e.g. 5%, *whatever the price of the commodity. The same does not hold true with the producing capitalist. The *rate of profit* must rise with him in the one case, and fall in the other, in as much as he sells the same surplus labour as before.*

It is clear from the above that it is necessary to *distinguish between *one revolution of capital*, and the set of revolutions or repeated number of revolutions which a capital describes in an *economic cycle of reproduction*.* If we consider ONE SINGLE REVOLUTION, the profit=the *ratio of the surplus to the capital advanced. And

if he sells his commodity under cost price, it is a clear loss. Here we have in fact only the difference between the buying price (or what is the same to the producing capitalist, the cost price) and the selling price (or production price): the difference between the value of the capital originally advanced, and the value to which the capital worked up into the commodity is sold. However, the thing is different, if we consider not only one productive [XVIII-1084] revolution, but the process of continual reproduction during an economic cycle encompassing several years.* Just as important here, *not only for the profit realised, but for the value of the original capital to be [re]placed, [is] the concatenation of, or the ratio between, the different single revolutions; in one word the difference between the original value of the capital at the beginning of a turn and its *replacing value* at the second turn and so forth. For instance, if the capital=100, and profit=10 at the end of the first turn, and the *replacing value* at the beginning of the second turn=110, profit=0. And the reproduction would be commenced under worse circumstances; since only the same mass of surplus labour would be absorbed, although the capital advanced would have been augmented. The cost price would have increased, and the rate of profit decreased. These fluctuations are equalised in the whole cycle (even if the capital be depreciated finally, it will be made up by profit) which comprises a set of turns.*

*“The fall of prices, however, acts as a great discouragement to trade; because although the capitalist does not in effect, at least considered as a *merchant*, lose by it, he seems to do so, and the noncapitalist is *ruined*. Thus, supposing a person without capital to have purchased £100 worth of goods, and to have given his bill for that amount, if he is obliged to sell them for £80, or can sell them for no more, he is minus £20, and so cannot meet the demands on him, and is obliged to stop. As is commonly the case, the first bill of a person in such circumstances will be paid by selling below prime cost, and so may the second; but it is obvious that such an expedient must soon tell, and bring matters to a crisis.* The NON-CAPITALIST is always EXPOSED to this *fatality, and his situation very much resembles a time bargain between gamblers in the stocks; with this distinction that he wants the funds necessary to pay his differences when the day of settlement arrives, if the same shall be against him” ([p.] 122).

“Should we admit that the value of manufactured goods is affected by an *alteration in the value of the raw material*, some, particularly woollen goods, vary considerably, and consequently a person may gain or lose by having a stock of such on hand* ... for the essence of speculation lies after all in the **raw material*, without seeming to do so, and would be properly carried into effect only in the coarser or plainer sorts, standing clear of fashion and the expense of manufacture as much as possible” ([p.] 128 sqq).

“*Accumulation of stocks or non-exchange ... overproduction*” ([p.] 104).

“A bushel of grain or a yard of cloth has, properly considered, no *progressive value*; is fixed and unalterable in its nature; and can be affected only by an

alteration in other things, which may be either for or against according to circumstances" ([p.] 204).

"... *time bargains* in the funds ... this is branded with the name of gambling; because *the one seems to lose exactly what the other gains*... And gambling it certainly is" ([pp.] 207-08).

"With regard to the latter"* (the morality of this gambling with FUNDS)
* "indeed, we can see nothing in them different from what takes place in *all speculation, which*, so far as it goes upon the difference of price between one time and another, futurity and contingency, *may equally come under the denomination of gambling*; and in point of fact, there are bargains for commodities which proceed upon the stipulation of delivery at a future period or the payment of a difference in lieu of it"* ([p.] 209).

[5) THEORIES OF SURPLUS VALUE¹⁵⁶]1) PROLETARIAN OPPOSITION
ON THE BASIS OF RICARDO4) THOMAS HODGSKIN, *POPULAR POLITICAL ECONOMY.*
FOUR LECTURES DELIVERED
AT THE LONDON MECHANICS' INSTITUTION, LONDON, 1827¹⁵⁷

*"Easy labour is only *transmitted skill*"* ([p.] 48).

"As all the advantages derived from the division of labour *naturally centre in and belong to the labourers, if they are deprived of them,* and in the *progress of society* those only are enriched *by their improved skill who never labour—this must arise from unjust appropriation; from usurpation and plunder in the party enriched,* and from *consenting submission in the party impoverished"* ([pp.] 108-09).

[XVIII-1085] "The labourers, to be sure, multiply too rapidly when *that multiplication is only compared with the want of the capitalist for their services" (l.c. [p.] 120). "Malthus points out the effects which an increase in the *number of labourers* has in lessening the share which each one receives of the annual produce—the portion of that *distributed* amongst them being a definite and determinate quantity not regulated in any degree by what they annually create" (l.c.).

"Labour, the exclusive standard of value, * but *labour, the creator of all wealth [is] *no commodity*"* (l.c., [p.] 186).

Regarding the influence of money on the expansion of wealth, Hodgskin remarks correctly:

"As a man can dispose of small portions of produce that is corruptible, for what is incorruptible, he is under no temptation to throw it away; and thus the use of money adds to wealth, by preventing waste" ([p.] 197).

The chief advantage of RETAIL TRADE derives from the fact that the QUANTITY in which commodities are best produced is not that in which they are best distributed (l.c. [p. 146]).

"Both the theory relative to capital, and the practice of stopping labour at that point where it can produce, in addition to the subsistence of the labourer, a profit for the capitalist, seem opposed to the natural laws which regulate production" ([p.] 238).

With regard to the *accumulation of capital*, Hodgskin advances roughly the same ideas as those contained in his first book.¹⁵⁸ Nevertheless—for the sake of completeness—we will reproduce the main passages.

"If one considers for example fixed capital, the most favourable position for the IDEA OF CAPITAL AIDING PRODUCTION, 3 CLASSES of circumstances are to be distinguished under which [the results of] accumulation of capital are very DIFFERENT. 1) WHEN MADE AND USED BY THE SAME PERSONS. It is obvious that EVERY ACCUMULATION IN HIS POSSESSION OF THE INSTRUMENTS HE MAKES AND USES, FACILITATES HIS LABOUR. *The limit to such an ACCUMULATION is the POWER of the LABOURER TO MAKE AND USE THE INSTRUMENTS IN QUESTION.* 2) WHEN MADE AND USED BY DIFFERENT PERSONS, WHO SHARE BETWEEN THEM IN JUST PROPORTION THE PRODUCE OF THEIR COMBINED LABOUR. Capital may be made by one labourer and used by another; *they divide the commodity in proportion as each has contributed by his labour to produce it... I should rather express this fact, however, by saying that a part of the society employed in making instruments, while another part uses them, is *a branch of division of labour* which aids productive power and adds to the general wealth. As long as the produce of the two classes of labourers is divided between them, the accumulation and increase of such instruments as they can make and use, is as beneficial as if they were made and used by one person"* ([*Labour Defended...*, London, 1825, pp.] 243-44). "3) When * owned by a class of persons who neither make nor use it" [p. 243]. "The capitalist being the mere *owner* of the instruments, is not, as such, a labourer. He in no manner assists production"* [pp. 244-45].

// In other words, production *is assisted by the *instrument*, but not by the title A holds to the instrument; not by the circumstance that the instrument is owned by a non-labourer.*//

"He acquires possession of the produce of one labourer, which he makes over to another, either for a time as is the case with *most kinds of fixed capital, or for ever, as is the case with wages, whenever he thinks it can be used or consumed for his advantage. He never does allow the produce of one labourer, when it comes into his possession, to be either used or consumed by another, unless it is for his benefit. He employs or lends his property to share the produce, or natural revenue, of labourers; and every accumulation of such property in his hands is a mere extension of his power over the produce of labour, and retards the progress of national wealth. This [is] at present the case... When the capitalist, being the owner of all the produce, will allow labourers neither to make nor use instruments, unless he obtains a profit over and above the subsistence of the labourer, it is plain that bounds are set to productive labour much within what nature prescribes. *In proportion as capital in the hands of a third party is accumulated, so the whole amount of profits required by the capitalist increases, and so there arises an artificial check to production and population...* In the present state of society, the labourers being in no case the owners of capital, every accumulation of it adds to the amounts of profit demanded from them, and extinguishes all that labour which would only procure the labourer his comfortable subsistence. ... when it is admitted that labour produces all things, even capital, it is nonsense to attribute productive power to the instruments labour makes and uses. ...wages facilitate not production, like instruments. *Labour, not capital, pays all wages...*" [XVIII-1086] The greater part of the ADVANCES of CAPITALISTS consists of *promises to pay... The master manufacturer has either money or paper with which he pays wages; those wages his labourers exchange for the produce of other labourers, who will not keep the wages, whether money or paper, and it is returned to the manufacturer, who gives in exchange for it the cloth which his own labourers have made. With it he again pays wages, and the money or paper again goes the same round...*

"The invention and employment of paper money has revealed that CAPITAL is

by no means *SOMETHING SAVED*. As long as the capitalist, to realise his *WEALTH*, or command over *OTHER PEOPLE'S LABOUR*, was obliged to have in his possession AN *ACTUAL ACCUMULATION OF THE PRECIOUS METALS OR COMMODITIES*, we might have SUPPOSED that *ACCUMULATION OF CAPITAL* was the result of AN *ACTUAL SAVING*, and that on it depended the progress of society. But when paper money and parchment *SECURITIES* were invented, when the possessor of nothing but *SUCH A PIECE OF PARCHMENT RECEIVED AN ANNUAL REVENUE IN PIECES OF PAPER* with which he obtained whatever was necessary for his own use and consumption, *and not giving away all the pieces of paper, was richer at the end of the year than at the beginning, or was entitled next year to receive a still greater number of pieces of paper, obtaining a still greater command over the produce of labour,* it became evident that capital was not any thing saved; and that the *INDIVIDUAL CAPITALIST* did not grow rich by AN *ACTUAL AND MATERIAL SAVING*, but by *DOING SOMETHING WHICH ENABLED HIM ... TO OBTAIN MORE OF THE PRODUCE OF OTHER PEOPLE'S LABOUR...*

"It ascribes TO HIS" (the capitalist's) *"*property* merely, whether he employ it to *pay wages*, or whether it consist in useful instruments, all that vast assistance *which knowledge and skill, when realised in machinery, give to labour...* The united labours of the miner, the smelter, the smith, the engineer, the stoker, and of numberless other persons, and not the lifeless machines, perform whatever is done by steam engines... *By the common mode of speaking, the productive power of this skill is attributed to its visible products, the instruments, the mere owners of which, who neither make nor use them, imagine themselves to be very productive persons*" (p. 245 sqq.).*

With regard to his polemic against "*THE DANGER OF FORCING CAPITAL OUT OF THE COUNTRY*" [p. 253], and against the *INTEREST OF CAPITAL AS [a] NECESSARY STIMULUS FOR INDUSTRY*, or concerning the *SAVINGS THEORY*, see *IX, 47*.¹⁵⁹ To be included in the *CHAPTER on the vulgar economists*.³

"As the population increases *both increased production and consumption take place, which is all that is ever meant by the terms accumulation or increase of national wealth*" (l.c., [p.] 257).

m) RAMSAY (GEORGE) (OF TRINITY COLLEGE),
AN ESSAY ON THE DISTRIBUTION OF WEALTH, EDINBURGH, 1836

With Ramsay we return again to the political economists.

In order to find a place for commercial capital, he calls it "*THE TRANSPORT OF COMMODITIES FROM ONE PLACE TO ANOTHER*" ([p.] 19). He thus confuses trade with the *CARRYING INDUSTRY*.

Ramsay's chief contribution:

First: That he does in fact make the distinction between *constant and variable capital*. True, this occurs in such a manner that the distinction between fixed and circulating capital which he takes from the circulation process is the only one which he *nominally* retains, but he defines fixed capital in such a way that it includes all the elements of constant capital. He therefore regards as *fixed* capital, not only machinery and instruments, buildings in which labour is carried on or in which the result of labour is *STORED*,

draught and breeding animals, but also all raw materials (semi-manufactures, etc.), "THE SEED OF THE AGRICULTURIST AND THE RAW MATERIAL OF THE MANUFACTURER" ([p.] 22-23). Moreover "MANURE OF ALL KINDS, FENCES FOR AGRICULTURE AND THE FUEL CONSUMED IN MANUFACTURES" (l.c. [p. 23]) are fixed capital.

*"Circulating capital" consists only *of subsistence* and *other necessities advanced to the workmen, previous to the completion of the produce of their labour*" (l.c.).

It can be seen therefore that by "CIRCULATING CAPITAL" he understands nothing but [XVIII-1087] the part of capital that can be resolved into wages, and by FIXED CAPITAL, the part that can be resolved into the objective conditions—means and materials of labour. The mistake here, however, is the identification of this division of capital, which is directly derived from the production process, with the distinction which arises from the circulation process. This is due to his adherence to the tradition of political economy.

On the other hand, Ramsay again confuses the purely material element of the fixed capital thus defined with its existence as "capital". Circulating capital (i.e. variable capital) does not enter into the real labour process, but what does enter, is living labour, which is bought with circulating capital, and which replaces it. What enters in addition into the labour process is constant capital, that is, labour objectified in the objective conditions of labour, in the materials and means of labour. Ramsay therefore writes:

"Fixed capital alone, not circulating, is properly speaking a source of national wealth" ([p.] 23). "Labour and fixed capital are the only elements of expense of production" ([p.] 28).

What is really expended in the production of a commodity are raw materials, machinery, etc., and the living labour which sets them in motion.

"CIRCULATING" CAPITAL IS SUPERFLUOUS, EXTRANEOUS TO THE PROCESS OF PRODUCTION.¹⁶⁰

"Were we to suppose the labourers not to be paid until the completion of the product, there would be no occasion whatever for circulating capital. Production would be just as great. This proves that *circulating capital is not an immediate agent of production, not even essential to it at all, but merely a convenience rendered necessary by the deplorable poverty of the mass of the people*" ([p.] 24). "The *fixed capital alone constitutes an element of cost of production in a national point of view"* ([p.] 26).

In other words: the labour objectified in the conditions of labour—materials and means of labour—which we call "fixed capital", and the living labour, in short, embodied, objectified

labour and living labour, are necessary conditions of production, elements of the national wealth. On the other hand, it is a mere "convenience" due to the "deplorable poverty of the mass of the people" that the means of subsistence of the workers at all assume the form of "CIRCULATING capital". Labour is a condition of production, but wage labour is not, and neither, therefore, is it necessary that the workers' means of subsistence confront them as "capital", as an "advance by the capitalist". What Ramsay overlooks is that if the means of subsistence of the workers did not confront them as "capital" (as "circulating capital", as he calls it), neither would the objective conditions of labour confront them as "capital", as "fixed capital", as he calls it. Ramsay attempts in earnest, and not merely in words as the other economists do, to reduce capital to "A PORTION OF THE NATIONAL WEALTH, EMPLOYED, OR MEANT TO BE EMPLOYED, IN FAVOURING REPRODUCTION" [p. 21]; he therefore declares wage labour and consequently capital—that is the social form which the means of reproduction assume on the basis of wage labour—to be unimportant and due merely to the poverty of the mass of the people.

Thus we have arrived at the point where political economy itself—on the basis of its analysis—declares the *capitalist form* of production, and consequently *capital*, to be not an absolute, but merely an "accidental", historical condition of production.

Ramsay, however, does not go far enough to draw the correct conclusions from his premisses, from the new definition which he has given to capital in the immediate production process.

Ramsay comes indeed close to the correct definition of surplus value.

"A circulating capital will always maintain more labour than that formerly bestowed upon itself. Because, could it employ no more than had been previously bestowed upon itself, what advantage could arise to the owner from the use of it as such?" ([p.] 49). Or will people assert that the *quantity of labour which any circulating capital will employ is no more than equal to that previously bestowed upon it?* This would mean that *the value of the capital expended was equal to that of the product"* ([p.] 52).

This means, therefore, that the capitalist exchanges less objectified labour for more living labour and that this surplus of unpaid living labour constitutes the excess of the value of the product over the value of the capital consumed in its production, in other words, the *surplus VALUE* (profit, etc.). If the amount of labour for which the capitalist pays WAGES=the amount which he receives back from the worker in the product, then the value of the product would be no greater than that of the capital and there would be no profit. Although Ramsay is very close here to the real

origin of surplus value, he is nevertheless too bound up in the tradition of the economists not to begin immediately straying again along false paths. First of all, the way he explains this exchange between variable capital [XVIII-1088] and labour is ambiguous. If he had been quite clear about this, then further misunderstanding would have been impossible. He says:

“Circulating capital, for instance, RAISED BY THE LABOUR OF 100 MEN, will set in motion 150 men. THEREFORE THE PRODUCT AT THE END OF THE YEAR will, in this case, be the result of the labour of 150 men” ([p.] 50).

Under what circumstances can the product of 100 men buy [the labour of] 150 men?

If the wages received by a worker for 12 hours' labour = the value of 12 hours' labour, then only one working day could be bought back with the product of his labour and only 100 [working days] with the product of 100 working days. But if the value of the daily product of his labour = 12 labour hours and the value of the daily wage he receives = 8 labour hours, then $1\frac{1}{2}$ working days or [the labour of] $1\frac{1}{2}$ men can be paid for, bought back, for the value of his daily product. And $100(1 + \frac{1}{2}) = 150$ men can be employed with the product of 100 working days. Thus, the condition in which the product of 100 men sets 150 in motion is that each of the 100 men and, in general, every worker, spends half as much time working gratis for the capitalist as he works for himself, or that he spends $\frac{1}{3}$ of the working day working gratis. Ramsay does not make this clear. The ambiguity appears in the conclusion: “THEREFORE THE PRODUCT AT THE END OF THE YEAR WILL, IN THIS CASE, BE THE RESULT OF THE LABOUR OF 150 MEN.” It will indeed be the result of the labour of 150 men in the same way as the product of 100 men was the result of the labour of 100 men. The ambiguity (and certainly the lack of clarity, *plus ou moins*^a derived from Malthus) is to be found in this: It appears as if the profit arises merely from the fact that 150 men are now employed instead of 100. Just as if the profit derived from the 150 workers arose from the fact that 225 workers can now be set in motion by the product of the 150 ($100:150 = 150:225$) ($4:6 = 6:9$). But that is not the point.

The labour which the 100 men supply = x , if x is their total working day. The wages they receive [will then equal] $\frac{2}{3}x$. Hence the value of their product = x , the value of their wages = $x - \frac{1}{3}x$, and the surplus value made on them = $\frac{1}{3}x$.

If the entire product of the labour of 100 men is again laid out

^a More or less.—Ed.

in wages, then 150 men can be employed with it and their product will be=to the wages of 225 men. The labour time of 100 men is the labour time of 100 men. But the labour they are *paid for* is the product of $66\frac{2}{3}$ men, that is, only $\frac{2}{3}$ of the value embodied in their product. The ambiguity [arises] because it appears as if the 100 men or the 100 working days (it makes no difference whether they are days calculated over a year or separate days) produce 150 working days—a product embodying the value of 150 working days; while, conversely, the value of 100 working days suffices to *pay for* 150 working days. If the capitalist continues to employ 100 men as he did previously, then his profit remains the same. He will continue to pay the 100 men a product=the labour time of $66\frac{2}{3}$ men and pocket the rest as he did before. If, on the other hand, he lays out the whole product of the 100 men in wages once again, then he *accumulates* and appropriates a new amount of SURPLUS LABOUR equal to 50 working days instead of only $33\frac{1}{3}$ as he did previously.

It is immediately apparent that Ramsay is not clear on the point, since he once again advances against the determination of value by labour time the otherwise “inexplicable” phenomenon that the *rates of profit* are equal for capitals which exploit different masses of labour.⁴³

*“The use of fixed capital modifies to a considerable extent the principle that value depends upon quantity of labour. For some commodities on which the same quantity of labour has been expended, require very different periods before they are fit for consumption. But as during this time the capital brings no return, *in order that the employment in question should not be less lucrative than others* in which the product is sooner ready for use, it is necessary that the commodity, when at last brought to market, *should be increased in value by all the amount of [the] profit withheld.*” This shows how *capital may regulate value independently of labour” * ([p.] 43).

It shows rather that CAPITAL REGULATES AVERAGE PRICES¹⁶¹ INDEPENDENTLY OF THE VALUE OF THE PARTICULAR PRODUCT and that it exchanges commodities not according to their value, but in such a way that ONE EMPLOYMENT OF CAPITAL ... should not be less [XVIII-1089] PRODUCTIVE THAN OTHERS. Since empty tradition is more powerful in political economy than in any other science, Ramsay does not fail either to reproduce the “wine in the cellar”¹⁶² argument which has been notorious since the time of [James] Mill. And he therefore concludes that “CAPITAL [is] A SOURCE OF VALUE INDEPENDENT OF LABOUR” ([p.] 55), whereas the most he would have been justified in concluding was that THE SURPLUS VALUE REALISED BY CAPITAL IN A PARTICULAR EMPLOYMENT DOES NOT DEPEND UPON THE QUANTITY OF LABOUR EMPLOYED BY THAT PARTICULAR CAPITAL. [XVIII-1090] This false conception of Ramsay’s in

this case is all the more surprising since, on the one hand, he grasps the *natural basis*, so to speak, of SURPLUS VALUE, and, on the other hand, he affirms with regard to one instance that the *DISTRIBUTION of SURPLUS VALUE*—its equalisation to the general rate of profit—does not increase the SURPLUS VALUE itself.

"The source of profit is the LAW of the MATERIAL WORLD, whereby the *beneficence of nature, when aided and directed by the labour and skill of men, gives so ample a return to national industry as to leave a *surplus* of products over and above what is absolutely necessary for replacing in kind the fixed capital consumed, and *for perpetuating the race of labourers employed...*"* [p. 205].

("PERPETUATING THE RACE OF LABOURERS" [XVIII-1091] is a fine result of capitalist production. Of course, if labour only sufficed to reproduce the conditions of labour and to keep the workers alive, no SURPLUS would be possible, HENCE NO PROFIT and NO CAPITAL. But that nature has nothing whatever to do with it and that the RACE OF LABOURERS PERPETUATES itself despite this SURPLUS and that the SURPLUS assumes the form of profit and on this BASIS the RACE OF CAPITALISTS "PERPETUATES" itself, has been admitted by Ramsay himself since he declares that "CIRCULATING CAPITAL", by which he means wages, wage labour, is not an ESSENTIAL condition of production, but is due merely to the "DEPLORABLE POVERTY OF THE MASS OF THE POPULATION" [p. 24]. He does not draw the conclusion that it is capitalist production which "PERPETUATES" this "DEPLORABLE POVERTY", although he admits it when he says that it "PERPETUATES THE RACE OF LABOURERS" AND LEAVES THEM ONLY AS MUCH AS IS NECESSARY FOR THAT PERPETUATION. In the sense indicated above it can be said that SURPLUS VALUE, etc., rests on a *natural law*, that is, on THE PRODUCTIVITY OF HUMAN LABOUR in its exchange with nature. But Ramsay himself states that a source of SURPLUS VALUE is the *absolute lengthening of labour time* (p. 102) as well as the increased productivity of labour brought about by industry.)

* "... Let the gross produce be ever so little more than is strictly essential for the above purposes, and the separation of a distinct revenue from the general mass, under the appellation of profit, and belonging to another class of men, becomes possible" ([p.] 205). "*The very existence of the master-capitalists as a distinct class is dependent on the productiveness of industry*"* ([p.] 206).

Secondly, with regard to the equalisation of the rate of profit as a result of the rise in prices IN SOME BRANCHES caused by increases in wages, Ramsay observes:

The rise in prices in some branches of industry resulting from increases in wages * "by no means exempted the master-capitalists from suffering in their profits, nor even *at all diminished their total loss*, but only served to *distribute it more generally^a among the different orders composing that body*"* ([p.] 163).

^a Ramsay has "equally".—Ed.

And if the capitalist whose wine is the product of 100 men (Ramsay's example) sells it for the same price as a capitalist whose commodity is the product of 150 men, in order that "THE EMPLOYMENT [of capital] IN QUESTION BE NO LESS LUCRATIVE THAN OTHERS" [p. 43], then it is clear that thereby the SURPLUS VALUE embodied in the wine and in the other commodity is not increased, but only DISTRIBUTED EQUALLY between DIFFERENT ORDERS OF CAPITALISTS [XVIII-1091].

[XVIII-1089] He also brings up again Ricardo's EXCEPTIONS.¹⁶³ These latter will have to be discussed in that part of *our* text where we speak of the conversion of VALUE INTO PRICE OF PRODUCTION.¹⁶⁴ That is, very briefly, as follows. Provided that in the different TRADES the length of the working day (in so far as this is not compensated by the INTENSITY OF LABOUR, the unpleasantness of the work, etc.) is the same, or rather the SURPLUS LABOUR is the same [as well as] the rate of exploitation, the rate of surplus value can change only if wages rise or fall. Such variations in the rate of surplus value—the rise or fall in wages, will affect the production prices of commodities in different ways according to the organic composition of capital. Capital in which the variable part is large compared to the constant part, would acquire more surplus labour as a result of a fall in wages and would appropriate less surplus labour as a result of a rise in wages than capital with a larger proportion of the constant part to the variable part. A rise or fall in wages would therefore have opposite effects on the rate of profit in the two branches OF ON THE GENERAL RATE OF PROFIT. In order to maintain the general rate of profit, if wages rise, the prices of the first kind of commodities will rise, and those of the second kind will fall. (Either type of capital will of course be *directly* affected by variations in wages only in proportion to the greater or less quantity of living labour it employs in comparison with the total capital expended.) Conversely, if wages fall, the prices of the first kind of commodities will fall and those of the second kind will rise.

Strictly speaking, all this hardly belongs to the discussion of the original conversion of VALUES into production prices and the original establishment of the general rate of profit, since it is much more a question of how a *general rise or fall in wages* will affect production prices regulated by the general rate of profit.

Still less has this problem ANYTHING TO DO WITH THE DIFFERENCE between FIXED AND CIRCULATING CAPITAL. Bankers and merchants employ almost exclusively circulating capital and hardly any variable capital; that is, they lay out relatively small amounts of capital on

living labour. Contrariwise, a mine-owner employs incomparably more fixed capital than a capitalist engaged in tailoring. But it is very questionable whether he employs relatively as much living labour. It is merely because Ricardo advanced this special, relatively insignificant case as the *only instance of a divergence* between production price and VALUE (or, as he incorrectly put it, as an exception to the determination of VALUE by labour time) and presented it in the form of a difference between fixed and circulating capital, that this BLUNDER—and in an incorrect form at that—has survived as an important dogma in all subsequent political economy. (The mine-owner should be counterposed not to the tailor but to the banker and the merchant.)

*“The rise of wages is limited by the productiveness of industry. In other words, ... a man can never receive more for the labour of a day or year than with the aid of all the other sources of wealth, he can produce in the same time... His pay must be less than this, for a portion of the gross produce always goes to replace fixed capital” * (i.e. *constant capital*, raw materials and machinery, etc., according to Ramsay) * “with its profit” * ([p.] 119).

Here Ramsay confuses two things. The amount of “fixed capital” embodied in the daily product is not the product of the day’s labour of the worker; in other words, this portion of the *value* of the product represented by a portion of the product *in natura* is not the product of this day’s labour. On the other hand, profit is indeed a deduction from the daily product of the worker or from the value of this daily product.

Although Ramsay has not clearly elaborated the nature of surplus value and although in particular he remains firmly rooted in the old prejudices with regard to the relation of VALUE and production price and the conversion of surplus value into AVERAGE PROFIT, he has on the other hand drawn another, correct [XVIII-1090] conclusion from his conception of fixed and circulating capital.

Before coming to this [here is another passage about “value”]:

* “*Value* must be in proportion not merely to the capital truly consumed, but to that also which continues unaltered, viz. to the total capital employed” * ([p.] 74).

By this he means that profit, and therefore also the production price, must be in proportion [to the total capital employed] whereas the VALUE obviously cannot be altered by that part of the capital which does not enter into the value of the product. With the advance of society (i.e. of capitalist production) the fixed portion of capital increases at the expense of the circulating capital, i. e. that laid out in labour.⁴³ Therefore the demand for labour declines *relatively* as wealth increases or capital is accumu-

lated. In manufacture, the “evils” which the development of the productive power generate for the workers are temporary, but reappear constantly. In agriculture, they are continuous, especially in connection with the conversion of arable land into pasture. The general result is: With the advance of society, i.e. with the development of capital, here with that of national wealth, the condition of the workers is affected less and less by this development, alias, it *worsens* relatively in the same ratio as the general wealth increases, i.e. as capital is accumulated, or, what amounts to the same thing, as the scale of reproduction increases. One can see that it is a far cry from this conclusion to the naive conceptions of Adam Smith or the apologetics of vulgar political economy. For Adam Smith, the accumulation of capital is identical with growing demand for labour, CONTINUAL RISE OF WAGES, and *consequently* with a FALL OF PROFITS. In his time, the demand for labour did in fact grow at least in the same proportion in which capital was accumulated, because manufacture still predominated at that time and large-scale industry was only in its infancy.

“The DEMAND FOR LABOUR depends only” (DIRECTLY, IMMEDIATELY) “upon the AMOUNT OF CIRCULATING CAPITAL” ([pp.] 86-87). (This is tautology on Ramsay’s part, since he equates CIRCULATING CAPITAL with capital laid out in wages.) “With the progress of civilisation THE FIXED CAPITAL OF THE COUNTRY IS INCREASED AT THE EXPENSE OF THE CIRCULATING” ([pp.] 88-89). “The DEMAND FOR LABOUR will not therefore GENERALLY increase as CAPITAL AUGMENTS, at least not IN THE SAME PROPORTION” ([p.] 88). “It is not, until, favoured by the NEW INVENTIONS, CIRCULATING CAPITAL SHALL HAVE BECOME INCREASED beyond what it formerly was,”

//here again the wrong assumption creeps in that an INCREASE OF necessaries in general and INCREASE of that portion of necessaries intended for the workers are the same thing//

*“that a greater demand for labour will spring up. Demand will then rise, but not in proportion to the accumulation of the general capital. In countries where industry has much advanced, fixed capital comes gradually to bear a greater and greater proportion to circulating. *Every augmentation, therefore, in the national stock destined for reproduction, comes, in the progress of society, to have a less and less influence upon the condition of the labourer*” ([pp.] 90-91). “Every addition to fixed capital is made at the expense of the circulating”,* i.e. at the expense of the demand for labour ([p.] 91). * “The evils resulting from the invention of machinery, to the labouring population employed in manufactures, will probably be but temporary, *liable to be perpetually renewed however,* as fresh improvements are constantly making for economising labour” * [p. 91].

And for the following reasons. [*Firstly:*] The CAPITALISTS who USE THE NEW MACHINERY obtain EXTRAORDINARY PROFITS; consequently their capacity to save and to increase their capital grows. A portion of this is also used as CIRCULATING CAPITAL. Secondly: The price of the manufactured commodities falls in proportion to the DIMINISHED COST

OF PRODUCTION; thus the CONSUMERS save, and this facilitates the ACCUMULATION OF CAPITAL, a portion of which may find ITS WAY TO THE MANUFACTURING INDUSTRY IN QUESTION. Thirdly: The fall in the price of these products increases the demand for them ([pp.] 92-93).

“Thus though the machinery MAY THROW OUT OF EMPLOYMENT A CONSIDERABLE BODY OF PERSONS, this will yet probably be followed, AFTER A LONGER OR SHORTER PERIOD, by THE RE-ENGAGEMENT OF THE SAME, OR EVEN A GREATER NUMBER OF LABOURERS” ([pp.] 92-93). “In agriculture the case is widely different. The DEMAND FOR RAW PRODUCE cannot increase in that rapid way in which it may for MANUFACTURED GOODS... The most fatal to the COUNTRY PEOPLE is *the conversion of arable land into pasture... Almost all the funds which formerly supported men, are now vested in cattle, sheep, and other elements of fixed capital*” ([p.] 93).

[XVIII-1091] Ramsay remarks correctly:

“* Wages as well as profits are to be considered each of them as really a *portion of the finished product*, totally distinct in a national point of view from the cost of raising it” ([p.] 142). “Fixed capital ... independent of its results ... is a pure loss...* But, besides this, LABOUR, not WAGES, not WHAT IS PAID FOR IT, is an element of cost of production. LABOUR is a SACRIFICE. *The more of it is expended in one employment, the less for another, and, therefore, when applied to unprofitable undertakings, the nation suffers from the waste of the principal source of wealth...* The REWARD OF LABOUR does not constitute an element OF COST” ([pp.] 141-43).

(This is quite right: *labour*, and not *paid labour* or wages, must be considered as an element of value.)

Ramsay describes the *real* reproduction process correctly:

“In what manner is a comparison to be instituted between the product and the *stock expended upon it?... With regard to a whole nation ... it is evident that *all the various elements of the stock expended* must be *reproduced* in some employment or another, otherwise the industry of the country could not go on as formerly. The raw material of manufactures, the implements used in them, as also in agriculture, the extensive machinery engaged in the former, the buildings necessary for fabricating or storing the produce, must all be parts of the total return of a country, as well as of the advances of all its master-capitalists. Therefore, the quantity of the former may be compared with that of the latter, each article being supposed placed as it were beside that of a similar kind*” ([pp.] 137-39).

“Now as regards the individual capitalist

//this is a false abstraction. The nation does not exist, or exists only as the capitalist class, and the whole class operates in exactly the same way as the individual capitalist. The two methods of approach differ from one another only in that one clings to and isolates use value, the other exchange value//,

“since he does not *replace* his outgoings IN KIND, by far THE GREATER NUMBER must be obtained by EXCHANGE, A CERTAIN PORTION OF THE PRODUCT BEING NECESSARY FOR THIS PURPOSE. Hence each *individual master-capitalist comes to look much more to the exchangeable value of his product than to its quantity” ([pp.] 145-46).

[XVIII-1092] “The more the *value of his product exceeds the value of the capital advanced*, the greater will be his profit. Thus, then, will he estimate it, by comparing

value with value, not quantity with quantity.* This is the first difference TO BE REMARKED IN THE MODE OF RECKONING PROFITS BETWEEN NATIONS AND INDIVIDUALS."

//The nation too—SUPPOSING IT TO BE SOMETHING ELSE THAN THE SUM OF CAPITALISTS—can so far compare value with value: it can calculate the total labour time which it has to expend *to replace the used-up part of its constant capital and the part of the product consumed individually, and the time of labour spent in producing a surplus destined to enlarge the scale of reproduction.*//

"The second is, that, since the MASTER-CAPITALIST always makes an *ADVANCE OF WAGES* to the LABOURERS, *INSTEAD OF PAYING THEM OUT OF THE FINISHED COMMODITY*, HE CONSIDERS THIS AS WELL AS THE FIXED CAPITAL CONSUMED, A PART OF HIS EXPENSES, THOUGH THEY, NATIONALLY SPEAKING, are NOT AN ELEMENT OF COST."

//This difference too disappears in fact in the process of reproduction as a whole. *The capitalist always pays *out of the finished commodity*, that is to say, out of the commodity finished by the labourer yesterday he pays his wages tomorrow, or in point of fact, he gives him, in the form of wages, only an assignation of products *to be finished in future* or almost *produced* (i.e. finally produced) by the time they are bought.* The *ADVANCE* disappears as a mere illusion in reproduction, i.e. in the CONTINUITY OF THE PROCESS OF PRODUCTION.//

"Hence his RATE OF PROFIT will depend *upon the excess in the value of his product over and above the value of the capital, both fixed and circulating*" ([p.] 146).

//This is likewise true IN A "NATIONAL POINT OF VIEW". His profit always depends on what he himself pays for the product, WHETHER FINISHED OR NOT, WHEN HE PAYS WAGES.//

Ramsay has the merit, firstly, that he CONTRADICTS the false NOTION—CURRENT since Adam Smith—OF THE VALUE OF THE WHOLE PRODUCE DISSOLVING INTO REVENUE UNDER DIFFERENT NAMES; secondly, that he determines the rate of profit in two ways, [once] by the RATE of wages, i.e. the rate of surplus value, and a second time, by the value of the constant capital. But he transgresses in the opposite direction to Ricardo. Ricardo arbitrarily seeks to equalise the rate of profit and the rate of surplus value. On the other hand, the twofold determination of the rate of profit—1) by the rate of surplus value (HENCE by THE RATE OF WAGES) and 2) by the ratio of this surplus value to the total capital advanced, that is, IN FACT determined by the ratio of the constant capital to the total capital—is irrationally presented by Ramsay as two parallel circumstances which determine the rate of profit. He does not grasp the transformation which surplus value undergoes before it becomes profit. Whereas therefore Ricardo arbitrarily seeks to reduce the rate of profit to

the rate of surplus value in order to work out the theory of value consistently, Ramsay seeks to reduce surplus value to profit. We shall see later that the way he describes the influence of the VALUE of constant capital on the rate of profit is very inadequate, and even incorrect.

*"Profit must rise or fall exactly as the *proportion* of the gross produce, or of its *value*, required to replace necessary advances, falls or rises...* The rate OF PROFIT, therefore, depends *upon two circumstances: 1) the proportion of the whole produce which goes to the labourers; secondly, the proportion which must be set apart for replacing, *either in kind or by exchange*, the fixed capital"* ([pp.] 147-48).

In other words, therefore, [the rate of profit depends] on the excess of the VALUE of the product over THE SUM OF CIRCULATING AND FIXED CAPITAL; HENCE on the proportion WHICH, FIRSTLY, THE CIRCULATING CAPITAL, AND, SECONDLY, THE FIXED CAPITAL, BEAR TO THE VALUE OF THE WHOLE PRODUCE. If we know where this SURPLUS comes from, then the whole matter is very simple. But if we only know that the profit depends on the *ratio* of the SURPLUS to these outlays, then we can acquire the most inaccurate NOTIONS about the ORIGIN of this surplus, for example we can, like Ramsay, imagine that it originates in part in fixed (constant) capital.

[XVIII-1093] "It is certain *that an increased facility of raising the various objects which enter into the composition of fixed capital, tends, by diminishing this proportion, to raise the rate of profit, just as in the former case of an augmented return of the elements of circulating capital, which serves to maintain labour"* ([p.] 164).

With regard to the tenant farmer, for example:

*"... be the [amount of gross] return small or great, the quantity of it required for replacing what has been consumed in these different forms, can undergo no alteration whatsoever. This quantity must be considered as *constant, so long as production is carried on on the same scale*. Consequently, the *larger the total return*, the less must be the proportion of the whole which the farmer must set aside for the above purposes"* (l.c., [p.] 166).

"The more easily the FARMER who produces FOOD and RAW MATERIALS such as FLAX, HEMP, WOOD, etc., can reproduce them, [the more] his profit will increase. The FARMER'S PROFIT [increases] as a result of the INCREASE IN THE QUANTITY OF HIS PRODUCE, *the TOTAL VALUE of which REMAINS THE SAME*, but a SMALLER PROPORTION OF THIS SUM TOTAL, and CONSEQUENTLY OF ITS VALUE, is required FOR RESTORING THE VARIOUS ELEMENTS OF FIXED CAPITAL, WITH WHICH *THE FARMER CAN SUPPLY HIMSELF*; WHILE THE MANUFACTURER WOULD BENEFIT because HIS product would have a GREATER PURCHASING POWER"([pp.] 166-67).

Let us assume that the harvest=100 qrs and the seed corn=20 qrs, that is, $\frac{1}{5}$ of the harvest. Let us assume further that the harvest is doubled the following year (with the expenditure of the same amount of labour) and now=200 qrs. If the scale of production remains the same, then the seed corn=20 qrs as

previously, but this is now only $\frac{1}{10}$ of the harvest. One has to take into account however that the value of the 100 qrs [previously harvested]=that of the 200 qrs [now obtained], therefore 1 qr of the first harvest=2 of the second. 80 qrs remain over in the first case, 180 in the 2nd. Since wages are irrelevant to the present problem, which concerns the influence that a change in the value of constant capital exerts on the rate of profit, let us assume that the value of wages remains unchanged. Then, if [wages were] 20 qrs in the first case, [they are] 40 in the second. Finally, let us assume that the value of the other ingredients of constant capital which the farmer does not reproduce *in natura*=20 qrs in the first case and therefore 40 in the second.

We now have the following calculation:

1) *The product*=100 qrs. *The seed corn*=20 qrs. *The other elements of constant capital*=20 qrs, *wages*=20 qrs, *profit*=40 qrs.

2) *The product*=200 qrs. *The seed corn*=20 qrs. *The other elements of constant capital*=40 qrs, *wages*=40 qrs and *profit*=100 qrs, [i.e. its value]=50 qrs in the first case. There would therefore be a SURPLUS PROFIT of 10 qrs [in the second case].

Thus not [only] the rate of profit, but also the profit itself would have increased here, as a result of a change in the value of constant capital. Although wages remained the same in both 1) and 2), the ratio of profit to wages, that is, the rate of surplus value, would have risen. But this is only an illusion. The profit would consist firstly of 80 qrs, equal to 40 qrs in case 1), and the ratio to wages would remain the same; secondly, [in case] 2), of 20 qrs, equal only to 10 qrs in case 1), which would have been converted into revenue from constant capital.

But is this calculation correct? We must assume that the result [in case] 2) was due to a harvest which came about although work was carried on in the same conditions as prevailed in [case] 1). In order to clarify the matter, let us assume that 1 qr=£2 in [case] 1).

This means that for the harvest which has yielded him 200 qrs, the farmer has laid out: 20 qrs for seed corn (=£40), 20 qrs for other elements of constant capital (=£40), 20 qrs for wages (=£40). A total of £120, and the product=200 qrs. In the first case he likewise laid out only £120 (60 qrs) and the product=100 qrs=£200. The profit remaining was £80, or 40 qrs. Since the 200 qrs [in case 2)] are the product of the same amount of labour [as the 100 qrs in case 1)], then once again they are likewise=only £200. Thus, only £80 profit remains, which is now, however,=140 qrs.¹⁶⁵ Consequently, a qr now [costs the farmer] only £ $\frac{4}{7}$ and not £1. In other words, the value of a qr has fallen

from [£]2 to [£]⁴/₇, that is, by 1³/₇, and not from 2 to 1, that is, by a half as we assumed above in [case] 2) as opposed to [case] 1).

His total product [in case 2)]=200 qrs=£200. But £120 out of this £200 replaces the 60 qrs which he has expended, each one of which cost him £2. There thus remains a profit of £80 which=the remaining 140 qrs. How does this happen? The qr is now=£1, but each of the 60 qrs expended in production cost £2. They cost the farmer as much as if he had expended 120 of the new qrs. The remaining 140 qrs therefore=£80, or no more than the remaining 40 were worth previously. It is true that he sells each of the 200 qrs for £1 (if he sells his total product) and receives £200 for them. But of the 200 qrs, 120 have cost him £2 each, the remaining qrs therefore only yield him $\frac{4}{7}$ each.

If he now again lays out 20 qrs [for seed] (=£10 [if one reckons 10s. for a qr]), 40 qrs for wages (=£20), and 40 qrs for the other elements of constant capital (=£20), that is, a total of 100 qrs instead of 60 as previously and he harvests 180 qrs, then these 180 have not the same value as did the 100 previously [if one reckons £1 for a qr]. True, he has employed as much living labour as he did previously, and consequently the [XVIII-1094] value of the variable capital has remained the same and so [has the value] of the SURPLUS PRODUCE. But he has laid out less objectified labour, since the 20 qrs, which were=£20 previously, are now worth only 10.

The account will therefore work out as follows:

	<i>Constant capital</i>		<i>Variable capital</i>	<i>Surplus value</i>
1) 20 qrs seed corn	=£20	20 qrs (£20)	40 qrs (£40)	
20 qrs instruments of labour, etc.	=£20			
2) 20 qrs [seed corn]	=£10			
40 qrs [instruments of labour, etc.]	=£20	40 qrs (£20)	80 qrs (£40)	

In the first case the product comes to 100 qrs=£100.

In the second case the product comes to 180 qrs=£90.

Nevertheless the rate of profit would have risen [despite the fall in the value of the product], for in the first case the return on an outlay of [£] 60 was £40 and in the 2nd it was 40 for an outlay of 50. In the first case it amounted to 66²/₃%, in the second to 80%.

Anyhow, the rise in the *rate of profit* is not due to the *value* remaining unchanged, as Ramsay supposes. Since one part of the labour expended, i.e. the part contained in the constant capital (in seeds in this case), has diminished, the value of the product falls if

production continues on the same scale, just as the value of 100 lbs of twist falls if the cotton it is made of becomes cheaper. But the ratio of variable to constant capital increases (without the *value* of the variable capital increasing). In other words, the ratio of the total capital outlay declines in relation to the SURPLUS. HENCE the rate of profit rises.

If what Ramsay says were correct, if the value remained the same, then the *profit*, the amount of profit, and consequently also the rate of profit, would rise. There can be no question of a rise merely in the rate [of profit].

The question is not however disposed of for the special case. In agriculture this special case takes the following form: A certain amount of seed corn at the *old price of the product* figures in the harvest, this part is incorporated in the harvest *in natura*. The other expenses are defrayed by the sale of the corn at its old price. The old outlay yields a product which is twice as big as before. Thus, in the above-mentioned case, for example, where 20 qrs are used as seed corn (=£40) and the other outlays=40 qrs (=£80), the harvest yields 200 qrs and not, as the previous harvest, 100 qrs (=£200), of which 40 qrs=£80 were profit on a total outlay of 60 qrs=£120. The outlay in connection with this [second] harvest is absolutely the same as it was in the first—60 qrs, the value of which is £120, but instead of a SURPLUS of 40 qrs, the SURPLUS is now 140 qrs. The SURPLUS *in natura* has in this case increased considerably. But because the labour expended is the same in both CASES, the 200 qrs have no greater value than did the 100, that is, £200. In other words [the value of] the qr has fallen from £2 to £1. But since there was a SURPLUS of 140 qrs, it seemed that it had to come to £140, for one qr is worth just as much as any other.

The matter would be simplified if we considered it *d'abord* without regard to the reproduction process, that is, if we assumed that the tenant farmer was withdrawing from the business and selling his whole product. Then he would indeed have to sell 120 qrs to recover his outlay of £120 (to reimburse himself). In this way he would recover the capital advanced. Thus a SURPLUS of 80 qrs would remain, and not of 140, and since these 80 qrs=£40, they are worth in absolute terms as much as the SURPLUS in the first case.

In the course of the *reproduction* process, however, the matter is altered to a certain extent. For the farmer replaces the 20 qrs of seed corn *in natura* out of his own product. [As far as their value is concerned] they are replaced by 40 qrs in the product. But in the reproduction process he only needs to replace them with

20 qrs *in natura*, as was the case previously. The rest of his expenditure [expressed in quarters] increases in the same ratio as the qr is devalued (provided wages do not fall). To replace the remaining portion of constant capital, he now needs 40 qrs and not 20 as previously, and to replace wages he also needs 40 qrs instead of 20. Altogether he must now lay out 100 qrs, compared to 60 previously; but he need not lay out 120, the amount corresponding to the depreciation of the corn, because the 20 qrs [used as seed] which were worth £40, are replaced by 20 [quarters] (since in this context only their use value matters) which are worth [£]20. So evidently he has made a gain [XVIII-1095] of these 20 qrs, now worth £20. His SURPLUS is therefore not £80 but £100, not 80 qrs, but 100. (Expressed in qrs of the old value, not 40 but 50.) This is an unquestionable FACT, and if the market price does not fall as a result of ABUNDANCE, the farmer can sell 20 qrs more at the new value, thus gaining £20. In the course of *reproduction*, moreover, the farmer obtains this SURPLUS of £20 on the same outlay, because labour has become more productive, without the rate of surplus value having risen or the workers having performed more SURPLUS labour than previously or having received a smaller portion of the *reproduced part* of the product (which represents living labour). On the contrary, it is assumed that in the reproduction process the worker receives 40 qrs, whereas he received only 20 previously. This then is a rather peculiar phenomenon. It does not occur without reproduction, but it takes place in connection with it and it takes place [moreover] because the farmer replaces a PART OF HIS ADVANCES *in natura*. Not only the rate of profit could increase in this case, but the amount of profit as well. (With regard to the reproduction process itself, the farmer can either carry on on the old scale, in which case the price of the product will fall if he again obtains as good a harvest, because a portion of the constant capital has cost less, but the rate of profit will rise; or the farmer can increase the scale of production, sow more with the same outlay, and then both the rate of profit and the amount of profit will rise.)

Let us consider the manufacturer. Let us assume that he has laid out £100 in cotton twist and made a profit of [£]20. The product therefore=[£]120. It is assumed that [£]80 out of the outlay of £100 has been paid for cotton. If the price of cotton falls by half, he will now need to spend only 40 on the cotton and £20 on the rest, that is £60 in all (instead of £100); the profit will be [£]20 as previously and the total product will amount to £80 (if he does not increase the scale of his production). £40 thus remains in

his pocket. He can either spend it or invest it as additional capital. If he invests it, he will lay out [an additional] [£]26²/₃ on cotton and 13¹/₃ on labour, etc., on the new scale. The profit [will amount to] £13¹/₃. The total product will now be 60+40+33¹/₃, or £133¹/₃.

Thus it is not the fact that the farmer replaces his seed corn *in natura* which is the key, for the manufacturer buys his cotton and does not replace it out of his own product. What this phenomenon amounts to is this: release of a portion of the capital previously tied up in constant capital, or the conversion of a portion of the capital into revenue. If exactly the same amount of capital is laid out in the reproduction process as previously, then it is the same as if ADDITIONAL CAPITAL HAD BEEN EMPLOYED on the old scale of production. This is therefore a kind of accumulation which arises from the increased productivity of those branches of industry which supply the productive ingredients of capital. However, such a fall in the [price of] raw materials, IF DUE TO THE SEASONS, IS COUNTERACTED BY UNFAVOURABLE SEASONS, IN WHICH THE RAW MATERIALS appreciate. The capital released in this way IN ONE OR SEVERAL SEASONS is, therefore, to a certain extent, reserve capital for the other seasons. For instance, the MANUFACTURER whose [fixed capital] turns over once every 12 years, must arrange things in such a way that he can continue to produce—at least on *the same scale*—throughout the 12 years. One has therefore to take into account that the PRICES [of the raw materials] he has TO REPLACE fluctuate and even themselves out MORE OR LESS over a long period of years.

A rise in prices of the ingredients [of constant capital] has the opposite effect to a fall of the prices. (We are leaving variable capital out of account here, although if wages fall, less variable capital—in terms of value—will need to be laid out, and if they rise, more.) If production is to be continued on the old scale, then a greater outlay of capital is necessary. Therefore, apart from a fall in the rate of profit, extra CAPITAL MUST BE EMPLOYED OR A PART OF THE REVENUE MUST BE CONVERTED INTO CAPITAL, although it will not have the effect of ADDITIONAL CAPITAL.

ACCUMULATION has taken place in the one case although the value of the capital advanced has remained the same (but its physical elements have been increased). The rate of valorisation increases, and the absolute magnitude of profit increases, because the effect is the same AS IF ADDITIONAL CAPITAL had been advanced on the old scale. Accumulation has taken place in the other case in SO FAR AS the value of the capital advanced, i.e. that part of the value of the total output which functions as capital, has increased. But the physical elements have *not* been increased. The rate of profit falls. (The

amount of profit only falls if either a different number of workers is employed or if their wages rise as well.)

This phenomenon of the conversion of capital into revenue should be noted, because it creates the *illusion* that the amount of profit grows (or in the opposite case decreases) independently of the amount of surplus value. We have seen that, under [XVIII-1096] certain circumstances, a PART OF RENT can be explained by this phenomenon.¹⁶⁶

In the way mentioned above (that is, if the remaining 20 qrs=£20 are not used immediately to extend the scale of production, i.e. if they are not accumulated), a money capital of £20 is set free. This is an example of how *redundant money capital* can be extracted from the reproduction process although the aggregate value of commodities remains the same, namely, by a portion of the capital which existed previously in the form of fixed (constant) capital being converted into money capital.

How little the above phenomenon has to do with the determination of the *rate of profit*, becomes clear if one considers the case of A FARMER (OR *MANUFACTURER) who enters business under the new conditions of production. Formerly he wanted a capital of £120 to enter the business, £40 to buy 20 qrs [of] seeds, £40 for other ingredients of constant capital, and £40 to pay wages. And his profit was £80.* $80 \text{ on } 120 = 8 \text{ on } 12 = 2 \text{ on } 3 = 66\frac{2}{3}\%$.

HE NOW HAS TO ADVANCE £20 TO BUY 20 qrs OF SEED, £40 AS previously [to buy the other elements of constant capital], £40 FOR WAGES, SO THAT HIS OUTLAY OF CAPITAL=[£]100. AND profit is 80, that is 80%. THE AMOUNT OF PROFIT HAS REMAINED THE SAME, BUT ITS RATE HAS INCREASED BY 20%. Thus one can see that the fall in the value of SEED (or of the PRICE which has to be paid to *replace* the seed) has in itself nothing to do with the increase in the amount of profit, but implies merely an INCREASE IN THE RATE OF PROFIT.

Moreover, the FARMER in the one case—or the MANUFACTURER in the other—will not consider that he has obtained a larger profit, but that a portion of the capital previously tied up in production has been freed. And his view will be based on the following simple calculation. Previously, the capital advanced in production was=[£]120; now it=100, while 20 is now in the hands of the FARMER as free capital, money which can be invested in ANY way he likes. But in either CASE the capital=120 ONLY, its size has therefore not been increased. The fact, however, that $\frac{1}{6}$ of the capital has been divested of the form in which it is inseparable from the reproduction process does indeed have the same effect as an ADDITIONAL CAPITAL.

Ramsay has not got to the bottom of this matter because he has not at all clearly worked out the relationship between value, surplus value and profit.

Ramsay correctly expounds to what extent machinery, etc., in so FAR AS IT AFFECTS VARIABLE CAPITAL, influences profit and the rate of profit.¹⁶⁷ That is to say, he shows that this influence results from the depreciation of labour capacity, the increase of relative SURPLUS labour or, if the reproduction process is considered as a whole, also the reduction of the PART OF THE GROSS RETURN WHICH GOES TO REPLACE WAGES.

"An increased or diminished productiveness of the industry *employed in raising commodities which do not enter into the composition of fixed capital,* can have no influence on the rate of profit, *except by affecting the proportion of the gross amount which goes to maintain labour"* ([p.] 168).

"If the manufacturer has doubled his output as a result of improvements in machinery, the value of his GOODS MUST, in the end, FALL in the same proportion as their quantity has increased."

//It is assumed that in fact, taking the wear and tear of the machinery into account, twice the quantity costs no more than half did previously. Otherwise the VALUE [of the single commodity] falls, *but not in proportion to its quantity. Its quantity may double, while its value, the value of the single commodity, like that of the aggregate product, may sink only, instead of from 2:1, from 2:1¹/₄, etc.*//

"...and the MANUFACTURER benefits only in so far as he is able to clothe the worker more cheaply so that a SMALLER PROPORTION of the gross RETURN goes to the worker... The farmer too benefits //as a result of the increased industrial productivity// only in so far as a portion of his outlay is expended on CLOTHING for THE LABOURER and he can buy this more cheaply now; that is, in the same way as the MANUFACTURER" ([pp.] 168-69).

A fall [or rise] in the value of the INGREDIENTS of constant capital affects the rate of profit by altering the *ratio of surplus value* to the total capital outlay. A fall (or rise) in wages, on the other hand, [affects the rate of profit] by influencing the *rate of surplus value* directly.

SUPPOSE for example, that, in the above-mentioned case, the price of the seed (assuming the FARMER GROWS FLAX) remains the same, that is, £40 (20 qrs) and the rest of the constant capital costs £40 (20 qrs), but that wages—that is, wages for *the same* number of workers—fall from £40 to 20 (from 20 qrs to 10). In this case, the total [newly created] *value*, which=the wages+surplus value, remains unchanged. Since the number of workers remains the same, their labour is embodied in a value of 40+80=£120, as it was previously. But from this £120, 20 now goes to the workers

and the surplus value now amounts to 100. //It is assumed that no improvements have taken place which affect THE NUMBER OF LABOURERS EMPLOYED in this BRANCH.// The capital advanced is now 100 instead of 120 just as in the case where the value of the seed fell by half. But the profit is now [£]100, i.e. 100%, whereas in the other case, where the capital advanced was likewise reduced from 120 to 100, it was 80%. And as in that other case [£]20, or $\frac{1}{6}$ of the capital, [XVIII-1097] is set free. But in the former case, the surplus value remained unchanged—[£]80—(and since 40 was paid as wages, [the rate of surplus value] was 200%). In the latter case, the surplus value rises to 100 (and, since wages now come to [£]20, [the rate of surplus value increases] to 500%).

In this case, not only has the rate of profit risen but the *profit* itself, because the rate of surplus value has risen and consequently the surplus value itself. This differentiates this CASE from the other, something which Ramsay does not grasp. This always takes place when the increase in profit is not nullified by a corresponding reduction in the rate of profit resulting from a simultaneous CHANGE in the VALUE of constant capital. In the above-mentioned case, for example, the capital laid out is [£]120 and the profit 80, that is, $66\frac{2}{3}\%$. In the present case, the capital outlay is 100 and the profit 100=100%. If, however, the capital outlay had risen from 100 to 150 as a result of a CHANGE in the price of constant capital, then the profit—which has increased from 80 to 100—would only give a rate of $66\frac{2}{3}\%$.

[Because] "SUCH COMMODITIES HELP TO MAKE UP NEITHER FIXED CAPITAL NOR CIRCULATING, [it follows that] profit can in no way be affected by any ALTERATION in their PRODUCTIVENESS. *Such are luxuries of all kinds" ([pp.] 169-70).

"Master-capitalists gain by the abundance of luxuries because their profits will command a greater quantity for their private consumption; but the rate of this profit is in no degree affected either by their plenty or scarcity*" ([p.] 171).

D'abord, a portion of the LUXURIES can be used as one of the ingredients OF CONSTANT CAPITAL. Grapes, for example, in [the production of] wine, gold in luxury articles, diamonds in glass cutting, etc. But Ramsay excludes this CASE in SO FAR as he says: COMMODITIES which do not ENTER into FIXED CAPITAL. In that case, however, the concluding sentence—"SUCH ARE LUXURIES OF ALL KINDS", is incorrect.

However, productivity in the luxury industries can only increase in the same way as it does in all others—either because natural resources such as the land, mines, etc., from which the RAW MATERIALS FOR LUXURIES are procured, become more productive, or new, more productive sources are discovered; or again by

application of the division of labour, or, especially, by the use of machinery (or of better tools) and of natural forces. //The improvement of tools and their increasing differentiation belongs to the *division of labour*.// (One should not forget *chemical processes*.)

Let us now assume that the production time for LUXURIES is reduced due to machinery (or chemical processes), that less labour is required to produce them. This cannot have the slightest influence on wages, on the *value* of labour capacity, since these articles do not enter into the consumption of the workers (at least never into that part of their consumption which determines the value of their labour capacity). //It can influence the *market price* of labour, if workers are thrown onto the streets as a result of these developments and the influx onto the labour market is thereby increased.// Increased productivity in the luxury industries, therefore, has no influence on the rate of surplus value nor, consequently, on the rate of profit in so far as this is determined by the rate of surplus value. Nevertheless, it can indeed influence the rate of profit in so far as it affects either the *amount* of surplus value or the ratio of variable capital to constant capital and to the total capital. If, for example, machinery makes it possible to employ 10 workers where 20 were previously employed, then, indeed, the rate of surplus value is not modified in any way. The cheapening of luxury articles does not enable the worker to live more cheaply. He requires the same amount of labour time to reproduce his labour capacity as he did previously.

//In practice, therefore, the manufacturer of luxury articles seeks to depress the wages of labour below its value, [below] its minimum. This he is able to do because of the *relative surplus POPULATION* engendered by increasing productivity in other branches of industry, for example among knitters. Or—as likewise happens in these branches—he seeks to extend the *absolute labour time*, thus, in fact, producing *absolute surplus value*. It is correct, however, that *productivity* in the luxury industries cannot reduce the *value* of labour capacity, it cannot produce any relative SURPLUS value and, in general, cannot produce *that form* of surplus value which results from the *growing productivity* of industry *as such*.//

The amount of surplus value is determined in two ways: by the rate of surplus value, that is, the surplus labour (absolute or relative) of the individual workers; secondly, by the number of workers simultaneously employed. In so far therefore as increasing productivity in the luxury industry reduces the *number of workers* which a certain quantity of capital employs, it reduced the

amount of surplus value. HENCE ALL OTHER CIRCUMSTANCES REMAINING THE SAME, [it reduces also] the *rate of profit*. The same thing occurs if the number of workers is reduced, or remains *the same*, but the capital laid out on machinery and raw materials is increased; in other words, [it occurs] wherever there is any DIMINUTION in the ratio of variable capital to the total capital which is not balanced or partially offset by a reduction in wages. But since the rate of profit in this sphere [XVIII-1098] enters into the equalisation process of the general rate of profit just as much as that in any other sphere, increased productivity in the luxury industry would, in the case under consideration, bring about a fall in the general rate of profit.

Conversely: If the increased productivity in the luxury industry was [due to improvements carried out] not in that industry itself, but in those branches of industry which provide it with constant capital, then the rate of profit would rise in the luxury industry.

//*Surplus value* (that is, its size, its quantity, ITS TOTAL AMOUNT) is determined by the rate of surplus value multiplied by the number of workers employed. Certain circumstances may affect both factors simultaneously either in the same direction or in opposite directions, or they may affect only one of the factors. Apart from the absolute lengthening of the working day, increased productivity in the luxury industry can affect only the number [of workers employed]. The inevitable consequence therefore is a reduction in the amount of surplus value and hence in the rate of profit, even if no increase in constant capital takes place. If the constant capital does increase, however, a reduced amount of surplus value is calculated on an increased total capital.//

Ramsay comes closer to a correct understanding of the rate of profit than the others. The SHORTCOMINGS too are therefore more conspicuous in his exposition. He brings out all the factors involved, but he does it one-sidedly and therefore incorrectly.

Ramsay sums up his view of profit in the following passage:

“The rate of profit IN INDIVIDUAL CASES is therefore determined by the following causes: 1) The productiveness of the industry ENGAGED IN RAISING THE ARTICLES OF FIRST NECESSITY which are required by the labourer for FOOD, CLOTHING, etc.; 2) the productiveness of the industry employed IN RAISING THE OBJECTS WHICH ENTER INTO THE COMPOSITION OF FIXED CAPITAL; 3) THE RATE OF REAL WAGES.”

//Here this must mean the quantity of NECESSARIES, etc., which the worker receives, WHATEVER BE THE price OF THE ARTICLES COMPOSING IT.//

“A VARIATION IN the 1st and 3rd of these *causes acts upon profit by altering the proportion of the gross produce which goes to the labourer: a change in the

second affects the same, by modifying the proportion necessary for replacing, *either directly or by means of exchange*, the fixed capital consumed in production; for profit is essentially a question of proportion*" ([p.] 172).

He rightly reproaches Ricardo (although Ramsay's own presentation is also inadequate):

"Ricardo overlooks the fact that the whole product is not only divided up between WAGES and PROFITS, but that a part of it is also NECESSARY FOR REPLACING FIXED CAPITAL" ([p.] 174, note).

//It can already be noted in the first description of accumulation, i.e. of the CONVERSION OF SURPLUS VALUE INTO CAPITAL, that the entire SURPLUS LABOUR takes the form of *capital* (constant and variable) and of *SURPLUS LABOUR* (profit, interest, rent). For this CONVERSION reveals that SURPLUS LABOUR itself assumes the form of capital and that the unpaid labour of the worker confronts him as the *totality of the objective conditions of labour*. In this form it confronts him as alien property with the result that the capital which is antecedent to his labour, appears to be independent of it. [It appears] as a ready-made value of a given magnitude, whose value the worker merely has to augment. It is never the product of his past labour (NOT ANY CIRCUMSTANCES which, *independently of the particular labour process* into which the past labour of his enters, affect or increase its value) which, or the replacement of which, appears as exploitation, but it is always merely the manner and the rate in which his present labour is exploited. As long as the individual capitalist continues to operate on the same scale of production (or on an expanding one), the replacement of capital appears as an operation which does not affect the worker, since, if the conditions of production belonged to the worker, he would likewise have to replace them out of the GROSS PRODUCE in order to continue reproduction on the same scale or on an expanded scale (and the latter too is necessary because of the NATURAL INCREASE OF POPULATION). But this affects the worker in three respects: 1) The perpetuation of the conditions of production as property alien to him, as capital, perpetuates his condition as wage worker and hence his fate of always having to work part of his labour time for a third person for nothing; 2) the extension of these conditions of production, alias accumulation of capital, increases the extent and the size of the classes WHO LIVE UPON HIS SURPLUS LABOUR; it worsens HIS POSITION RELATIVELY BY AUGMENTING THE RELATIVE WEALTH OF the capitalist AND HIS CO-PARTNERS, by further increasing his RELATIVE SURPLUS labour through the division of labour, etc., and reduces that part of the GROSS PRODUCE which is used to pay wages; [3] finally, since the conditions of labour confront the individual worker in an ever

more gigantic form and increasingly as social forces, the chance of his taking possession of them himself as is the case in small-scale industry, disappears.//

[XVIII-1099] Ramsay uses the term *GROSS PROFIT* for what I call simply profit. He divides this *GROSS PROFIT* into *NET PROFIT* (interest) and *PROFIT OF ENTERPRISE* (industrial profit).

Ramsay, like Ricardo, takes issue with Adam Smith on the question of the *fall in the GENERAL RATE OF PROFIT*.

Refuting Smith, he writes:

"COMPETITION of the MASTER-CAPITALISTS can indeed LEVEL the profits rising especially high above the level" //this LEVELLING is by no means a sufficient explanation for the formation of a GENERAL RATE OF PROFIT// "but it is wrong to say THAT THIS ORDINARY LEVEL ITSELF IS LOWERED" ([pp.] 179-80).^a

"Were it possible that the price *of every commodity, both raw and fabricated, should fall in consequence of the competition among the producers, yet this could not in any way affect profit. Each master-capitalist would sell his produce for less money, but,* on the other hand, *every article of his expenses, whether belonging to fixed capital or to circulating, would cost him a proportionally smaller sum" ([pp.] 180-81).

Ditto against Malthus:

*"The idea of profits being paid by the consumers, is, assuredly, very absurd. Who are the consumers? They must be either landlords, capitalists, masters, labourers, or else people who receive a salary, etc." ([p.] 183).

"The *only competition* which can *affect the general rate of gross profits*, is that between master-capitalists and labourers" * ([p.] 206).

The last sentence expresses the true gist of Ricardo's proposition. The rate of profit can fall independently of the COMPETITION BETWEEN CAPITAL and LABOUR, but *this* is the *only kind of COMPETITION* which can bring about its decrease. Ramsay himself, however, does *not* advance *any* reasons why the general rate of profit has a tendency to fall. The only thing he says—and which is correct—is that the *rate of interest* can fall quite independently of the RATE OF GROSS PROFITS in a given country, namely:

"But were we even to suppose, that CAPITAL WAS NEVER BORROWED WITH ANY VIEW BUT TO PRODUCTIVE EMPLOYMENT, it is possible that interest might vary without ANY CHANGE IN THE RATE OF GROSS PROFITS. FOR, as a NATION ADVANCES IN THE CAREER OF WEALTH, A CLASS OF MEN SPRINGS UP AND INCREASES more and more, who by the labours" //EXPLOITATION, ROBBERY// "of their ANCESTORS find themselves in the possession of FUNDS sufficiently ample to afford a handsome maintenance from the interest alone. Very many also who during youth and middle age were actively engaged in business, retire in their latter days to live quietly on the interest of the sums they have themselves accumulated. These two classes have a tendency to INCREASE with the increasing riches of the country, FOR THOSE WHO BEGIN WITH A

^a This is not a quotation but Marx's rendering of the ideas developed by Ramsay.—Ed.

TOLERABLE STOCK ARE LIKELY TO MAKE AN INDEPENDENCE SOONER THAN THEY WHO COMMENCE WITH LITTLE. Therefore, in old and rich countries, the AMOUNT OF NATIONAL CAPITAL belonging to those who are unwilling to take the trouble of employing it themselves, BEARS A LARGER PROPORTION TO THE WHOLE PRODUCTIVE STOCK OF THE SOCIETY, than in NEWLY SETTLED AND POOR COUNTRIES. How numerous [is] the CLASS OF RENTIERS IN ENGLAND! AS THE CLASS OF RENTIERS INCREASES, SO ALSO DOES THAT OF LENDERS OF CAPITAL, FOR THEY ARE ONE AND THE SAME. For this reason alone, interest must have had a tendency to fall in old countries" ([p.] 201 sqq.).

Ramsay says about the *RATE OF NET PROFIT* (interest) that it

"depends partly upon the RATE OF GROSS PROFITS, partly on the proportion in which these are separated into interest and industrial profit. This proportion depends upon the COMPETITION between the LENDERS and BORROWERS OF CAPITAL. This COMPETITION is influenced, though by no means ENTIRELY regulated, BY THE RATE OF GROSS PROFIT EXPECTED TO BE REALISED. And the COMPETITION is not exclusively regulated by this CAUSE because on the one hand many borrow without ANY VIEW TO PRODUCTIVE EMPLOYMENT, and, on the other, because the *PROPORTION of the *whole national capital to be lent, varies with the riches of the country independent of any change in gross profits*" ([pp.] 206-07). "The *profits of enterprise depend upon the net profits of capital, not the latter upon the former*"* ([p.] 214).

[XVIII-1100] Apart from the circumstance mentioned earlier, Ramsay says—rightly:

"Interest is only a measure OF INDUSTRIAL PROFITS where the level of civilisation is such that the WANT OF CERTAINTY OF REPAYMENT is not a factor which enters into the calculation...^a In England, for instance, at the present day, WE CANNOT consider COMPENSATION FOR RISK AS AT ALL ENTERING INTO THE INTEREST RECEIVED FROM FUNDS [lent] ON WHAT WOULD BE CALLED GOOD SECURITY" ([p.] 199, note).

Speaking of the *INDUSTRIAL capitalist*, whom he calls the MASTER-CAPITALIST, Ramsay remarks:

"The industrial capitalist is the general DISTRIBUTOR of wealth; he pays to the LABOURERS, the WAGES, to the capitalist, the interest, to the proprietor, the rent. On the one hand are MASTERS, on the other, LABOURERS, CAPITALISTS and *landlords. The interests of these two grand classes are diametrically opposed to each other. It is the master who hires labour, capital, and land, and of course tries to get the use of them on as low terms as possible; while the owners of these sources of wealth do their best to let them as high as they can*" ([pp.] 218-19).

INDUSTRIAL PROFIT. (LABOUR OF SUPERINTENDENCE.)

What Ramsay writes about *INDUSTRIAL profit* (and especially, about the LABOUR OF SUPERINTENDENCE) is on the whole the most reasonable part of his book, although part of his DEMONSTRATION is borrowed from *Storch*.^b

The exploitation of labour costs labour. In so far as the labour performed by the *INDUSTRIAL capitalist* is rendered necessary only because of the contradiction between capital and labour, it enters

^a This sentence is a paraphrase of Ramsay by Marx.—*Ed.*

^b See H. Storch, *Cours d'économie politique...*, Vol. I, Paris, 1823, Ch. 12-13.—*Ed.*

into the cost of his OVERLOOKERS (the industrial non-commissioned officers) and is already included in the category of WAGES in the same way as costs caused by the slave overlooker and his whip are included in the production costs of the slave-owner. These costs, like the greater part of the trading expenses, belong to the *faux frais* of capitalist production. As far as the general *rate of profit* is concerned, the labour of the capitalists arising from their competition with one another and their attempts to ruin one another counts just as little as the greater or lesser skill of one industrial capitalist compared to another in extracting the largest amount of SURPLUS LABOUR from his workers for the smallest expenditure and making the best use of this extracted SURPLUS LABOUR in the process of circulation. These matters should be dealt with in the analysis of the competition of capitals.⁶⁷ Such an analysis deals in general with the struggle of the capitalists and their effort to acquire THE GREATEST POSSIBLE AMOUNT OF SURPLUS LABOUR and it is concerned only with the division of the surplus labour amongst the different individual capitalists, and not with the origin of surplus labour or its GENERAL EXTENT.

All that remains for the LABOUR OF SUPERINTENDENCE is the general function of organising the division of labour and the cooperation of certain individuals. This labour is fully taken into account in the WAGES of the GENERAL MANAGER in the larger capitalist enterprises. It has already been deducted from the general rate of profit. The best practical proof of this is provided by the cooperative factories set up by the English workers,¹⁶⁸ for these, despite the higher rate of interest they have to pay, yield profits higher than AVERAGE, although the WAGES of the GENERAL MANAGER, which are naturally determined by the market price for this kind of labour, are deducted. The industrial capitalists who are their own GENERAL MANAGERS save one ITEM of the production costs, pay WAGES to themselves, and consequently receive a rate of profit above the average. If this assertion of the apologists were taken literally tomorrow, and the profit of the INDUSTRIAL capitalist limited to the WAGES OF MANAGEMENT AND DIRECTION, then capitalist production, the appropriation of the SURPLUS labour of others and its transformation into capital would come to an end the day after tomorrow.

However, if we consider this [payment of the] LABOUR OF SUPERINTENDENCE as WAGES concealed in the GENERAL RATE OF PROFIT, then the law established by Ramsay^a and others applies, namely, that

^a See G. Ramsay, *An Essay on the Distribution of Wealth*, Edinburgh, London, 1836, pp. 227-31.—Ed.

while profit (industrial profit as well as GROSS profit) is proportional to the amount of capital advanced, this portion of the profit stands in *inverse* ratio to the size of the capital, it is infinitesimally small in the case of large capital and enormously large where the capital is small, i.e. where the capitalist production is purely nominal. Whereas the small capitalist, who does almost all the work himself, seems to obtain a very high rate of profit in proportion to his capital, what happens in fact is that, if he does not employ a few workers whose surplus labour he appropriates, he actually makes *no profit at all* and his enterprise is only *nominally* a capitalist one (whether he is engaged in industry or in commerce). What distinguishes him from the wages worker is that, because of his nominal capital, he is indeed the master and owner of his own conditions of labour and consequently has NO MASTER OVER HIM; [XVIII-1101] and hence he appropriates his whole labour time himself instead of it being appropriated by someone else. What appears to be profit here, is merely the excess over ordinary WAGES, an excess which results from the fact that he appropriates his own SURPLUS LABOUR. However, this phenomenon belongs exclusively to those spheres which have not as yet been really conquered by the capitalist mode of production.

"The profits OF ENTERPRISE may be considered as made up of 3 parts: 1) the salary of the MASTER; 2) [an insurance for] his RISK; 3) his SURPLUS GAINS" ([p.] 226).

As regards point 2) it is quite irrelevant here. Corbet^a (and Ramsay himself^b) has stated that the INSURANCE which covers the risk only distributes the LOSSES of the capitalists uniformly or distributes them more generally amongst the whole class. The profits of the INSURANCE COMPANIES—that is, of the capitals which are EMPLOYED IN THE BUSINESS OF INSURANCE, and take over this distribution—must be deducted from these uniformly distributed losses. These COMPANIES receive a part of the surplus value in the same way as MERCANTILE OR MONIED CAPITALISTS do, without participating in its direct production. This is a question of the distribution of the SURPLUS VALUE amongst the different sorts of capitalists and of the deductions which are consequently made from [the surplus value accruing to] the individual capitalists. It has nothing to do either with the nature or with the extent of the SURPLUS. The worker obviously cannot provide any more than his SURPLUS labour. He cannot make an additional payment to the capitalist so that the

^a See this volume, p. 243.—Ed.

^b See G. Ramsay, *An Essay on the Distribution of Wealth*, pp. 222-25.—Ed.

latter may *insure* the fruits of this SURPLUS labour *against* loss. At most one could say that, even APART FROM capitalist production, the producers themselves might have certain expenses, that is, they would have to spend a part of their labour, or of the products of their labour in order to insure their products, their wealth, or the elements of their wealth, against accidents, etc. Instead of each capitalist insuring himself, it is safer as well as cheaper for him if one section of capital is entrusted with this job. INSURANCE is paid out of a portion of SURPLUS VALUE, its protection and distribution between the capitalists has nothing to do with its origin and extent.

What is left is 1) the SALARY and 2) the SURPLUS GAINS, as Ramsay calls that part of SURPLUS VALUE which falls to the industrial capitalist as opposed to the interest-grabber and which, consequently, is determined absolutely by the ratio of interest to industrial profit;[i.e. the ratio between] the two parts into which the SURPLUS VALUE accruing to capital (in contrast to landed property) is divided.

As far as 1), the SALARY, is concerned, it is *d'abord* self-evident that in capitalist production, the function of capital as lord over labour falls to the capitalist, or a clerk or a representative paid by him. Even this function would disappear together with the capitalist production, in so far as it does not arise from the nature of cooperative labour but from the domination of the conditions of labour over labour itself. Ramsay himself however sweeps away this element or reduces it to such an extent that it is not WORTH SPEAKING OF.

"The SALARY [of the employer], like the labour [of superintendence], remains roughly the same, be the CONCERN large or small" ([pp.] 227, 229). "A worker will never be able to say that he can do the same amount of work as 2, 3 or more of his workmates. But one industrial CAPITALIST or FARMER can take the place of 10 or 15" ([p.] 255).

The 3rd part, the SURPLUS GAINS, includes [compensation for] risks—which are only *possible* risks, nothing but the possibility of losing the GAINS and the capital—it in fact however takes the form of INSURANCE and therefore of a share which certain capitals in a particular branch receive in the total SURPLUS VALUE.

"These SURPLUS GAINS," Ramsay writes, "do truly represent the revenue derived from *the power of commanding the use of capital*" * //in other words from the *power of commanding other people's labour// "whether belonging to the person himself or borrowed from others..." * the NET PROFITS" (interest) * "vary exactly as the amount of capital; on the contrary, the larger the capital, the larger the proportion of the surplus gains to the stock employed" * ([p.] 230).

In other words, this means nothing more than that the SALARIES OF MASTERS stand in inverse ratio to the size of the capital. The larger

the scale on which the capital operates, the more *capitalist* the mode of production, the more negligible is the element of industrial PROFIT which is reducible to SALARY, and the more clearly appears the real character of industrial profit, namely, that it is a part of the SURPLUS GAINS, i.e. of SURPLUS VALUE, i.e. of unpaid SURPLUS LABOUR.

The whole contradiction between INDUSTRIAL PROFIT and INTEREST only has meaning as a contradiction between the RENTIER and the INDUSTRIAL CAPITALIST, but it has not the slightest bearing on the relationship of the worker to capital, the nature of capital, or the origin of the profit capital yields, etc.

With regard to *rent not derived from corn*, Ramsay says:

“In this manner the rent paid for one species of produce becomes the cause of the high value of others” ([p.] 279).

“REVENUE,” says Ramsay in the final chapter, * “differs from the annual gross produce, simply by the absence of all those objects which go to keep up *fixed capital*” * (by which he means *constant capital*, RAW MATERIALS in all stages of production, *matières instrumentales* and machinery, etc.) ([p.] 471).

[XVIII-1102] Ramsay has already said^a and repeats in the final chapter that

“CIRCULATING CAPITAL” (that is, his term for capital laid out in wages) is superfluous, it is * “neither an *immediate* agent in production, nor even *essential* to it at all” * ([p.] 468).

But he does not draw the obvious conclusion that by denying that wage labour and capital laid out in wages are essential, the *necessity* for capitalist production in general is denied and the conditions of labour consequently cease to confront the workers as “capital” or, to use Ramsay’s term, as “fixed capital”. One part of the conditions of labour appears as *fixed capital* only because the other part appears as *CIRCULATING capital*. But once capitalist production is presupposed as a fact, Ramsay declares that *WAGES* and *GROSS PROFITS OF CAPITAL* (INDUSTRIAL PROFIT OR, as he calls it, PROFIT OF ENTERPRISE, INCLUDED) are necessary forms of revenue ([pp.] 478, 475).

These are naturally the two forms of revenue which, in their simplicity and generality, indeed epitomise the essence of the capitalist production and of the two classes on which it is based. On the other hand, Ramsay declares that *RENT*, in other words landed property, is a superfluous form of capitalist production ([p.] 472), but forgets that it is a necessary product of this mode of production. The same applies to his statement that the “NET PROFIT OF CAPITAL”, that is, interest, is not a necessary form.

^a See this volume, pp. 256-57.— *Ed.*

"It would only be necessary for the rentiers to become industrial capitalists. As regards NATIONAL WEALTH this makes no difference... The NET^a PROFIT need certainly not be so high AS TO AFFORD SEPARATE INCOMES TO THE OWNER AND THE EMPLOYER" ([pp.] 476-77).

Here he again forgets what he has said himself, namely that, as a necessary consequence of the development of capital, a constantly growing class of rentiers comes into being.^b

"GROSS PROFITS OF CAPITAL AND ENTERPRISE [are] ... essential in order that production should go on" ([p.] 475).

Naturally. Without profit, no capital and without capital, no capitalist production.

Thus, the conclusion at which Ramsay arrives is, on the one hand, that the capitalist mode of production based on wage labour is not really a necessary, i.e. not an absolute form of social production (which Ramsay himself expresses only in a rather limited form by stating that "CIRCULATING CAPITAL" and "WAGES" [would be] superfluous if the mass of the people were not so poor that they had to receive their share of the product IN ADVANCE, before it was completed); on the other hand, [he concludes] that interest (in contrast to industrial profit) and rent (that is, the form of landed property created by capitalist production itself) are SUPERFETATIONS which are not essential to capitalist production and of which it can rid itself. If this bourgeois ideal were actually realisable, the only result would be that the whole of the SURPLUS VALUE would go to the industrial capitalist directly, and society would be reduced (economically) to the simple contradiction between capital and wage labour, a simplification which would indeed accelerate the dissolution of this mode of production.

//In *The Morning Star* (December 1, 1862), a manufacturer moans:

"Deduct from the gross produce the wages of labour, the rent of land, the interest on capital, the cost of raw material, and the gains of the agent, merchant, or dealer, and what remained was the profit of the manufacturer, the Lancashire resident, the occupier, on whom the burden of maintaining the workmen for so many partakers in the distribution of the gross produce is thrown."*^c

//If one disregards the value and considers the GROSS PRODUCE *in natura*, it is clear that after the replacement of the constant capital

^a Ramsay has "gross".—*Ed.*

^b See this volume, pp. 278-79.—*Ed.*

^c "Lancashire Profits and Lancashire Rates", *The Morning Star*, No. 2101, December 1, 1862, p. 5.—*Ed.*

and the capital laid out in wages, that portion of the product which remains constitutes the SURPLUS VALUE. From this however has to be deducted a portion for rent and the GAINS of the AGENTS, MERCHANTS OR DEALERS, all of whom, WHETHER THEY USE CAPITAL OF THEIR OWN OR NOT, also share in that part of the GROSS PRODUCE which constitutes SURPLUS VALUE. All these therefore are DEDUCTIONS for the MANUFACTURER. His profit itself is subdivided into industrial profit and interest—he has borrowed capital.//

//With regard to differential rent: The work of the labourer working on more fertile soil is more productive than that of a man working on less fertile soil. If, therefore, he were to be paid *in natura*, he would receive a smaller share of the GROSS PRODUCE than the labourer working on less fertile soil. Or, what amounts to the same thing, his relative surplus labour would be greater than that of the other labourer, although he worked the same number of hours per day. But the value of the wage of the one is equal to that of the other. Hence the profit of his EMPLOYER is no greater [than that of the other employer]. The surplus value contained in the additional amount of his product, the greater relative productivity of his labour, or the differential surplus labour performed by him, is POCKETED BY THE LANDLORD.//

n) CHERBULIEZ, *RICHESSSE OU PAUVRETÉ*, PARIS, 1841
(REPRINT OF THE GENEVA EDITION)
[PUBLISHED UNDER THE TITLE *RICHE OU PAUVRE*]

(It is questionable whether we should specially include this fellow in this group [of economists] since most of what he writes is based on Sismondi, or whether we should on occasion insert his pertinent remarks in the form of quotations.¹⁶⁹)

[XVIII-1103] "Capital," says Cherbuliez, consists of "the raw materials, the tools, the means of subsistence [*approvisionnement*]" (p. 16). "There is no difference between a capital and any other part of wealth. A thing only becomes capital by the use that is made of it, that is to say, when it is employed in a *productive operation*, as raw material, as instrument, or as means of subsistence" ([p.] 18).^a

This is the standard way of reducing capital to the material elements in which it presents itself in the labour process, i.e. means of labour and means of subsistence. The latter category, moreover, is not accurate since, though means of subsistence are indeed a condition for the producer, a prerequisite enabling him to exist during production, they themselves do not enter into the

^a Marx quotes in French.—Ed.

labour process, into which nothing enters but the object of labour, the means of labour and labour itself. Thus the objective factors of the labour process—which are common to all forms of production—are here called *capital*, although the *approvisionnement* (in which wages are already included) tacitly implies the *capitalist* form of these conditions of labour.

Cherbuliez, like Ramsay, [assumes] that the *approvisionnement*—which Ramsay calls CIRCULATING CAPITAL—diminishes (relatively, at any rate, to the total amount of capital and absolutely in so far as machinery continually throws workers out of employment). But both he and Ramsay appear to think that there is an inevitable reduction in the amount of means of subsistence, of NECESSARIES, which can be employed as productive capital. But this is by no means the case. In this context, people always confuse that part of the GROSS PRODUCT which replaces capital and is employed as capital, with that part which represents the SURPLUS PRODUCE. The *approvisionnement* decreases because a large portion of capital, that is, the part of the GROSS PRODUCE employed as capital, is reproduced as constant capital instead of as variable capital. A large portion of the SURPLUS PRODUCE, consisting of means of subsistence, is consumed by unproductive workers or idlers or exchanged for LUXURIES. *Voilà tout.*^a

True, the fact that a constantly smaller part of the total capital is converted into variable capital can also be expressed in other ways. The part of capital which consists of variable capital—that part of the total product which the worker himself appropriates, produces for himself. Therefore, the smaller this part is the smaller accordingly is the portion of the total number of workers which is required to reproduce it (just as in the case of the individual worker, who works correspondingly less labour time for himself). The total product, like the total labour, of the workers falls into 2 parts. One part the workers produce for themselves; the other part they produce for the capitalist. Just as the [labour] time of the individual worker can be divided into 2 parts, so can the [labour] time of the whole working class. If the surplus labour = $\frac{1}{2}$ day, it is the same as if half the working class produces means of subsistence for the working class and the other half produces raw materials, machinery and finished products for the capitalists, partly as producers and partly as consumers.

It is ridiculous that Cherbuliez and Ramsay believe that the part of the GROSS PRODUCE which can be consumed by the workers and can

^a That's all.—Ed.

enter into their consumption *in natura* has been reduced of necessity OR reduced AT ALL. Only that part has been reduced which is consumed in this form and therefore as *variable capital*. On the other hand, a larger portion is eaten up by servants, soldiers, etc., or exported and exchanged for more sumptuous means of subsistence.

The only important thing in both Ramsay and Cherbuliez is that they actually counterpose *variable* and *constant capital* and do not confine themselves to the distinction between fixed and circulating capital derived from circulation. For Cherbuliez counterposes that part of capital which goes on *approvisionnement* to that which consists of *matières brutes*, *matières instrumentales*^a and means of labour, i.e. INSTRUMENTS, MACHINES. Although two constituent elements of constant capital—*matières brutes* and *instrumentales*—belong to circulating capital as far as the mode of circulation is concerned.

The important thing in variations in the constituent elements of capital is not that relatively more workers are occupied in the production of raw materials and machinery than in that of direct means of subsistence—this concerns only the division of labour—but the proportion of the product which has to be used to replace past labour (i.e. to replace constant capital) to that which has to be used to pay living labour. The larger the scale of capitalist production, and hence the greater the accumulation of capital—the greater is the share in the value of the product falling to the machinery and raw material into which the CAPITAL EMPLOYED in the production of machinery and raw material can be resolved. A correspondingly larger portion of the product must therefore be returned to production either *in natura* or by the producers of constant capital exchanging some of their products amongst themselves. The part of the product which belongs to production becomes larger, and the part which represents living, newly added labour becomes relatively smaller. Of course, this part grows in terms of commodities—use values, since the development described is synonymous with increased productivity of labour. But the portion of this part which the worker receives falls relatively all the more. And the same process gives rise to a continuous relative REDUNDANCY of the WORKING POPULATION.

[XVIII-1104] //It is an incontrovertible FACT that, as capitalist production develops, the portion of capital invested in machinery and raw materials grows, and the portion laid out in wages declines. This is the only question with which both Ramsay and

^a Raw materials, instrumental materials.—Ed.

Cherbuliez are concerned. For us, however, the main thing is: does this FACT explain the decline in the rate of profit? (A decline, incidentally, which is far smaller than it is said to be.) Here it is not simply a question of the quantitative ratio but of the *value ratio*.

If 1 worker can spin as much cotton as 100 [workers spun previously], then the [supply of] raw material must be increased a hundredfold, and this is moreover brought about only by the spinning machine which enables one worker to control 100 spindles. But if simultaneously one worker produces as much cotton as 100 workers did previously and 1 worker produces a spinning machine whereas previously he produced only a spindle, then the ratio of value remains the same, that is, the labour expended in the spinning, [in the production of] the cotton and the spinning machine remains the same as that expended previously in spinning, the cotton and the spindle.

As far as the *machinery* is concerned, its cost is not as great as that of the labour it displaces, although the spinning machine is much more expensive than the spindle. The individual capitalist who owns a spinning machine must possess a greater amount of capital than the individual spinner who buys a spinning wheel. But the spinning machine is cheaper than the spinning wheel in relation to the number of workers it employs. Otherwise it would not have displaced the spinning wheel. The place of the spinner is taken by a capitalist. But the capital which the former laid out on the spinning wheel was *larger* relative to the size of the product, than that which the capitalist lays out on the spinning machine.//^a

The increasing productivity of labour (in SO FAR AS [it is] CONNECTED WITH MACHINERY) is identical with the decreasing number of workers *relatively to the number and extent of the machinery employed. Instead of a simple and cheap instrument a collection of those instruments* (albeit MODIFIED) IS put in place, and *besides that collection the whole part of the machinery consisting of the moving and conducting parts; besides the materials used (like coal, etc.) to produce the moving agent (as steam).* Finally, the buildings. If one worker is in charge of 1,800 spindles instead of driving a spinning wheel, it would be quite ridiculous to ask why these 1,800 spindles are not as cheap as the single spinning wheel. The productivity in this case is brought about precisely by the amount of capital employed as machinery. The ratio of the wear and tear

^a The passage within double oblique lines was crossed out by Marx.—Ed.

of the machinery affects only the commodity; the worker confronts the total amount of machinery and similarly the value of the capital laid out in labour confronts the value of the capital laid out in machinery.

There can be no doubt that machinery becomes cheaper, and this for two reasons: [1] The application of machinery to the production of raw materials from which the machinery is made. [2] The application of machinery in the transformation of these materials into machinery. In saying this, we already say two things. *Firstly*, that in both these branches, compared with the instruments required in the manufacturing industry, the value of the capital laid out in machinery also grows as compared with that laid out in wages. *Secondly*, what becomes cheaper is the individual machine and its component parts, but a system of machinery develops; the tool is not simply replaced by a single machine, but by a whole system, and the tools which perhaps played the major part previously, the needle for example (in the case of a stocking loom or a similar machine), are now assembled in thousands. Each individual machine confronting the worker is in itself a colossal assembly of instruments which he formerly used singly, e.g. 1,800 spindles instead of one. But in addition, the machine contains elements which the old instrument did not have, etc. Despite the cheapening of individual elements, the price of the whole aggregate increases enormously and the [increase in] productivity consists in the continuous expansion of the machinery. Further, one factor in the cheapening of machinery apart from that of its elements, is the cheapening of the source of the motive power (the steam-boiler, for example) and of the transmission mechanism. ECONOMY OF POWER. But this results precisely from the fact that to an increasing extent the same motor can drive a larger system of machines. The motor becomes relatively cheaper (or its cost does not grow in the same ratio as the increase in the size of the system in which it is employed; the motor becomes more expensive as its power grows, but not in the same proportion); even when its cost increases absolutely, it declines relatively. This is therefore a new motive, quite apart from the price of the individual machine, for increasing the capital that is laid out in machinery and confronts labour. One element—the increasing speed of machinery—increases productive power enormously but it does not affect the value of the machinery itself in any way.

It is therefore self-evident or a tautological proposition that the increasing productivity of labour caused by machinery corresponds to increased value of the machinery relative to the amount of

labour employed (consequently to the value of labour, the variable capital).

[XVIII-1105] All circumstances which result in the use of machinery leading to a reduction in the price of commodities can be attributed, firstly, to a decrease in the amount of labour embodied in each individual commodity, secondly, however, to a decrease in the wear and tear of the machinery whose value enters into the individual commodity. The less rapid the wear and tear of the machinery, the less labour is required for its reproduction. This therefore increases the amount and the value of the capital existing as machinery as compared with that existing in labour.

Only the question of raw material therefore remains to be dealt with. It is obvious that the quantity of raw material must increase proportionally with the productivity of labour; that is, the amount of raw material must be proportionate to that of labour. This relationship is closer than it appears. Let us assume, for example, that 10,000 lbs of cotton are consumed weekly. Calculating 50 weeks to the year, this would amount to $10,000 \times 50$, that is, 500,000 lbs. Let us also assume that the amount paid out in wages = £5,000 over the year. And if a pound of cotton is assumed to cost 6d. this comes to 250,000s. = £12,500. Let us assume that the capital turns over 5 times during the year. This means that in the course of a fifth of a year, 100,000 lbs of cotton is used = £2,500. And £1,000 goes on wages in the same fifth of a year. This is more than $\frac{1}{3}$ of the value of the capital laid out on the cotton.¹⁷⁰ This does not alter the ratio. If the value of the cotton = [£]10,000 every $\frac{1}{5}$ of a year and that of the labour = 1,000, then it will be $\frac{1}{10}$. (If one considers the product of the whole year, 50,000 on one side and 5,000 on the other—it is also $\frac{1}{10}$.)

//The value of a commodity, *quoad* machinery,^a is determined by the wear and tear of the machinery, that is, solely by the value of the machinery in so far as it enters into the valorisation process, in other words, in so far as it is used up in the labour process. Profit, on the contrary, is determined (leaving raw materials out of account) by the value of the whole of the machinery which enters into the labour process irrespective of the degree to which it is used up. Profit must therefore decline as the total amount of [living] labour employed declines compared with the part of capital laid out in machinery. It does not decline in the same proportion because surplus labour increases.//

One may ask with regard to raw material: If, for example,

^a As far as machinery is concerned.—Ed.

productive power in spinning increases tenfold, that is, 1 worker spins as much as ten did previously, why should not 1 NIGGER^a produce as much cotton as 10 did previously, that is, why should the *value ratio* not remain the same? The spinner uses 10 times as much cotton in the same time, but the NIGGER produces 10 times as much cotton in the same time. The 10 times larger amount of cotton therefore costs no more than a tenth of this amount cost previously. This means that despite the increase in the amount of the raw material, its value ratio to variable capital remains the same. In fact it was only the large fall in the price of cotton which enabled the cotton industry to develop in the way it did. The dearer the material (gold and silver, for example) the less are machinery and the division of labour applied in transforming it into articles of luxury. This is because too much capital has been advanced for the raw materials and the demand for these products is limited owing to the expensive raw materials.

To this it is quite easy to answer that some kinds of raw materials, such as wool, silk, leather, are produced by animal *organic* processes, while *cotton, linen*, etc., are produced by vegetable *organic* processes; capitalist production has not yet succeeded, and never will succeed in mastering these processes in the same way as it has mastered purely mechanical or inorganic chemical processes. Raw materials such as skins, etc., and other animal products become dearer partly because the insipid law of rent increases the value of these products as civilisation advances. As far as coal and metal (wood) are concerned, they become much cheaper with the advance of production; this will however become more difficult as mines are exhausted, etc.

//While it can be said with regard to corn rent and mine rent that they do not increase the value of the product (only its market price) but are rather the expression of the value of the product (the excess of its value *over* the production price), there is, on the other hand, no doubt that animal rent, house rent, etc., are not consequences but *causes* of the increasing values of these things.

The cheapening of raw materials, and of *matières instrumentales*, etc., CHECKS BUT DOES NOT CANCEL THE GROWING VALUE OF THIS PART OF CAPITAL. It checks it TO THE DEGREE TO WHICH IT brings about THE FALL IN PROFIT.//
//This rubbish is herewith disposed of.// (If tomorrow the price of cotton were to drop by 90 per cent, the spinning industry would develop even more rapidly the day after tomorrow, etc.)

^a See p. XI of the Preface.—Ed.

//In considering profit, surplus value is assumed as given. And only the variations in constant capital and their influence on the rate of profit are considered. There is only one way in which surplus value directly affects constant capital, namely through *absolute surplus labour*, lengthening of the working day, as a result of which the relative value of constant capital is reduced. Relative SURPLUS LABOUR—where the working day remains unaltered (apart from the greater intensification of labour)—increases the value ratio of profit to total capital by increasing the SURPLUS itself. Absolute surplus labour time reduces the cost of constant capital RELATIVELY.//

[XVIII-1106] Let us return to Cherbuliez.

The formulas he uses for the rate of profit are either mathematical expressions for profit as it is COMMONLY understood, without involving any kind of law, or they are quite wrong, although he has an *inkling* of the matter, approaches close to it.

“Commercial profit¹⁷¹ is determined by the *value of the products* compared with the *different elements* of productive capital.”

//In point of fact, profit is the relationship of the SURPLUS VALUE of the product to the value of the total capital advanced regardless of the differences in its elements. But the SURPLUS VALUE is itself determined by the size of the variable capital and the rate of its valorisation, and the *ratio* of this SURPLUS VALUE to the total capital is again determined by the ratio of the variable to the constant capital and also by changes in the value of constant capital.//

“Evidently the two chief elements in this determination are the price of the raw materials and amount of *approvisionnement* required to work them up. The economic progress of society affects these two elements in an *opposite* way and it tends to make raw materials dearer by increasing the value of all the products of the extractive industries,¹⁷² which are carried out on land that is privately owned and limited in extent” (p. 70).^a On the other hand, the *approvisionnement* decreases (relatively), a matter to which we shall return presently.

“The total amount of products, less the total amount of capital expended in producing them, provides us with the total amount of profit gained during a definite period of time. The *growth* in the total amount of products is *proportionate to the capital advanced* and not to the capital consumed. The *rate of profit*, or the ratio of profit to capital, is therefore the result of the combination of two other ratios, namely, *the ratio between the capital advanced and that consumed*, and *the ratio between the capital consumed and the product*” (l.c., [p.] 70).

Cherbuliez first states correctly that profit *is determined* by the *value* of the product in relation to the “different elements” of productive capital. Then he flies off suddenly to the product itself,

^a Marx quotes partly in German and partly in French.—Ed.

to the total amount of products. But the amount of products may increase without its value increasing. Secondly, a comparison between the amount of the product and the quantity of products of which the capital—used up and not used up—consisted, can at best only be made in the way Ramsay does, by comparing the aggregate natural product with the ingredients expended *in natura*.^a But as regards capital, the form taken by the product is different from its ingredients in every particular sphere of production (even in those branches of industry in which, as in agriculture, etc., one part of the product is used *in natura* as a production element of the product). Why does Cherbuliez stray on to this *faux fuyant*?^b Because, despite his vague idea that the organic composition of capital is decisive for the rate of profit, he in no way uses the contradiction between variable capital and the other part of capital in order to explain SURPLUS VALUE—which, like value itself, he does not explain at all. He has not shown how SURPLUS VALUE arises and therefore has recourse to SURPLUS PRODUCE, i.e. to use value.

Although all SURPLUS VALUE takes the form of SURPLUS PRODUCE, SURPLUS PRODUCE as such does not represent SURPLUS VALUE. //A product may contain no SURPLUS VALUE, as, for example, in the case of a peasant who owns his own implements (as well as his own land) and only works exactly the same amount of time as any wage worker does to reproduce his own wages, say 6 hours. In a good year, he might produce twice as much [as usual]. But the value would remain the same. THERE WOULD BE NO SURPLUS VALUE, although [there would be] SURPLUS PRODUCE.//

In itself it was already a mistake on the part of Cherbuliez to represent variable capital in the “passive” and purely material form of *approvisionnement*, that is, as use value, a form which it obtains in the hands of the workers. If, on the other hand, he had considered it in the form in which it actually appears, namely, as money (as the form in which exchange value, i.e. a certain amount of social labour time as such, exists), then for the *capitalist* it would resolve in the labour which he exchanges for it (and, as a result of this exchange of objectified labour for living labour, the variable capital would be set in motion and would grow); variable capital in the shape of labour—but not if it is regarded as *approvisionnement*—becomes an element of productive capital. *Approvisionnement*, on the other hand, is the use value, the material existence of

^a See this volume, p. 264.—*Ed.*

^b False path.—*Ed.*

the variable capital when it becomes the revenue of the worker. Variable capital regarded as *approvisionnement* is, therefore, just as “*passive*” an element as both the other parts of capital which Cherbuliez describes as “*passive*”.

The same distortion of views prevents him from elaborating the rate of profit out of the *relationship* of this active element to the passive element, and from showing that it declines as society advances. Cherbuliez in fact reaches no other conclusion but that the *approvisionnement* [XVIII-1107] declines as a consequence of the development of the productive power while the working population grows, and so, as a result of the REDUNDANT POPULATION, wages are consequently pushed down below their value. None of his explanations are based on the exchange of [equal] values—or the payment of labour capacity at its value—and profit thus *actually* appears to be a *deduction from wages* (although he doesn't say so). This deduction may indeed occasionally constitute a part of real profits, but it can never serve as the foundation for the elaboration of the category of profit.

Let us *d'abord* reduce the first proposition to its correct formulation.

“The *value* of the total amount of products, less the *value* of the total amount of capital expended in producing them, provides us with the total amount of profit gained during a definite period of time.”¹⁷³

This is the primary (usual) form in which profit appears and it is likewise the form in which it appears in the consciousness of capitalists. Alias [profit is] the excess of the value of the product gained during a definite period of time over the value of the capital expended. Or the excess of the value of the product over the cost price of the product. Even “the definite period of time” in Cherbuliez's statement appears like a bolt from the blue, since he has not dealt with the circulation process of capital. The first proposition, therefore, is nothing but the usual DEFINITION OF PROFIT, of the immediate form in which it appears.

The second proposition:

“The *growth in the total amount of products* is proportionate to the capital employed and not to the capital used up.”

Paraphrased again, it would read thus:

“The *growth in the value* of the total amount of products is proportionate to the capital advanced” (WHETHER CONSUMED OR NOT).

The only purpose of this is the *surreptitious introduction* of the completely unproven and, in the way it is formulated, quite false proposition (for it already presupposes equalisation to the general

rate of profit) that the amount of profit depends on the amount of capital employed. But an apparent causal nexus is to be introduced because “the *growth in the total amount of products* is proportionate to the capital *employed* and not to the capital used up”.

Let us take this sentence in both its formulations—that in which it is written and that in which it ought to have been written. In this context—and in accordance with the conclusion which it is intended to serve as *medius terminus*^a—it should be written as follows:

“The *growth in the value* of the total amount of products is proportionate to the capital employed and not to the capital used up.”

Here, evidently, SURPLUS value is to be evolved on the basis of the fact that the excess of the capital employed over that used up creates the *excess value of the products*. But the capital which is not used up (machinery, etc.) retains its value (for the fact that it is not used up means precisely that its value has not been used up); it retains the same value after the conclusion of the production process as it had before this process started. If any *change in value* has taken place, it can only have happened in that part of the capital which has been used up, and which therefore entered into the valorisation process. In point of fact it is also wrong to say that, for example, a capital of which $\frac{1}{3}$ is not used up and $\frac{2}{3}$ are used up in production, would inevitably yield a higher profit than one in which $\frac{2}{3}$ are not used up and $\frac{1}{3}$ is used up, provided the *rate of the exploitation of labour is the same* (and disregarding the equalisation of the rate of profit). For obviously, the second capital contains more machinery, etc., and other elements of constant capital, while the first capital contains less of these elements and sets more living labour in motion, and therefore produces more surplus labour as well.

If we take the proposition as formulated by Cherbuliez himself, then it must be said *d’abord* that it is of no use to him, because the amount of products or the amount of use values as such by no means determines either the value or the surplus value or the profit. But what is behind all this? A part of constant capital consisting of machinery, etc., enters into the labour process without entering into the valorisation process, and thereby helps to increase the amount of products without adding anything to their value. (For in so far as its wear and tear adds value to the product, it belongs to the capital *used up* and not to the capital *employed* as

^a Intermediate clause. Here, a second proposition.—*Ed.*

opposed to that used up.) But, by itself, this unconsumed part of constant capital does not bring about a *growth in the amount of products*. It helps to produce a greater output in a given labour time. Therefore, if only the same amount of labour time were expended as is contained in the *approvisionnement*, the same amount of products would be produced. The excess of products is therefore due to a CHANGE which takes place in this part of the *capital used up* and not to the excess of the capital employed over that used up (assuming that it is not a matter of branches of industry in which—as in agriculture—the *amount* of products is, or can be, independent of the amount of capital laid out, [because] the productivity of labour is, in part, dependent on uncontrollable natural conditions).

If however he considers constant capital—used up or otherwise—as independent of the labour time, independent of the CHANGE in the variable capital which takes place in the valorisation process, then he might just as well say:

“The growth in the total amount [XVIII-1108] of products” (at least in the manufacturing industry) “is proportionate to the growth of the part of capital consisting of raw materials which is used up.”

For the increase of products is physically identical with the growth of this part of capital. In agriculture on the other hand (and likewise in the extractive industries), where only a small proportion of the capital laid out is not used up (i.e. constant capital) and a relatively large proportion of capital is used up (as wages for example), the amount of products, provided the land is fairly fertile, can be much larger than in the advanced countries where the ratio of capital laid out to capital used up is infinitely greater. The second proposition thus amounts to an attempt to bring in surreptitiously SURPLUS VALUE (the indispensable basis of profit).

“The *rate of profit*, or the *ratio* of the profit to capital, is therefore the result of the combination of two other ratios, namely, the *ratio between the capital advanced and that used up*, and the *ratio between the capital used up and the product*” (p. 70).

Previously *profit* ought to have been explained. But nothing emerged except a DEFINITION of it which merely states the form in which it appears, i.e. the fact that profit=the excess of the value of the total product over the cost price of the product or over the value of the capital used up, which is the VULGAR DEFINITION OF PROFIT.

Now the *rate of profit* ought to be explained. But once again nothing emerges except the VULGAR DEFINITION. The rate of profit=the ratio of profit to the total capital, or, what amounts to the same thing, it=the ratio of the excess of the value of the

product over its cost price to the total capital advanced for production. The distorted conception and bungling application of the approximately correct distinction between the elements of capital, and the vague idea that profit and rate of profit are directly connected with the ratio of these elements to one another, only lead to a repetition of the generally known phrases in a rather doctrinaire fashion, in fact merely to a statement that profit and rate of profit exist, without, however, anything being said about their nature. The matter is not improved by the fact that Cherbuliez expresses his doctrinaire formulæ in algebraic language:

“Let P be the aggregate product of a given period of time, C the capital invested, π the profit, r the *ratio* of profit to capital (rate), c the capital used up, then $P - c = \pi$, $r = \frac{\pi}{C}$, therefore $Cr = \pi$. Therefore $P - c = Cr$; therefore $r = \frac{P - c}{C}$ ” ([p.] 70, Note 1).

Which means nothing more than that the rate of profit = the ratio of profit to capital and that profit = the excess of the value of the product over its cost price.

In general, when Cherbuliez speaks about consumed and unconsumed capital he has at the back of his mind the difference between fixed and circulating capital, and not the distinction which he himself has drawn, namely, that between the different types of capital based on the production process. Surplus value is antecedent to circulation and no matter how much the differences arising out of circulation affect the rate of profit, they have nothing to do with the origin of profit.

“Productive capital is composed of a consumable part and a non-consumable part. The more wealth and population increase, the more the consumable part tends to increase, because the extractive INDUSTRIES demand an ever greater supply of labour. On the other hand, this same progress causes the *amount* of capital advanced to increase at a much faster rate than the amount of capital *consumed*. Thus although the total mass of capital consumed tends to increase, the effect is neutralised, because the mass of products grows in more rapid progression and the *total amount of profit* must be considered as growing at a rate at least as high as that at which the *total amount of capital advanced* grows” ([p.] 71).^a “The amount of profit grows, not the rate, which is the ratio of this amount to the capital advanced,

$r = \frac{P - c}{C}$. It is clear that $P - c$ or the profit, since $P - c = \pi$, can grow although r declines, if C grows more rapidly than $P - c$ ” ([p.] 71, Note 1).

^a Marx quotes partly in German and partly in French.—*Ed.*

Here the reason for the decline in the rate of profit is touched on, but in view of the preceding distortions, it can only lead to confusion and contradictions which cancel each other out. First the amount of capital consumed grows but the amount of products grows even more rapidly (i.e. the excess of the value of the products over their cost price in this case), for it grows in proportion to the capital advanced and this grows more rapidly than the capital consumed. *Why* the fixed capital grows more rapidly than the mass of raw materials, for example, is not explained anywhere. BUT NEVER MIND. The amount of profit grows *in proportion to the capital advanced*, to the total capital, but [XVIII-1109] the *rate of profit* is nevertheless supposed to fall, because the total capital grows more rapidly than the mass of products or rather than the amount of profit. First the *amount of profit grows* at a rate at least as great as that at which “the total amount of capital advanced” grows, and then the rate of profit *falls*, because the total amount of capital advanced grows more rapidly than the amount of profit. First $P-c$ grows “at least” proportionally to C , and then $\frac{P-c}{C}$ falls, because C increases

even more rapidly than $P-c$, which “increases at least as rapidly as C ”. If we throw aside all this confusion, then all that remains is the tautology that $\frac{P-c}{C}$ *can* fall although $P-c$ increases, that is,

that the rate of profit can fall although profit increases when the rate falls. The rate of profit simply signifies the ratio of $P-c$ to C , [and this ratio declines] when capital increases more rapidly than the amount of profit.

Thus the final pearl of wisdom is that the rate of profit can fall, that is, the ratio of an increasing amount of profit to capital can fall when the capital increases more rapidly than the amount of profit, or if the amount of profit, despite the absolute growth, declines relatively in comparison with the capital. This is nothing but a different expression for the decline in the rate of profit. But that this phenomenon is within the bounds of possibility, and even its existence, has never been called to question. The sole point at issue was precisely to explain the cause of this phenomenon, and Cherbuliez explains the decline in the rate of profit, the decline in the amount of profit in relation to the total capital, by the relative increase in the amount of profit which is at least proportionate to the growth of the capital. He obviously surmises that the mass of living labour employed declines relatively to past labour, although

it increases absolutely, and that *therefore* the rate of profit must decline. But he never arrives at a clear understanding. The closer one comes to the threshold of understanding, the more distorted the statements become, unless the threshold is actually crossed, and [the greater is] the illusion of having crossed it.

On the other hand, what he says about the *equalisation of the general rate of profit* is very much to the point.

//In the second chapter of Part III, on "Capital and Profit", where the formation of the general rate of profit is dealt with, the following must be considered:

1) *Different organic composition of capitals*, partly conditioned by the difference between variable and constant capital in so far as this arises from the *stage of production*—the absolute *quantitative* relations between machinery, raw materials and the quantity of labour which sets them in motion. These differences relate to the labour process. The differences between *fixed and circulating capital* arising from the *circulation process* have also to be considered—differences which lead to valorisation variations, in a *given period of time*, in different spheres.

2) *Differences in the relative value of the parts* of different capitals which do not arise from their organic composition. These arise from the difference of *VALUE* particularly of the raw materials, even assuming that the raw materials absorb an equal quantity of labour in two different spheres.

3) The result of those differences is *diversity of the rates of profit in different spheres* of capitalist production. It is true only for capitals of equal composition, etc., that the rate of profit is the same and the amount of profit is in proportion to the size of the capital employed.

4) *For the total capital*, however, what has been explained in CHAPTER I holds good. In capitalist production each capital is assumed to be a unit, an aliquot part of the total capital. *Formation of the general rate of profit.* (Competition.)

5) *Transformation of values into prices of production.* Difference between value, cost price, and production price.//

//6) To take up also the Ricardian point: The influence of general variations in wages on the general rate of profit and *HENCE* on prices of production.//

"After the deduction of rent, what remains of the *amount of profit*, that is, of the excess of products over the capital consumed, is divided between the capitalist producers *in proportion to the capital each has advanced*, whereas the portion of the product which corresponds to the capital consumed and is intended to replace it, is divided in proportion with the capital actually used up. This *dual law of division*

comes about as a *result of competition*, which tends to equalise the advantages of all investments of capital. Finally, this dual law of division determines the respective *values* and *prices* of the different kinds of products" ([pp.] 71-72).

This is very good. Only the concluding words are wrong, namely, that the formation of the general rate of profit determines the *values* and *prices* (it should be prices of production) of commodities. On the contrary, the determination of the value is the *prius*,^a antecedent to the rate of profit and to the establishment of production prices. How can any *division* at all of the "amount of profit", i.e. of the surplus value [XVIII-1110]—which is itself only a part of the total value of commodities—determine the "amount of profit", that is, the surplus value, that is, the value of the commodities? This is only correct if, by relative values of commodities, one means their production prices. The whole lopsidedness of Cherbuliez's presentation arises from the fact that he does not examine the origin and the laws of value and surplus value independently. In other respects, he describes the relation between wage labour and capital more or less correctly.

"People who neither receive anything by devolution" (legal transfer, inheritance, etc.), "nor have any possessions they can exchange, can obtain what they need only by offering their *labour* to the capitalist. They only acquire the right to the things which are allocated to them as the *price of labour*, but they have no right to the *product* of their labour, nor to the *value* which they have added" ([pp.] 55-56). "By *exchanging* his labour for a certain volume of *approvisionnement*, the worker completely renounces all right to the other portions of capital. The *attribution* of these products remains the same as it was previously; it is not modified in any way by the above-mentioned convention. The products continue to belong exclusively to the capitalist who has provided the raw materials and the *approvisionnement*. This is an *inescapable sequence of the law of appropriation, the fundamental principle* of which was, conversely, the *exclusive right of every worker to the product of this labour*" (p. 58).

This fundamental principle, according to Cherbuliez, is as follows:

"The worker has an exclusive right to the value resulting from his labour" (p. 48).^b

Cherbuliez does not understand nor does he explain how the law of commodities, according to which commodities are equivalents and exchange with one another in proportion to their value, i.e. to the labour time embodied in them, unexpectedly leads to the result that on the contrary capitalist production—and only on the basis of capitalist production is it essential for the product to

^a Primary factor.—*Ed.*

^b Marx quotes in French.—*Ed.*

be produced as a commodity—depends on the fact that one portion of labour is appropriated without exchange. He only senses that a *transformation* has suddenly taken place.

This fundamental principle is a pure fiction. It arises from the surface appearance of *commodity circulation*. Commodities are exchanged with one another according to their value, that is, according to the labour embodied in them. Individuals confront one another only as commodity owners and can therefore only acquire other individuals' commodities by alienating their own. It therefore *appears* as if they exchanged only their own labour since the exchange of commodities which contain *other people's* labour, in so far as they themselves were not acquired by the individuals in exchange for their own commodities, presupposes different relations between people than those of [simple] commodity owners, of buyers and of sellers. In capitalist production this appearance, which its surface displays, disappears. What does not disappear, however, is the illusion that originally men confront one another only as commodity owners and that, consequently, a person is only a property owner in so far as he is a worker. As has been stated, this "originally" is a delusion arising from the surface appearance of capitalist production and has never existed historically. In general, man (isolated or social) always comes on to the stage as a property owner before he appears as a worker, even if the property is only what he procures for himself from inorganic nature (or what he as a member of the family, tribe, communal organisation, procures partly from nature, partly from the means of production which have already been produced in common). And as soon as the first animal state is left behind, man's property in nature is mediated by his existence as a member of a communal body, family, tribe, etc., by his relationship to other men, which determines his relationship to nature. The "propertyless labourer" as a "fundamental principle" is rather a creature of civilisation and, on the historical scale, of "capitalist production". This is a law of "expropriation" not of "appropriation", at least not simply of appropriation in the way Cherbuliez imagines it, but a kind of appropriation which corresponds to a definite, specific mode of production.

"Every accumulation of wealth provides the means for accelerating further accumulation" ([p.] 29).^a

On page 59, Cherbuliez calls *matières brutes* and machinery, etc., "the two *passive elements of capital*" in contrast to the *approvisionnement*.

^a Marx quotes in French.—Ed.

//Ricardo's view (derived from Smith) that all accumulation can be reduced to expenditure on wages, would be incorrect even if no accumulation *in natura* took place—[which is the case,] for example, when the FARMER SOWS more seed, the stock-breeder increases his stock of cattle for breeding or for fattening, the owner of engineering works uses part of his surplus value in the form of machine tools—and even if all producers who produce the elements of some part of capital did not overproduce regularly, counting on the fact of annual accumulation, i.e. the expansion of the general scale of production. Moreover, the farmer can exchange part of his SURPLUS corn with the stock-breeder, who may convert this corn into variable capital while the farmer converts his corn into constant capital [by means of this exchange]. The flax-grower [XVIII-1111] sells part of his surplus product to the spinner, who converts it into constant capital. With this money the flax-grower can buy tools and the tool-maker can buy iron, etc., so that all these elements are turned directly into constant capital.

But disregarding all this, let us assume that a manufacturer of machines wants to convert AN ADDITIONAL CAPITAL OF £1,000 into elements of production. He will of course lay out part of it on wages, say £200. But he buys iron, coal, etc., with the remaining 800. Let us assume that this iron, coal, etc., has first to be produced. Then, if the iron or coal producers either have no excess (accumulated) stocks of their commodities, and likewise have NO ADDITIONAL MACHINERY and are unable to buy it immediately (for in this case too constant capital would be exchanged for constant capital), they can only [produce the required iron and coal] if they work their old MACHINERY longer. As a result, they would have to replace it more rapidly, but a part of its value would enter into the new product. Irrespective of this, however, the iron manufacturer needs more coal in any case and must therefore transform at least part of his share in the £800 directly into constant capital. Both coal and iron producers sell their wares in such a way that they contain unpaid surplus labour. And if this amounts to a $\frac{1}{4}$, then this alone means that 200 out of the £800 is not converted into wages, not to mention the part which has to make good the wear and tear of the old machinery.

The SURPLUS consists always of the articles produced by the particular capital, i.e. coal, iron, etc. Part of the SURPLUS is converted directly into constant capital when the producers whose commodities serve as elements of production for other producers exchange these commodities with one another. That part [of the

surplus value], however, which is exchanged against the products of those who produce means of subsistence and replaces their constant capital, provides the necessary variable capital. The producers of means of subsistence that can no longer enter as elements into their production (except as variable capital) acquire additional constant capital through the same process which provides the other [producers] with additional variable capital.

The following features distinguish reproduction—in so far as it constitutes accumulation—from simple reproduction.

Firstly: Both the constant and variable elements of production which are accumulated consist of newly added labour. They do not amount to revenue, although they arise from profit. They amount to profit or surplus labour, whereas in the case of simple reproduction part of the product represents past labour (i.e. in this context, labour which has not been performed in the current year).

Secondly: If the labour time in certain branches is lengthened, that is, if NO ADDITIONAL INSTRUMENTS or machines are employed, the new product must indeed, to a certain extent, pay for the more rapid wear and tear of the old [tools or machines], and this accelerated consumption of the old constant capital is likewise an aspect of accumulation.

As a result of the ADDITIONAL money capital which arises in the process of reproduction—partly through the freeing of capital, partly through the conversion of part of the product into money, partly because, as a result of the money collected by the producer, the demand for other [commodities], e.g., [those offered by the] sellers of luxury goods, is reduced—the systematic replacement of the elements [of production] is by no means a necessity, as it is in the case of simple reproduction. With the ADDITIONAL money anyone can buy or command products, although the producer from whom the purchase is made may neither expend his revenue on the product of the purchaser nor replace his capital with it.//
//ADDITIONAL CAPITAL (constant or variable) must appear in the form of money capital on one side, even if this only exists in the form of outstanding claims, whenever it is not balanced by a corresponding addition on the other side.//

For the rest, Cherbuliez presents a remarkable amalgam of Sismondian and Ricardian contradictory views.

Cherbuliez says:

“The products are appropriated before they are converted into capital; and this conversion does not eliminate such appropriation” ([p.] 54).^a

^a Marx quotes partly in German and partly in French.—*Ed.*

But this applies not only to the products, but also to labour. Raw materials, etc., and means of labour belong to the capitalist. They are the *converted* form of his money. On the other hand, when he has bought labour capacity or the daily (say 12 hours) USE of labour capacity, with a sum of money=the product of 6 hours of labour, then the labour of 12 hours belongs to him; it is *appropriated* by him before it is carried out. The process of production itself turns labour into capital. But this transformation is an act which takes place later than its appropriation. The "products" are converted into capital, *physically* converted in so far as in the labour process they function as conditions of labour, conditions of production, objects and means of labour, and *formally* converted in so far as not only their *value* COMES TO BE PERPETUATED but as they become means for absorbing *labour and surplus labour*, in so far as they IN FACT function AS ABSORBERS OF LABOUR. [XVIII-1112] On the other hand: the labour capacity *appropriated before* the [production] process is turned directly into capital *in* the course of the process by being converted into the conditions of labour and into SURPLUS VALUE; as a result of its embodiment in the product, it not only preserves the constant capital but replaces the variable capital and adds SURPLUS VALUE.

Sismondian:

"The hypothesis that an *invariable ratio* exists between the different elements of capital is not substantiated at any stage of the economic development of society. The relationship is essentially *variable* and for two reasons: a) the division of labour, and b) the replacement of human labour by natural agents" ([p.] 61). "These two factors tend to reduce the *ratio* of the *approvisionnement* to the other two elements of capital" ([pp.] 61-62).

"In this situation, the *increase in productive capital* does not necessarily lead to an increase in the amount of *approvisionnement* intended to constitute the price of labour; it can be accompanied—at least TEMPORARILY—by an absolute diminution of this element of capital, and consequently by a *reduction in the price of labour*" ([p.] 63).^a

//This is Sismondian; the effect on the *wage level* is the only aspect considered by Cherbuliez. This problem does not arise at all in an investigation where the *value of labour is always supposed to be paid, and the fluctuations of the *market price* of labour beyond or below that point (the value) are not taken into consideration.*//

"The producer who wishes to introduce a new division of labour in his enterprise or to exploit some natural force, will not wait until he has accumulated sufficient capital to be able to employ in this new way *all* the workers he needed previously. In the case of division of labour, he will perhaps be satisfied to produce

^a Marx quotes partly in German and partly in French.—*Ed.*

with 5 workers what he previously produced with 10. In the case of the exploitation of a natural force, he will perhaps use only 1 machine and 2 workers. The *approvisionnement* will, in consequence, be reduced to 1,500 in the first case and to 600 in the second. But since the number of workers remains the same, *their competition* will soon force the price of labour below its original level" ([pp.] 63-64).^a "This is one of the most astonishing results of *the law of appropriation*. The absolute increase in wealth, that is, in the products of labour, does not give rise to a proportional increase and may lead to a diminution in the *approvisionnement* for the workers, in the portion they receive of all kinds of products" ([p.] 64). "The factors determining the *price of labour*" //in this context it is always a question only of the *MARKET PRICE OF LABOUR*// "are the absolute amount of productive capital and the ratio between the different elements of capital, two social facts on which the will of the workers can exercise no influence" ([p.] 64). "Nearly all the odds are against the worker" (l.c.).

The ratio between the different elements of productive capital is determined in two ways. *First*: By the organic composition of productive capital. By this we mean the technological composition. With a *given productive power of labour*, which can be taken as constant so long as no change occurs, the amount of raw material and means of labour, that is, the amount of constant capital—in terms of its *material elements*—which corresponds to a definite *quantity of living labour* (paid or unpaid), that is, to the *material elements* of *variable* capital, is determined in every sphere of production.

If the proportion of the objectified labour to the living labour employed is small, then the portion of the product that represents living labour will be large regardless of how this portion is divided between capitalist and worker. If the reverse is the case, the contrary result will occur. With a given rate of exploitation of labour, the surplus labour too will be large in the former case and small in the latter. This can only change as a result of a change in the mode of production which alters the technological relationship between the two parts of capital. Even in this case, the absolute amount of living labour employed by the capital which uses a greater proportion of constant capital may be equal or even larger if capitals of different *size* are compared. But it must be smaller *relatively*. For capitals of the same size, or calculated in proportion to the total capital—100 for example—it must be smaller both relatively and absolutely. All changes arising from the development (not the decline) of the productive power of labour, reduce that part of the product which represents living labour, that is, they reduce variable capital. Regarding capitals [XVIII-1113] invested in different branches of production, one can say [that these

^a Marx quotes partly in German and partly in French.—Ed.

changes] reduce the *variable* capital absolutely in those branches which have reached a higher level of production, since wages are assumed to be equal.

So much with regard TO THE CHANGES arising from changes in the mode of production.

Secondly, however, if one assumes that the organic composition of capitals is given and likewise the differences which arise from the differences in their organic composition, then the *value ratio* can change although the technological composition remains the same. What can happen is: a) a CHANGE in the value of the constant capital; b) a CHANGE in the value of the variable capital; c) a CHANGE in both, in equal or unequal proportions.

a) If the technological composition remains the same and a CHANGE in the value of constant capital takes place, its value will either fall or rise. If it falls, and only the same amount of living labour is employed as previously, i.e. if the *scale* or *level of production* remains the same, if, for example, 100 men are employed as previously, the same physical amount of raw material and means of labour continues to be required. But the SURPLUS LABOUR BEARS A GREATER PROPORTION TO THE WHOLE CAPITAL ADVANCED. The rate of profit rises. In the opposite case it declines. In the former case, *for the capitals already employed in that sphere (not those newly invested in * it *after the change of value in the elements of constant capital has taken place), the total sum of the capital employed diminishes or some portion of that capital is set free, although production continues to be carried on on the same scale; or the capital so liberated is added to the production and then works like an accumulation of capital. The scale of production is enlarged, and the absolute amount of surplus labour is increased proportionally.* With a given *mode of production*, every accumulation of capital results in an INCREASE in the TOTAL AMOUNT OF SURPLUS VALUE WHATEVER THE RATE OF SURPLUS VALUE may be.

Conversely, if the VALUE OF THE ELEMENTS OF CONSTANT capital increases, then *either the *scale of production* (hence the mass of the total capital advanced) must increase to employ the *same quantity* of labour (the same variable capital—unchanged in its value) as before; and then, although the absolute amount of surplus value, and the rate of surplus value, remains the same, its proportion to the whole capital advanced sinks, and, hence, the rate of profit falls.* Or the scale of production and the TOTAL SUM OF CAPITAL ADVANCED is not enlarged. In the latter case the variable capital must decrease whatever the circumstances. If the same sum as previously is laid out in constant capital, it now represents a smaller amount of

material elements and since the *technological conditions* remain the same, *less labour is to be employed. The whole capital advanced is then diminished by the labour dismissed; the total value of the capital advanced is diminished, but of that diminished capital the constant capital bears (value considered) a greater proportion. The surplus value is diminished absolutely, because less labour is employed; and the proportion of the remaining surplus value to the total capital advanced is diminished, because variable capital bears a less proportion to constant capital.

On the other hand, if the whole capital is employed as before—the less value of the variable capital (representing a less quantity of the whole of labour (living labour) employed) being absorbed by the greater value of the constant capital; the one being diminished in the same proportion as the other is augmented—then the absolute quantity of surplus value sinks, because less labour is employed, and, at the same time, the proportion of this surplus value to the whole capital advanced falls. Thus the rate of profit sinks from two causes, the diminution in the amount of surplus labour, and the decreasing proportion borne by that surplus labour to the total capital advanced.*

In the first case (with SINKING VALUE OF THE ELEMENTS OF CONSTANT CAPITAL) where the *rate of profit rises* in all circumstances the *scale of production* must be extended if the *amount of profit* is to increase. Let us assume that the capital is 600—half constant, half variable. If the constant capital were to lose $\frac{1}{2}$ its value, it would only amount to 150, although the variable capital would remain 300. The total capital employed would be only 450, 150 being freed. If the 150 are added to the capital again, then $128\frac{4}{7}$ of the 150 will now be laid out in variable [XVIII-1114] capital. Thus the *scale of production* is expanded and more labour employed, if the same capital continues to be used in the production process.

In the opposite case, where with RISING VALUE OF THE ELEMENTS OF CONSTANT CAPITAL the *rate of profit falls* in all circumstances, the *scale of production*, and therefore THE CAPITAL ADVANCED, must be INCREASED if the amount of profit is not to *decrease* and the *amount* of labour employed (and therefore SURPLUS VALUE) is to remain *the same*. If this is not done, if only THE OLD OR LESS THAN THE OLD CAPITAL IS ADVANCED, then not only does the rate of profit decline, but also the amount of profit.

The rate of surplus value remains unchanged in both cases; it changes, however, if any change in the *technological* composition of capital takes place: it increases if the constant capital increases (because labour is then more productive) and declines when it falls (because labour is then less productive).

b) If there is any CHANGE in the value of variable capital independent of the *organic composition*, it can only occur because of a fall or a rise in the price of means of subsistence that are not produced in the sphere of production under consideration but enter into it as commodities from outside.

If the *value of variable capital* falls, it nevertheless represents the same amount of living labour as before. The same quantity of labour merely costs less. If therefore the *scale of production* remains the same (since the value of constant capital is unchanged), then the part of the total capital used for the purchase of labour is diminished. Less capital needs to be laid out in order to pay the same number of workers. Thus, in this case, if the *scale of production remains the same*, the amount of capital laid out diminishes. The rate of profit increases, and this for two reasons. The *SURPLUS VALUE has increased*; the ratio of living labour to objectified labour has remained the same, but the increased SURPLUS VALUE correlates with a smaller total capital. If, on the other hand, the capital freed is again invested, then this = *accumulation*.

If the *value of the variable capital* increases, then a greater total capital must be laid out in order to employ the same number of workers as before, because the value of the constant capital remains the same and that of the variable capital has risen. The amount of labour remains the same, but a smaller part of it is SURPLUS LABOUR, and this smaller part corresponds to a larger capital. This takes place when the *scale of production remains the same*, while the value of the total capital increases. If the value of the total capital does not increase, the *scale of production* must be reduced. The amount of LABOUR declines and a smaller portion of this reduced amount constitutes SURPLUS LABOUR, WHICH, TOO, BEARS A SMALLER PROPORTION TO THE WHOLE CAPITAL ADVANCED.

The ORGANIC CHANGES and those brought about by CHANGES OF VALUE can have a similar effect on the rate of profit in certain CIRCUMSTANCES. They differ however in the following way. If the latter are not due simply to FLUCTUATIONS OF MARKET PRICES and are therefore not temporary, they are invariably caused by an ORGANIC CHANGE in the spheres that provide the elements of constant or of variable capital.

It is not necessary here to examine CASE 3 in detail.

In the case of capitals of equal size—or if the calculation is based on equal amounts of the total capital, 100, for example—the *organic composition* may be the same in different spheres of production, but the *value ratio* of the primary component parts of constant and variable capital may be different according to the

different values of the amount of instruments and raw materials used. For example, copper instead of iron, iron instead of lead, wool instead of cotton, etc.

On the other hand, is it possible for the organic composition to be different if the *value ratio* remains the same? If the organic composition is the same, the relative amounts which constitute constant capital and living labour are *the same* per 100. The quantitative proportions are the same. The value of the constant capital may be the same, although the relative amounts of labour set in motion are different. If the machinery or raw materials are dearer (or cheaper), less labour, for example, may be required, but in this case the value of the variable capital is also relatively smaller or vice versa.

[XVIII-1115] Let us take A and B. c' and v' are the component parts (in terms of value) of A, and c and v those of B (in terms of value). If $c':v' = c:v$, then $c'v = v'c$. Consequently likewise $\frac{c'}{c} = \frac{v'}{v}$.

Since the *value ratios* [of constant to variable capital] are equal, only the following variations are possible. If in one sphere *more surplus labour is carried out* [than in another sphere] (for example, night-work is impossible in agriculture, and although the individual agricultural labourer can be overworked, nevertheless the total amount of labour which can be expended on a given area of land, etc., is limited by the object being produced (corn), whereas in a factory of a given size the amount produced depends ($\delta\acute{\upsilon}\nu\alpha\mu\epsilon\iota$ ^a) on the hours of labour worked) (that is to say, it is due to the different modes of production that more surplus labour can be employed in one sphere at a given level of production than in another), then, even if the value ratio of constant and variable capital is the same, the amount of labour employed in proportion to the total capital will nevertheless be different.

Or, let us assume that the [raw] material is dearer and labour (of greater *skill*) is dearer, in the same proportion. In this case A employs 5 workers, where B employs 25, and they cost him £100—as much as the 25 workers, because their labour is dearer (their surplus labour is therefore also worth more). These 5 workers work up 10 lbs of raw material, $y=500$ and B's workers work up 1,000 lbs of raw material, x , worth 500, because the raw material is dearer and the productive power of labour is less highly developed in the case of A. The *value ratio* here—£100 v to

^a Potentially.—Ed.

500 *c*—is the same in both cases, but the *organic composition* is different.

The *value ratio* is the same: the value of constant capital in A is the same as in B, and proportionately A lays out the same amount of capital in wages as B. But the quantity of his products will be smaller. Although he employs the same absolute quantity of labour as B, he uses more relatively, because his constant capital is dearer. He processes less raw material, etc., in the same time, but this smaller quantity costs him as much as the larger quantity processed by B. The *value ratio* in this case is the same, the organic composition is different. In the other case the value ratio being assumed to be the same, this can occur only if the amounts of the surplus labour are different or if the values of the different kinds of labour are different.

The organic composition can be taken to mean the following: Different ratios in which it is necessary to expend constant capital in the different spheres of production in order to absorb the same amount of labour. The *combination of the same amount of labour* with the object of labour requires either that both more raw material and more MACHINERY are used in one case than in the other, or that more if only one of these is used.

//Where the ratios between fixed and circulating capital are very different, those between *constant and variable* capital can be the same, consequently the SURPLUS VALUE can be the same although the values produced annually must be different. Let us assume that in the coal industry—where no raw materials are used (apart from *matières instrumentales*), the fixed capital constitutes half the total capital and variable capital the other half. Let us assume that in tailoring the fixed capital=0 (as in the previous case we disregard *matières instrumentales*), that the raw materials= $\frac{1}{2}$ and the variable capital= $\frac{1}{2}$. Given the same degree of exploitation of labour, both will realise the same amount of SURPLUS VALUE, since both employ the same amount of labour in proportion to capital, i.e. per 100. But let us assume that fixed capital in the coal industry turns over once every 10 years while there is no difference in the rate of turnover of circulating capital in both cases. At the end of the year (we will assume that the variable capital turns over once a year in both cases) the tailor's capital will have produced values amounting to 150 if the surplus VALUE=50. The coal producer, on the other hand, will have produced values amounting to 105 at the end of the first year (consisting of 5 for fixed capital, 50 for variable and 50 for surplus labour). As in the case of the tailor (the total value of his product+the fixed capital=150, that is, the

product=105+45 for the remaining fixed capital). The production of different magnitudes of value therefore does not preclude the production of *the same* amount of SURPLUS VALUE.

In the 2nd year, the fixed capital of the coal producer would=45, variable capital=50 and surplus value=50, that is, the capital advanced would=95 and the profit would=50. The rate of profit would have *risen*, because the value of the fixed [XVIII-1116] capital would have declined by $\frac{1}{10}$ as a result of wear and tear during the first year. Thus there can be no doubt that in the case of all capitals employing a great deal of fixed capital—provided the scale of production remains unchanged—the rate of profit must *rise* in proportion as the value of the machinery, the fixed capital, declines annually, because wear and tear has already been taken into account. If the coal producer sells his coal at the same price throughout the 10 years, then his rate of profit must be higher in the 2nd year than it was in the 1st AND SO FORTH. Or one would have to assume that the maintenance work, etc., stands in direct proportion to the depreciation, so that the total sum advanced annually under the heading of fixed capital remains the same. This extra profit may be equalised also as a result of the fact that—apart from wear and tear—the value of fixed capital falls in the course of time, because it has to compete with new, more recently invented, better machinery. On the other hand, this falling^a rate of profit, which results naturally from wear and tear, makes it possible for the declining value of the fixed capital to compete with newer, better machinery, the full value of which has still to be taken into account. Finally, the coal producer sold his coal more cheaply [at the end of the second year] on the basis of the following calculation: 50 on 100 means 50% profit, 50% on 95 comes to $47\frac{1}{2}$; if therefore he sold the same quantity of coal [not for 105 but] for $47\frac{1}{2}$ —then he would have sold it more cheaply than the man whose machinery, for example, began to operate only in the current year. Large installations of fixed capital presuppose possession of large amounts of capital. And since these big owners of capital dominate the market, it appears that only for this reason their enterprises yield SURPLUS PROFIT (rent). In the case of agriculture, this rent derives from working relatively fertile land, but here we are dealing with a case where relatively cheaper machinery is utilised.//

//A large number of instances which are adduced in connection with the relation of fixed to circulating capital, refer to the

^a Thus in the original. Presumably, it should be “rising”.—Ed.

difference between variable and constant capital. First of all, the proportion of constant to variable capital can be the same although the proportion of fixed to circulating capital is different. Secondly, in the case of constant and variable capital it is a question of the primary division of capital between living and *objectified* labour, *not* of the modification of this relationship by the circulation process or the influence of this latter on reproduction.

It is clear *d'abord* that the difference between fixed and circulating capital can affect surplus value (apart from the differences in the mass of living labour employed, i.e. differences which are related to the ratio of variable to constant capital) only in so far as it affects the *turnover* of the total capital. It is therefore necessary to investigate how the *turnover* affects surplus value. Two factors are obviously closely connected with it: 1) SURPLUS VALUE cannot be accumulated, reconverted into capital, so rapidly (so often); 2) the *capital advanced* must increase both to continue to employ the same number of workers, etc., and because the advances [of money] which the capitalist makes to himself to cover his own consumption costs must extend over a longer period. These factors are important in connection with *profit*. Here however it is, to begin with, only necessary to examine how they affect SURPLUS VALUE. One must moreover always clearly distinguish between these two factors.//

//Everything which increases the *advances* without proportionally increasing the surplus value, reduces the rate of profit EVEN IF THE SURPLUS VALUE REMAINS THE SAME; the opposite is the case with everything which reduces them. In so far, therefore, as a large amount of fixed capital in proportion to circulating capital—or different turnover periods of capital—affects the size of the advances, it affects the rate of profit EVEN IF NOT AT ALL AFFECTING THE SURPLUS VALUE.//

//The rate of profit is NOT SIMPLY the SURPLUS VALUE calculated on the capital advanced, BUT THE MASS OF SURPLUS VALUE REALISED WITHIN A GIVEN PERIOD, that is, in a definite period of circulation. In so far as the difference between fixed and circulating capital affects the MASS OF SURPLUS VALUE which a particular capital yields WITHIN A GIVEN PERIOD, it affects the rate of profit. Two aspects must be taken into consideration: [firstly,] the difference in the size of the *advances* (RELATIVE TO THE SURPLUS VALUE REALISED) and SECONDLY, THE DIFFERENCE IN THE LENGTH OF TIME FOR WHICH THESE ADVANCES HAVE TO BE MADE BEFORE THEY ARE RETURNED WITH A SURPLUS.//

[XVIII-1117] //The reproduction time, or rather, the number of

reproductions taking place in a definite period of time, is substantially affected by 2 circumstances:

1) *The product remains longer in the sphere of production proper. It is possible firstly* that, in order to be produced, one product requires a longer period of time than another; it may require a larger part of a year, a whole year or even more than a year. (The latter is the case for example with buildings, in stock-breeding and the production of certain luxuries.) In this case, the product continually absorbs labour—often a great deal of labour is absorbed (for instance by luxury articles and buildings) in relation to the constant capital—the amount depending on the composition of the productive capital, its division into constant and variable capital. Thus in the measure as the time required for the production of the commodity increases and the labour process continues uniformly, a continuous absorption of labour and of surplus labour takes place. This happens for example with cattle or buildings if the latter require say more than a year's work. The product can enter the sphere of circulation, that is, it can be sold, be thrown on the market, only when the work is completed. The surplus labour expended in the first year is embodied with the rest of the labour in the unfinished product of the first year. It is neither greater nor smaller than in other branches of production where the ratio between constant and variable capital is the same. But the value of the product cannot be *realised*, that is, in the sense that it cannot be converted into money, and neither can the SURPLUS VALUE. The latter cannot therefore be accumulated as capital nor used for consumption. The capital advanced, and also the SURPLUS VALUE, serve, so to speak, as foundations for further production. They are a precondition for it and enter, to some extent, as semi-finished products, or, *d'une manière ou d'une autre*,^a as raw material into the production process of the 2nd year.

Let us assume that the capital is [£]500, labour=100 and surplus value=50, so that the capital advanced in production=550+500 which is advanced in the 2nd year. The surplus value again=50. The value of the product is therefore=£1,100, of which 100 is surplus value. In this case, the surplus value is the same as if the capital had been reproduced in the first year and £500 had been invested again in the 2nd year. In each year the variable capital employed is 100 and the surplus value 50. But the *rate of profit* is different. In the first year it is 50, or 10%. But in the second year the capital advanced amounts to

^a In one way or another.—Ed.

550+500=1,050, and $\frac{1}{10}$ of this=105. If one assumes the same rate of profit, then the value of the product comes to: 550 in the 1st year; 550+500+55+50=1,155 in the 2nd year. At the end of the 2nd year, the value of the product=1,155. Otherwise it would have been only 1,100. In this case, the profit is greater than the surplus value produced, for this only amounts to 100. If one includes the consumption costs which the capitalist has to advance over 2 years, then the capital laid out is even greater in proportion to the surplus value. On the other hand, it is true that the *entire* surplus value gained in the first year has been converted into capital in the 2nd. Furthermore, the capital laid out in wages is greater, because the 100 is not reproduced at the end of the first year, so that in the 2nd year 200 must be advanced for the same labour for which 100 would have been sufficient if it had been reproduced in the 1st year.

Secondly. After the labour process has been completed, the product must continue to remain in the production sphere in order to undergo natural processes which require either no labour or relatively quite insignificant amounts of it, like wine in the cellar. Only when this period has elapsed can the capital be reproduced. It is obvious that in this case, quite irrespective of what the ratio of variable to constant capital may have been, the effect is the same as if more constant and less variable capital had been laid out. The SURPLUS LABOUR, as well as the total amount of LABOUR employed during a definite period of time, is smaller. If the *rate of profit* is the same, this is due to equalisation, not to the amount of SURPLUS VALUE produced in this sphere. More capital must be advanced beforehand to maintain the reproduction process—the continuity of production. And for this very reason the SURPLUS VALUE declines *in proportion* to the capital advanced.

Thirdly. Interruptions in the labour process while the product is in the production process, as in agriculture or in processes such as tanning, etc., where chemical processes involve intervals before the product can proceed from one stage to the next, higher one. If in such cases the interval is reduced by chemical discoveries, the productivity of labour rises, the SURPLUS VALUE [is increased] and objectified labour has to be advanced for a shorter period of time. In all these cases, the SURPLUS VALUE is smaller and the advanced capital larger.

2) The same thing happens if the rate of turnover of the circulating capital is lower than the AVERAGE because of distant markets. In this case, too, the advanced capital is greater, the SURPLUS VALUE smaller and its *proportion* to the advanced capital is

also smaller.// //In the latter case [the capital] is retained longer in the circulation sphere, in the former case, in the production sphere.//

[XVIII-1118] //Let us assume that the capital advanced in some branch or other of the transport industry=1,000, fixed capital=500, which will be worn out in 5 years. The variable capital, which=500, turns over 4 times during the year. The annual value of the product will thus be $100+500+100$, if the [annual] rate of surplus value=20%, a total of 700. On the other hand, let us assume that in a branch of tailoring the constant capital, which consists only of circulating capital,=500 (the fixed capital=0) and the variable capital=500. Surplus value=100. [The capital] turns over 4 times a year. Then the (annual) value of the product will be $4(500+500)+100=4,100$. The surplus value is the same in both cases. In the last-mentioned case, the entire capital turns over 4 times a year or once a quarter. Of the other capital 600 turn over in the course of a year, therefore $\frac{600}{4}=150$ in a quarter of a year. That is, 50 in a month, 100 in 2 months, and 400 in 8 months. The whole capital requires 1 year and 8 months or 20 months, in order to turn over. In a year, only $\frac{6}{10}$ of it turns over.

Now it will be said that in order to make a profit of 10%, less is added per quarter on a value of 1,000 in the case of the first capital than in that of the other. But here it is not a question of addition. One makes more surplus value on the capital used up but not on the capital employed. The difference here arises from the surplus value, not from the addition of profit. The difference here lies in the value, not in the surplus value. In both cases the variable capital amounting to 500 turns over 4 times in a year. Both capitals yield a surplus value of 100 in a year, the [annual] rate of surplus value=20%. But £25 in a quarter, therefore a higher percentage? 25 on 500 each quarter=5% a quarter, that is, 20% per annum.

The first [capitalist] turns over $\frac{1}{2}$ his capital 4 times a year and only $\frac{1}{5}$ of the remaining $\frac{1}{2}$ once during the year. A half of four times is *twice*. Thus he turns his capital over $2\frac{1}{10}$ times during the year. The entire capital of the second capitalist turns over 4 times a year. But this makes absolutely no difference to the SURPLUS VALUE. If the second capitalist continues the reproduction process uninterruptedly, then he must constantly convert 500 into raw materials, etc., and must always use 500 for labour, while the other capitalist likewise uses 500 for labour and has invested the

remaining 500 once and for all (that is, for 5 years) in such a form that he does not need to reconvert it again. This applies however when the ratio of variable to constant capital is the same [in both capitals] despite the difference between fixed and circulating capital. If in both cases, $\frac{1}{2}$ consists of constant and $\frac{1}{2}$ of variable capital, then it is only possible for $\frac{1}{2}$ [in one case] to consist of fixed capital if the circulating constant capital=0, and [in the other case], $\frac{1}{2}$ can consist of circulating constant capital only if the fixed capital=0. Although the circulating constant capital can=0, as in the extractive and transport industries where, however, the *matières instrumentales* rather than the raw materials constitute the circulating constant capital, the fixed capital can never=0 (except in banking, etc.). This is however immaterial so long as the ratio of constant capital to variable capital is the same in both cases, even though in one case there may be more fixed and less circulating constant capital than in the other, or vice versa. The only difference here is the time of reproduction required by one half of the capital and by the total capital. One capitalist must invest a capital of £500 for 5 years before it is returned to him, the other, for a quarter of a year or a whole year. The ability to dispose of the capital is different. The amount advanced is the same but the time for which it is advanced is different. This difference does not concern us here. When one considers the total capital advanced, surplus value and profit are the same—£100 in the first year on the 1,000 advanced. In the second year, it is rather the fixed capital that has a higher rate of profit, since the variable capital has remained the same, whereas the value of the fixed capital has declined. The capitalist only advances 400 fixed and 500 variable capital in the 2nd year and receives a profit of 100 as he did before. But 100 on 900=11 $\frac{1}{9}$ %, while the other capitalist, if he continues to reproduce his capital, advances 1,000 as he did previously and makes a profit of 100=10%.

The position is different, of course, if, along with the fixed capital, the constant capital as a whole increases as compared with the variable, or if altogether more capital must be advanced in order to set the same amount of labour in motion. In the case discussed above, the question is not how often the total capital is returned or how large the advance is, but how often that portion is returned which is sufficient to set the same amount of productive labour in motion as that used in the other instance, in order to renew the process of production. However, if in the case cited above, the fixed capital were [not 500 but] 1,000 and the circulating capital only 500 [as previously], then matters would be

different. This, however, would not be due to the fact that it is fixed capital. For if the circulating part of the constant capital in the second case were to amount to 1,000 [instead of 500] (because of the dearness of [raw] materials, for example), then the result would be the same. Since in the first examples [of the two cases] the larger the fixed capital, the greater the relative size of the capital advanced as a whole to the variable capital, these two factors are often confused. Moreover, the whole business of the turnover was in fact originally derived from mercantile capital, where it is determined by different laws. In the case of mercantile capital, as I have demonstrated,¹⁷⁴ the rate of profit is indeed determined by the AVERAGE number of turnovers, regardless of the composition of this type of capital which, incidentally, consists mainly of circulating capital. For in the case of mercantile capital, profit is determined by the GENERAL RATE OF PROFIT.//

[XVIII-1119] // The point is this. If the fixed capital = x , and it turns over only once every 15 years, then $\frac{1}{15}$ of it is turned over in a single year, but likewise only $\frac{1}{15}$ needs to be replaced each year. It would make no difference at all if it were replaced 15 times in a year. Its mass would still be the same as before. The product would only become dearer as a result. But it is more difficult to dispose of it and the risk of depreciation is greater than if the same amount of capital were advanced in the form of circulating capital. But this does not affect the *surplus* in any way, although it does enter into the capitalists' calculation of the *rate of profit* since this risk is included in the calculation of the depreciation. As far as the other part of capital is concerned, let us assume that the circulating part of constant capital—*matières brutes* and *matières instrumentales*—amounts to 25,000 a year and wages to 5,000. If it were returned only once during the year 30,000 would have to be advanced during the whole year, and if the surplus value were at the rate of 100% it would amount to 5,000, and profit at the end of the year would be 5,000 on 30,000, = $16\frac{2}{3}\%$ ($\frac{1}{6}$). If, on the other hand, the capital turns over five times during the year, then a capital advance of only 5,000 for constant circulating capital and 1,000 for wages will be sufficient. Surplus value will be 1,000, and for $\frac{5}{5}$ of a year 5,000. But this surplus value is made on a capital of £6,000, because more than this amount is never advanced. Profit would therefore be 5,000 on 6,000, or $\frac{5}{6}$, five times as much [as previously], that is, $83\frac{1}{3}\%$. (Disregarding fixed capital.) There is thus a very considerable difference in the rate of profit because, in fact, labour worth 5,000 is bought with a capital of 1,000 and raw materials, etc., worth

25,000 with a capital of 5,000. If the amounts of capital were equal in these cases of different rates of turnover, then only 6,000 need have been advanced in the first case, that is, only 500 a month, $\frac{5}{6}$ of which would have consisted of constant capital and $\frac{1}{6}$ of variable capital. This $\frac{1}{6}$ would = $83\frac{1}{3}$, on which surplus value at 100% would be $83\frac{1}{3}$, and this would amount in a year to $(83 + \frac{1}{3}) 12 = 12\frac{12}{3}$ (or 4) + 966 = 1,000. But 1,000 on 6,000 = $16\frac{2}{3}\%$. //

To return to Cherbuliez.

Sismondian:

"In so far as the economic progress of society is characterised by an absolute growth of productive capital and by a *change in the proportions* between the different elements of this capital, it offers the workers some advantages: 1) The greater productivity of labour, resulting especially from the use of machinery, brings about such a rapid growth of productive capital that despite the change that takes place in the proportion of the *approvisionnement* to the other elements of capital, this element nevertheless increases absolutely, which makes it possible not only to employ the same number of workers as before, but also an additional number, so that for the workers the result of progress *apart from some interruptions* means an increase in productive capital and in the demand for labour. 2) The greater productivity of capital tends to diminish the value of the whole mass of products considerably, thus placing them *within reach of the workers*, thereby increasing the range of enjoyments they are able to obtain" (l.c., [p.] 65).^a

On the other hand:

"1) However impermanent, however partial the temporary diminution of the *approvisionnement* which constitutes the price of labour may be, it produces harmful effects nevertheless. 2) The factors tending to promote the economic advance of society are for the most part accidental, independent of the will of the producing capitalist. The effects of these causes are therefore not permanent, etc." ([p.] 66). "3) It is not so much the *absolute* as the *relative* amount consumed by the worker which makes his lot happy or unhappy. What does it matter to the worker if he is able to obtain a few more products which formerly were inaccessible to him if *the number of products inaccessible to him has grown in even greater proportion, if the distance which separates him from the capitalist* has only increased, if his social position has deteriorated and become more disadvantageous? Apart from the consumption strictly necessary for the maintenance of our strength, *the value of our enjoyments is essentially relative*" ([p.] 67).

"People frequently forget that the wage labourer is a thinking man, endowed with the same capacities, impelled by the same motives as the working capitalist" ([p.] 67).

[XVIII-1120] "Whatever advantages a rapid growth in social wealth may bring to the wage workers, *it does not cure the causes of their poverty* ... they continue to be *deprived of all rights to capital and are consequently obliged to sell their labour and to renounce all claims to the products of that labour*" ([p.] 68). "This is the principal error of the law of appropriation ... the *evil lies in this absolute lack of any bond* between the wage worker and the capital which is set in motion by his industry" ([pp.] 68-69).

^a Marx quotes partly in German and partly in French.—Ed.

This last phrase about “*bond*” is written in the typical Sismondian manner and is quite silly to boot.

About the normal man [who is] equated with capitalist, etc., see ibid., pp. 74-76.

About the *concentration of capitals* and the elimination of the smaller capitalists (l.c., pp. 85-88).

“If in present circumstances real profit derives from the thrift of the capitalists, it could derive just as well from that of the wage earners” ([pp.] 88-89).

Cherbuliez

1) shares [James] Mill’s view that all taxes should be imposed [only] on rent¹⁷⁵ ([p.] 128) but since it is impossible

“to impose a tax which is levied only on rent and affects nothing but rent” [pp. 128-29],^a

since it is difficult to separate profit from rent and impossible when the landowner is himself the cultivator, Cherbuliez proceeds to

2) the real conclusion of the Ricardian theory:

“Why do people not take a step further and *abolish private ownership of land?*” ([p.] 129).^a “The landowners are idlers who are maintained at the public expense without any kind of benefit to industry or to the general welfare of society”. “What makes land productive is the capital employed in agriculture; the landowner contributes nothing to it; he only exists to pocket rent, which does not constitute a part of the profit on his capital, neither is it the product of labour nor that of the productive power of the soil, but the effect of the price of the agricultural products, which is increased by the competition of the consumers”, etc. ([p.] 129).^a “Since the elimination of the private ownership of land would in no way change the causes responsible for rent, rent would continue to exist, but the state would receive it, for all the land would belong to it and it would lease out arable sections of the land to private persons owning sufficient capital to exploit them” ([p.] 130).^a Rent would replace all state revenues. “Finally industry, liberated, released from all fetters, would take an unprecedented leap forward, etc.” ([p.] 130).^a

But how does this Ricardian conclusion agree with the pious Sismondian wish to place “bonds” on capital and capitalist production? How does it agree with the lamentation:

“Capital will ultimately rule the world if an upheaval does not halt the course which the development of our society is taking under the domination of the law of appropriation” ([p.] 152).^a “Capital will eliminate the old social distinctions everywhere in order to replace them by this simple classification of men into rich and poor, the rich, who enjoy themselves and rule, and the poor, who work and obey” ([p.] 153).^b “The general appropriation of *productive wealth and of the products* has always reduced the numerous class of proletarians to a position of subjugation and political impotence, but this appropriation was once combined with a system of restrictive laws which, by *impeding the development of industry and the accumulation of*

^a Marx quotes in French.—*Ed.*

^b Marx quotes partly in German and partly in French.—*Ed.*

capital, [XVIII-1121] placed limits on the growth of the class of the disinherited, restricted their civil rights within narrow bounds and thus in different ways rendered this class harmless. Today, capital has broken part of these fetters; it is preparing to break all of them" ([pp.] 155-56).^a "The demoralisation of the proletarians is the second result of the distribution of wealth"¹⁷⁶ ([p.] 156).

o) RICHARD JONES

- 1) REVEREND RICHARD JONES, *AN ESSAY ON THE DISTRIBUTION OF WEALTH, AND ON THE SOURCES OF TAXATION*, LONDON, 1831, PART I, RENT

Even this first work *ON RENT* is distinguished by what has been lacking in all English economists since Sir James Steuart, namely, a sense of the *historical* differences in modes of production. (Such a correct *DISTINCTION* of historical forms generally speaking is not contradicted by the very important archaeological, philological and historical *BLUNDERS* attributed to Jones. See, for example, *The Edinburgh Review*, VOL. LIV, Article IV.¹⁷⁷) He found that the modern economists after Ricardo define rent as *SURPLUS PROFIT*, a definition which presupposes that the *FARMER* is a capitalist (or a *FARMING CAPITALIST* who exploits the land), who expects *AVERAGE PROFIT* on the capital which he invests in this particular sphere, and that agriculture itself has been subordinated to the capitalist mode of production. In short, landed property is conceived only in its modern bourgeois form, that is, in the modified form which it has been given by capital, the dominant relation of production in society. Jones by no means shares the illusion that capital has been in existence since the beginning of the world.

His views on the origin of rent in general are summarised in the following passages:

"The *POWER* of the earth *TO YIELD*, even *TO THE RUDEST LABOURS OF MANKIND*, more than is necessary for the subsistence of the *CULTIVATOR* himself, enables him to pay a tribute: hence the origin of rent" ([p.] 4).

"*RENT* has usually originated in the **appropriation of [the] soil*, at a time when the bulk of the people must cultivate it on such terms as they can obtain, or starve, and when their scanty capital of implements, seeds, etc., being utterly insufficient to secure their maintenance in any other occupation than that of agriculture, is chained with them to the land by an overpowering necessity*" [p. 11].

Jones traces rent throughout all its changes, from its crudest form, performance of labour services, to modern *FARMER'S RENT*. He finds that everywhere a specific form of rent, i.e. of landed property, corresponds to a definite form of labour and of the

^a Marx quotes partly in German and partly in French.—Ed.

conditions of labour. Thus, LABOUR RENTS OR SERF RENTS, the CHANGE FROM LABOUR RENTS TO PRODUCE RENTS, METAYER RENTS, RYOT¹⁷⁸ RENTS, etc., are examined in turn, a development the details of which do not concern us here. In all previous forms, it is the landed proprietor, not the capitalist, who directly appropriates the *SURPLUS LABOUR* of other people. *Rent* (as the Physiocrats conceive it by *reminiscence*) appears historically (and still on the largest scale among the Asiatic peoples) as the general form of *surplus LABOUR*, of LABOUR performed without payment in return. The appropriation of this *SURPLUS LABOUR* is here not mediated by exchange, as is the case in capitalist society, but its basis is the forcible domination of one section of society over the other. (There is, accordingly, direct slavery, serfdom or political dependence.)

Since we are only considering landed property here in so far as an understanding of it contributes to an understanding of capital, we shall leave Jones' analysis and proceed directly to his result—which distinguishes him from, and shows his superiority over, all his predecessors.

But first a few INCIDENTAL REMARKS.

In discussing *forced labour* and the forms of serfdom (or slavery) which correspond to it more or less, [XVIII-1122] Jones *unconsciously* emphasises the two forms to which all *SURPLUS VALUE* (*SURPLUS LABOUR*) can be reduced. It is characteristic that, in general, real forced labour *displays in the most brutal form, most clearly, the essential features of wage labour.*

"Under these conditions" (where there is serf labour) "*rent* can only be increased either by the more skilful and effective utilisation of the labour of the TENANTRY" //RELATIVE *SURPLUS LABOUR*//, "this however is hampered by the inability of the PROPRIETORS AS A BODY TO ADVANCE THE SCIENCE OF AGRICULTURE, or by an increase in *the QUANTITY* of the LABOUR EXACTED, and in this case, while the LANDS of the PROPRIETORS will be better TILLED, those of the SERFS, from which labour has been withdrawn, all the worse" (i.e., CH. II, [p. 61]).

What distinguishes this book on *RENT* by Jones from his *SYLLABUS* to be mentioned in 2—is this: In the first work he proceeds from the various forms of landed property as a given fact; in the second, from the various forms of labour to which they correspond.

Jones also shows how different stages in the development of the productive power of social labour correspond to these different production relations.

Serf labour (just as slave labour) has this in common with wage labour, *quoad*^a *rent*, that the latter is paid in *labour*, not in *products*, still less in money.

^a In respect of.—Ed.

As far as "METAYER RENT" is concerned * "the *advance of stock* by the proprietor and the *abandonment of the management of cultivation to the actual labourers* shows the continued absence of an intermediate class of capitalists" (l.c., [p.] 74).

"Ryot rents are *produce rents paid by a labourer, raising his own wages from the soil, to the sovereign as its proprietor*" (Ch. IV, [p. 109]).* (In Asia especially.) "RYOT RENTS are often mixed up with LABOUR RENTS AND METAYER RENTS" ([p.] 136 sqq.). [Under this system] the sovereign is the chief LANDLORD. * "The prosperity or rather the *existence of [the] towns* in Asia proceeds entirely from the *local expenditure of [the] government*" * (l.c. [p. 138]).

* "*Cottier*¹⁷⁹ rents ... all rents *contracted to be paid in money*, by peasant tenants, extracting their own maintenance from the soil" * ([p.] 143). (Ireland.) "Over the greater part of the globe, no MONEY RENTS are paid" [l.c.].

"All these FORMS" (SERF, RYOT, METAYER, COTTIER, etc., in short, PEASANTS' RENTS) "PREVENT THE FULL DEVELOPMENT OF THE PRODUCTIVE POWERS OF THE EARTH. The *difference in the productiveness of the industry* depends *first*, on the QUANTITY OF CONTRIVANCE USED IN APPLYING MANUAL LABOUR, and *SECONDLY*, on the EXTENT to which the MERE PHYSICAL EXERTIONS ARE ASSISTED BY THE ACCUMULATED RESULTS OF PAST LABOUR, in other words, on the different * quantities of skill, knowledge and capital brought to the task of production. *Small number of the agricultural^a classes*. It is obvious that the relative numbers of persons who can be maintained without agricultural labour, *must be measured wholly by the productive powers of the cultivators...*" (Ch. VI [pp. 157-60]). "In England, the tenants who on the disuse of the labour of the serf tenantry took charge of the cultivation of the domains of the proprietors, were found on the land; they were *yeomen*" * ([p.] 166).

We now come finally to the point which is of decisive interest to us here—*FARMERS' RENTS*. It is here that Jones' superiority is most striking, for he shows that what Ricardo and others regard as the eternal form of landed property, is its bourgeois form, which, after all, only develops 1) when landed property has ceased to be the dominant relation in production and, consequently, in society; 2) when agriculture itself is carried on in a capitalist way, which presupposes the development of large-scale industry (AT LEAST OF MANUFACTURE) in the towns. Jones shows that rent in the Ricardian sense only exists in a [XVIII-1123] society the basis of which is the capitalist mode of production. As a consequence of the transformation of rent into surplus PROFIT, the *direct* influence of landed property on WAGES ceases, which, in other words, merely means that the landed proprietor ceases to be the *direct APPROPRIATOR OF SURPLUS LABOUR*, this role being now assumed by the capitalist. The relative size of the rent affects only the division of *SURPLUS VALUE BETWEEN CAPITALIST AND PROPRIETOR*, NOT THE EXACTION OF THAT SURPLUS LABOUR ITSELF. This conclusion in fact emerges from Jones' analysis, though it is not explicitly stated.

Jones marks a substantial advance on Ricardo, in his historical explanation as well as in the economic details. We shall follow his theory step by step. BLUNDERS, of course, occur.

^a Thus in the manuscript. Should be "non-agricultural".—Ed.

In the following passages, Jones correctly explains the historical and economic conditions under which $\text{rent} = \text{SURPLUS PROFIT}$, that is, the expression of *modern* landed property.

“Farmers’ rents can only exist when the most important relations of the different classes of society have ceased to originate in the ownership and occupation of the soil” ([p.] 185).

The capitalist mode of production begins with manufacture and only later subjugates agriculture.

“It is the artisans and the handicraftsmen who first range themselves under the management of capitalists” ([p.] 187).

“One of the immediate consequences of this system is the POWER OF MOVING AT PLEASURE THE LABOUR AND CAPITAL EMPLOYED IN AGRICULTURE, TO OTHER OCCUPATIONS”.

//And only with this POWER can there be any question of equalisation of AGRICULTURAL and INDUSTRIAL PROFITS.//

“While the TENANT was himself *a labouring peasant, forced, in the absence of other funds for his maintenance, to extract it himself from the soil,* he was chained to that soil by necessity; the LITTLE STOCK he might possess, *since it was not sufficient to procure him a maintenance unless used for the single purpose of cultivation, was virtually chained to the soil with its master.* With the CAPITALIST-MASTER this *dependence on the soil is broken;* and *unless as much can be gained by employing the working class on the land, as from their exertions in various other employments, which in such a state of society abound, the business of cultivation will be abandoned. Rent, in such a case, necessarily consists merely of surplus profits”* ([p.] 188). “RENT ceases to have any influence on *wages. When the engagement* of the *labourer is with a capitalist, this dependence on the landlord is dissolved*” ([p.] 188-89).

As we shall see later, Jones does not really explain how *SURPLUS PROFIT* arises, or rather, he explains it only in Ricardian fashion, i.e. BY THE DIFFERENCE IN THE DEGREES OF NATURAL FERTILITY OF DIFFERENT SOILS.

“When RENTS CONSIST OF SURPLUS PROFITS, there are 3 causes from which the rent OF A PARTICULAR SPOT OF GROUND may increase:

“1) AN INCREASE OF THE PRODUCE FROM THE ACCUMULATION OF LARGER QUANTITIES OF CAPITAL IN ITS CULTIVATION;

“2) the more efficient APPLICATION of CAPITAL ALREADY EMPLOYED;

“3) the capital and produce remaining the same, THE DIMINUTION of the SHARE of the PRODUCING CLASSES in that PRODUCE AND A CORRESPONDING INCREASE of the SHARE of the LANDLORD.

“These causes may COMBINE IN DIFFERENT PROPORTIONS” ([p.] 189).

We shall see what is involved by these different causes. First of all they all presuppose that rent exists as *SURPLUS PROFIT*; and then there is not the slightest doubt that cause 1) to which Ricardo alludes only once and then only incidentally,¹⁸⁰ is correct. When the capital employed in agriculture increases, the amount of rent increases as well, even though the *price of corn*, etc., does not rise

and no other CHANGE whatever takes place. It is clear that, in this case, the *price of land rises*, although corn prices do not and no CHANGE whatever takes place in them.

Jones declares rent on the *worst soil* to be monopoly price. He therefore restricts the real source of rent either to *monopoly price* (in the same way as Buchanan, Sismondi, Hopkins,¹⁸¹ and others) if it is *absolute rent* (not arising from differences in the fertility of the different kinds of soil) or to *differential rent* (in the Ricardian sense).

//*Ad vocem*^a *absolute rent*, let us take a *gold mine*. We assume that the capital employed=£100, the AVERAGE profit £10, rent £10, and that half the capital consists of constant capital (in this case, machinery and *matière instrumentale*) and half of variable capital. The £50 of constant capital means nothing more than that it contains the same amount of labour time as [XVIII-1124] is embodied in £50 worth of gold. That part of the product which=£50 therefore replaces this constant capital. If the rest of the product=£100 and if 50 workers are set to work with the £50 of variable capital then [the labour of] 50 workers (assuming a working day of 12 hours) must be expressed in £100 worth of gold, of which £50 goes to pay wages and £50 represents unpaid labour. The value of the products of all capitals of the same composition will then be 120; the product will then consist of 50*c* and 100, [the 100] corresponding to 50 working days, that is, 50*v* plus 50*c*. A capital of 100, utilising more constant capital and a smaller number of workers, would produce a product of less value. However, all ordinary industrial capitals, although the value of their products would, in these circumstances, amount to 120, would only sell them at their production price of 110. But in the case of the gold mine, this is impossible quite apart from the OWNERSHIP OF LAND, because in this case the value is expressed in the product in kind. A rent of £10 would therefore of necessity arise.//

"Corn CAN SELL at a *monopoly price*, that is, at a price which more than pays the COSTS and PROFITS OF THOSE WHO GROW IT UNDER THE LEAST FAVOURABLE CIRCUMSTANCES; or at such a price as will only *repay* the COMMON PROFITS. In the first case abstracting from all *difference of fertility in the soils cultivated, [the] *increased produce obtained by increased capital* (prices remaining the same) may increase the rents, in proportion to the increased capital laid out.* For example 10% be the ORDINARY RATE OF PROFIT. If the corn PRODUCED BY £100 CAN BE SOLD FOR 115, the rent would be £5. If *in the progress of improvement the capital employed on the same land were doubled, and the produce doubled, the £200 would yield 230* and *£10 would be rent, and the rent will be doubled*" ([p.] 191).

^a As regards.—Ed.

//This applies to ABSOLUTE RENT AS WELL AS TO DIFFERENTIAL RENT.//

"In small COMMUNITIES CORN may be constantly at a *monopoly price*... This is possible in LARGER COUNTRIES too, provided the increase of population keeps steadily ahead of the INCREASE OF TILLAGE. However monopoly price of corn is unusual in COUNTRIES of CONSIDERABLE EXTENT AND GREAT VARIETY OF SOIL. When prices rise steeply more lands are cultivated or more capital is laid out on the old lands, till the price hardly yields the ORDINARY PROFIT on the OUTLAY any longer. Then TILLAGE will STOP, and in such countries CORN is usually sold at a price *not more than sufficient to replace the capital employed under the least favourable circumstances and the ordinary rate of profit on it,* and the *rent paid on the better soils is then measured by the excess of their produce over that of the poorest soil cultivated by similar capitals*" ([pp.] 191-92). "All that is necessary to effect A RISE OF RENT OVER THE SURFACE of a country possessing SOILS of unequal goodness, is this: that the *better soils should yield to the additional capital employed upon them in the progress of cultivation, something more than the soils confessedly inferior to them; for then while [the] means can be found of employing fresh capital on any soil between the extremes A and Z, at the ordinary rate of profit, rents will rise on all the soils superior to that particular soil*" ([p.] 195). "Let A have been cultivated with [£]100 yielding annually 110, £10 being the ordinary profits, and B with 100 yielding £115 and C with 100 yielding £120 and so on to Z; the rent of B would be 5, and that of C 10. Let each of these qualities of soil be cultivated with [a capital of] £200. A will produce 220, B 230, C 240, etc., the rent of B, therefore, will have become 10, that of C 20, etc." ([p.] 193).

"The GENERAL ACCUMULATION of the capital employed in cultivation, *while it augments the produce of all gradations of soils, somewhat in proportion to their original goodness, must of itself raise rents* without *reference to any progressive diminution in the return to the labour and capital employed, and, indeed, quite independently of any other cause whatever*" ([p.] 195).

It is one of Jones' merits that he is the first who clearly brings out the fact that *once rent [is] supposed, its growth will on the whole //always supposing no revolutions in the mode of production// result from the augmentation of agricultural capital, of capital employed on land. "This may be the case not only if prices remain the same but even when they *fall* below their former *level".

[XVIII-1125] Rejecting the GRADUAL DIMINUTION of productivity [in agriculture], Jones remarks:

"The average corn produce of England at one time did not exceed 12 bushels per acre; it is now about double" ([p.] 199). "Each successive portion of capital and labour concentrated on the land may be more economically and efficiently applied than the last" ([pp.] 199-200).

"Rent will double, triple and quadruple, and so on, if the capital invested in the old land is doubled, tripled, quadrupled *without a diminished return, and without altering the relative fertility of the soils cultivated*" ([p.] 204).

This is therefore the first point on which Jones is in advance of Ricardo. ONCE RENT [is] SUPPOSED, IT MAY INCREASE BY THE MERE INCREASE OF THE AMOUNT OF CAPITAL EMPLOYED on the LAND, irrespective of *any change either in the relative fertility of the soils, or the returns of the

successive doses of capital employed, or any alteration whatever in the *price* of agricultural produce.*

Jones' next point is this:

* "It is not essential to the rise, that the *proportion between the fertility of the soils* should be exactly *stationary*"* ([p.] 205).

(Here Jones overlooks the fact that, conversely, an *increasing* * *disproportion*, even when the whole agricultural capital is more productively employed, must and will increase the amount of the differential rent. A *diminution*, on the contrary, in the differences of the fertility of the various soils must diminish the differential rent, i.e. rent flowing from *those differences*. [By] taking away the cause you take away the effect. Still rent (apart from absolute rent) may increase, but* in that case *only in consequence of an increase of the agricultural capital employed.*)

"Ricardo had overlooked the NECESSARILY *UNEQUAL EFFECTS OF ADDITIONAL CAPITAL ON SOILS OF UNEQUAL FERTILITY*" (l.c.).

(This means nothing more than *that the employment of additional capital adds to the differences of relative fertility, and, in that way, to differential rent.*)

"If numbers, BEARING A CERTAIN PROPORTION TO EACH OTHER, are multiplied by the same number, the proportion will be the same as that of the original numbers, yet THE *DIFFERENCES between THE AMOUNTS OF THE SEVERAL PRODUCTS* WILL INCREASE AT EACH STEP OF THE PROCESS. If 10, 15, 20, be multiplied by 2 or 4, and become 20, 30, 40, or 40, 60, 80, THEIR RELATIVE PROPORTIONS WILL NOT BE DISTURBED: 80 and 60 bear the same proportion to 40, as 20 and 15 do to 10, but the *difference BETWEEN THE AMOUNTS OF THEIR PRODUCTS* WILL HAVE INCREASED AT EACH OPERATION, AND FROM BEING 5 AND 10, BECOME 10 AND 20, AND THEN 20 AND 40" ([pp.] 206-07).

This law works out simply as follows:

1) 10, ⁵	15, ¹⁰	20.	The difference	5 [and 10].	Sum of the differences	15.
2) 20, ¹⁰	30, ²⁰	40.	" "	10 [and 20].	" "	30.
3) 40, ²⁰	60, ⁴⁰	80.	" "	20 [and 40].	" "	60.
4) 80, ^[40]	120, ^[80]	160.	[" "	40 and 80.	" "	120.]

The difference between the terms is doubled in 2 and quadrupled in 3. The sum of the differences is likewise doubled in 2 and quadrupled in 3.

This therefore is the 2nd law. The *first law* (applied by Jones only to DIFFERENTIAL RENT) is that the amount of rent increases with the increase of the amount of capital employed. If rent is 5 for 100, then it is 10 for 200.

[XVIII-1126] The *second law*. *All other circumstances remaining the same, the proportional difference between the capitals

employed on different soils remaining the same, the *amount of that difference*, and hence the amount of the aggregate rent or the sum of those differences, increases with the absolute quantity of that difference resulting from the increase of the capitals employed.* Hence the *second law* is: The amount of differential rent increases in proportion as the differences of the products increase when the relative FERTILITY remains the same, but CAPITAL EMPLOYED ON THE DIFFERENT SOILS is increased uniformly.

Further: "If [£]100 BE EMPLOYED ON CLASSES A, B AND C, with a PRODUCE of 110, 115, and 120, and SUBSEQUENTLY 200, with RETURNS of 220, 228 and 235, *the relative differences of the products will have diminished, and the soils will have *approximated in fertility*, still the *difference* of the AMOUNTS of their PRODUCTS* WILL BE INCREASED FROM 5 AND 10 to 8 and 15, and RENTS will have risen accordingly. *Improvements, therefore, which tend to approximate the degrees of fertility of the cultivated soils, may very well raise rents,* and that without the cooperation of any other cause" ([p.] 208). "The *turnip and sheep husbandry and the fresh capital employed to carry it on, produced a greater alteration in the fertility of the poor soils than in that of the better; still it increased the *absolute produce of each*, and,* therefore, RAISED RENTS, while it diminished the DIFFERENCES in the FERTILITY of the SOILS CULTIVATED" (l.c.). "With regard to Ricardo's view that improvements may cause rents to fall, [it is only necessary] *to remember the slowly progressive manner in which agricultural improvements are practically discovered, completed and spread*" ([p.] 211).

//This last passage is only of practical interest and does not affect the problem as such, but refers only to the fact that these IMPROVEMENTS do not proceed so rapidly AS TO CONSIDERABLY AUGMENT SUPPLY IN REGARD TO DEMAND AND THUS TO REDUCE MARKET PRICES.//

Originally we have:

a) b) c)

1) 10, 15, 20. The CAPITAL EMPLOYED IN EACH CLASS=100. The PRODUCT=110, 115, 120. The *difference*=5+10=15. ON ACCOUNT OF improvements made, twice as much capital is employed, [£]200 instead of 100 IN EACH CLASS a), b) and c); but this CAPITAL has a different effect in the DIFFERENT CLASSES and the products yielded=220 (that is, double that of a)), 228 and 235. Thus:

a) b) c)

2) 20, 28, 35. The CAPITAL EMPLOYED IN EACH CLASS=200. The PRODUCT=220, 228 and 235. The *difference*=8+15=23. But the rate OF DIFFERENCE has been reduced. 5:10 (i.e. [the ratio of the differences] b—a [to a] in 1)= $\frac{1}{2}$ and 10:10=1, whereas 8:20=only $\frac{8}{20}=\frac{4}{10}=\frac{2}{5}$ and $15:20=\frac{15}{20}=\frac{3}{4}$. The rate of difference has declined but its AMOUNT has increased. This does not, however, constitute a new law, but only shows that the INCREASE OF CAPITAL EMPLOYED leads to an INCREASE in RENT as in the first law, although the INCREASE in a, b, c is not proportional to their ORIGINAL DIFFERENCES OF

FERTILITY. If prices were to fall as a consequence of this increased fertility (which is however [relatively] diminished fertility for b and c, for otherwise their product would have to be 230 and 240 respectively), it would by no means be necessary for the rent to rise or even to remain stationary.

[XVIII-1127] As a consequence, a SEQUEL, of the 2nd law, a further APPLICATION of it can be considered:

The *third law*:

If *"improvements in the efficiency of the capital employed in cultivation increase the *surplus profits* realised on particular spots of land, they increase rent"* [p. 244].

The following passages by Jones (TOGETHER with the earlier ones) refer to this:

"Thus the first source of a rise OF FARMERS' RENTS are *the *progressive accumulation and the unequal effects of capital on all gradations of soil**" ([p.] 234).

//This, however, can only refer to IMPROVEMENTS which RELATE DIRECTLY TO THE FERTILITY OF THE SOIL AS, FOR INSTANCE, MANURES, ROTATION OF CROPS, etc.//

*"Improvements in the efficiency of the capital employed in cultivation, raise rents by increasing the *surplus profits realised on particular spots of land*. They invariably produce this increase of surplus profit, *unless they augment the mass of raw produce so rapidly as to outstrip the progress of demand*. Such improvements in the efficiency of the capital employed, do usually occur in the progress of agricultural skill, and of the accumulation of *greater masses of auxiliary capital*"* (constant capital). *"A rise of rents from this cause, is generally followed by the *spread of tillage to inferior soils*, without any decrease in the returns to agricultural capital on the worst spots reclaimed"* ([p.] 244).

//Jones very correctly declares that A FALL in PROFITS *does not prove* [the decreasing efficiency of] AGRICULTURAL INDUSTRY (alias the FALL in the price of AGRICULTURAL PRODUCE). But he himself explains most inadequately how such a fall can come about. [According to him] either the amount produced OF ITS DIVISION BETWEEN LABOURERS and CAPITALISTS may CHANGE. Jones has as yet no idea of the real law of declining rate of profit.

*"A fall of profits is no proof of the decreasing efficiency of agricultural industry" ([p.] 257). "Profits depend partly on the *amount* of the produce of labour, partly on the *division* of that produce between the labourers and capitalists;* and their AMOUNT, therefore, might VARY FROM A CHANGE IN EITHER OF THESE PARTICULARS" ([p.] 260).

This is the reason for the incorrect law which he elaborates:

"When, abstracting from the effects of taxation, an apparent diminution takes place in the revenue of the producing classes considered jointly" //what revenue means is not explained here, [whether] VALUE IN USE or VALUE IN EXCHANGE, AMOUNT OF PROFIT or RATE [of profit]//, "WHEN THERE IS A FALL IN THE RATE OF

PROFITS, NOT COMPENSATED BY A RISE OF WAGES, and vice versa," //that is precisely what Ricardo's law says, and it is wrong// "THERE HAS BEEN, it may be argued, SOME DECREASE IN THE PRODUCTIVE POWER OF LABOUR AND CAPITAL" ([p.] 273).

Jones correctly grasps that a *relative increase* [in the value] of * industrial produce as compared to [that of] agricultural produce^a may take place in the progress of society, although, in point of fact, agriculture is progressing absolutely.*

*"In the progress of nations, an increase of manufacturing power and skill usually occurs, *greater* than that which can be expected in the agriculture of an increasing people. This is an unquestionable truth. A *rise in the relative value of raw produce* may, therefore, be expected in the advance of nations, *without any positive decrease* in the efficiency of agriculture"* ([p.] 265).

But this does not explain the *positive* rise in the *money prices* of RAW PRODUCE, UNLESS A FALL IN THE VALUE OF GOLD TAKES PLACE which *in manufacture is balanced and overbalanced by the still greater fall in [the value of] the commodities produced, while it is not so balanced in agriculture. This may happen, even [XVIII-1128] if no general fall in the value of gold (money) takes place, but when a particular nation, for instance, buys more money* with a DAY'S WORK than THE COMPETING NATIONS DO.

Jones explains his reasons for *not* believing that in England the Ricardian law operates, the abstract possibility of which he does admit HOWEVER.

"If rents should ever rise from the cause stated by Mr. Ricardo,^b *'the employment of an additional quantity of labour with a proportionally less return', and a consequent transfer to the landlords of a part of the produce obtained on the better soils, then the *average proportion of the gross produce* taken by the landlords as rent, will necessarily increase.* Secondly,^c the *industry of a larger proportion of the population must be devoted to agriculture*" ([pp.] 280-81).

(This last statement is not quite correct. *It is possible that [a] greater portion of secondary labour is employed—more commodities procured by industry and commerce enter the agricultural process, without the gross produce being augmented proportionally, and without more immediate labour being employed. There may be even less employed.*)

"The statistical history of England presents to us 3 facts: *A spread of tillage* accompanied *by a rise in the general rental of the country. A diminution of the proportion of people employed in agriculture. A decrease in the landlord's proportion of the produce*" ([p.] 282).

^a Thus in the manuscript. The passage should presumably read: "a *relative increase* [in the value] of agricultural produce as compared to [that] of industrial produce".—Ed.

^b See D. Ricardo, *On the Principles of Political Economy, and Taxation*, p. 60.—Ed.

^c Jones has "Firstly".—Ed.

(This last development, just as the decline in the rate of profit, is due to the increase in that part of the product which replaces constant capital. At the same time, rent can increase in both AMOUNT and value.)

"Adam Smith says: *'In the progress of improvement, rent, though it increases in [proportion to the] extent, diminishes in proportion to the produce of the land'*" ([p.] 284).^a

Jones calls constant capital "AUXILIARY CAPITAL".

"It appears from various RETURNS made AT DIFFERENT TIMES to the BOARD OF AGRICULTURE, that the whole capital AGRICULTURALLY EMPLOYED in England, IS TO THAT APPLIED TO THE SUPPORT OF LABOURERS, as 5 to 1; that is, there are 4 times as much AUXILIARY CAPITAL USED, AS THERE IS OF CAPITAL APPLIED TO THE MAINTENANCE OF THE LABOUR USED DIRECTLY IN TILLAGE. In FRANCE, this ratio=2:1" ([p.] 223). *'"When a given quantity of additional capital is applied in the shape of the results of past labour, to assist the labourers actually employed, a less annual return will suffice to make the employment of such capital profitable,* and, therefore, *permanently practicable, than if the same quantity of fresh capital were expended in the support of additional labourers"* ([p.] 224). "Let us suppose £100 EMPLOYED upon the soil IN THE MAINTENANCE OF 3 MEN, PRODUCING THEIR OWN WAGES, and 10% profit on them, OR £110. Let the capital employed be doubled. And first let the fresh capital support 3 additional LABOURERS. The INCREASED PRODUCE must equal £110=the WAGES of 3 ADDITIONAL MEN+£10 profit. Next let the same ADDITIONAL £100 be EMPLOYED IN THE SHAPE OF IMPLEMENTS, MANURES, OR ANY RESULTS OF PAST LABOUR, while the NUMBER of ACTUAL LABOURERS remains the same. Let this AUXILIARY CAPITAL last on the average 5 years: the ANNUAL RETURN to repay the capitalist must be 10% PROFIT, and £20 the ANNUAL WEAR AND TEAR OF HIS CAPITAL: or £30 will be the annual RETURN, necessary TO MAKE THE CONTINUOUS EMPLOYMENT of the second £100 PROFITABLE, instead of £110, THE AMOUNT NECESSARY WHEN DIRECT LABOUR WAS EMPLOYED BY IT. It will be obvious, therefore, that the ACCUMULATION OF AUXILIARY CAPITAL IN CULTIVATION, WILL BE PRACTICABLE WHEN THE EMPLOYMENT of the same *amount of capital in the support of additional labour has ceased to be so, and that the accumulation of such capital may go on for an indefinite period*" ([pp.] 224-25). "Thus the *increase of auxiliary capital both increases the command of man over the powers of [the] soil, relatively to the amount of [XVIII-1129] labour directly or indirectly employed upon it; and diminishes the annual return necessary to make the progressive employment of given quantities of fresh capital profitable*" ([p.] 227). "If we suppose any capital, £100 for instance, EMPLOYED UPON THE SOIL, wholly in paying the wages of labour, and YIELDING 10% PROFIT, the revenue of the FARMER will= $\frac{1}{10}$ that of the LABOURERS. If the capital be trebled, etc., then the REVENUE of the FARMER WILL CONTINUE TO BEAR THE SAME PROPORTION TO THAT OF THE LABOURERS. But if the number of labourers remaining the same, the AMOUNT OF CAPITAL IS DOUBLED, PROFITS become £20, or $\frac{1}{5}$ of the revenue. If the capital be quadrupled, profits become £40, or $\frac{2}{5}$ of the revenue of the LABOURERS; if the CAPITAL be increased to £500, PROFITS would become £50, OR HALF THE REVENUE of the LABOURERS. And the WEALTH, the INFLUENCE, and probably to some extent, the numbers of the CAPITALISTS IN THE COMMUNITY, WOULD BE PROPORTIONALLY INCREASED... A great

^a A. Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, Vol. 1, London, 1835, p. 406.—Ed.

increase of capital usually makes the *EMPLOYMENT OF SOME ADDITIONAL DIRECT LABOUR* necessary. *THIS CIRCUMSTANCE, HOWEVER, WILL NOT PREVENT THE STEADY PROGRESS OF THE RELATIVE [increase] OF THE AUXILIARY CAPITAL*" ([pp.] 231-32).

The first important point in this passage is that, with the increase in capital, the *AUXILIARY CAPITAL* increases in comparison to the variable capital, in other words, that the latter declines *relatively* in comparison with the constant capital.

The fact that the *ANNUAL RETURNS* decline in proportion to the capital advanced if there is an increase in that part of the *AUXILIARY CAPITAL* which consists of fixed capital, that is, if its turnover period extends over several years—its value only entering into the product annually in the form of depreciation—is not a phenomenon peculiar to agriculture, but a general one. Although, in industry, the raw material worked up during the year increases even more rapidly than the size of the fixed capital. Compare, for example, the amount of raw cotton which a *MULE JENNY* consumes weekly or annually with that used up by a spinning wheel. But suppose, for example, that in (large-scale) tailoring the same amount of raw material in terms of *value* is worked up (although not the same physical amount, the raw material being dearer than that used in spinning), then the annual *RETURN* in tailoring will be considerably larger than in spinning, because a large part of the (fixed) capital laid out in the latter only enters into the product as annual depreciation.

The *value* of the annual *RETURN* in agriculture (where what one can regard as the raw material, the seed, does not increase in the same proportion as the other elements of constant capital, especially fixed capital) is naturally smaller if the capital increases as a result of an increase in the constant capital only and not in the variable. For the variable capital must be entirely replaced in the product, the other [constant capital] only as an annuity in so far as it is consumed annually. If it is assumed that the *price of grain* is given, when a $qr = £2$,^a 220 qrs are required to replace a variable capital of 100 at a profit of 10%, whereas only 60 qrs (=£30) are required to replace a wear and tear amounting to £20 and a profit of £10. A smaller absolute *RETURN* yields the same profit (as is the case in industry in similar circumstances). Jones' reasoning, however, contains several *FALLACIES*.

D'abord, it cannot be asserted (on the assumptions *made*) that the *PRODUCTIVE POWERS OF THE SOIL* have increased. They have increased in comparison with *THE LABOUR EMPLOYED DIRECTLY*, BUT NOT COMPARED WITH

^a Thus in the manuscript. Presumably, it should be "10s."—Ed.

THE GENERAL CAPITAL EMPLOYED. All that can be said is that less GROSS PRODUCE is necessary in order to yield the same NET PRODUCE, i.e. the same profit as before.

[XVIII-1130] Further, the increase in the FARMER'S revenue in comparison to *that of the LABOURERS* is important in this *special* sphere in so far as here the part of the total product WHICH GOES TO PROFIT INCREASES AND GOES ON INCREASING RELATIVELY TO THAT PART WHICH GOES TO THE LABOURERS. As a result, the WEALTH and INFLUENCE of the FARMING CAPITALIST AS COMPARED TO HIS LABOURERS undoubtedly grow and expand. But Jones seems to make the following calculation: [£] 10 on 100 is $\frac{1}{10}$. £20 on £120 (i.e. 100 expended in labour and 20 depreciation) = $\frac{1}{6}$ and the £20 is $\frac{1}{5}$ of the sum paid out to the workers, etc. But nothing is more fallacious than that, GENERALLY SPEAKING, the rate of profit can increase while the amount of capital laid out on labour declines. Exactly the opposite takes place. Proportionally less SURPLUS VALUE is produced and the rate of profit therefore falls. As regards the FARMER specifically (and also each particular enterprise taken in isolation) the rate of profit may remain the same whether he employs 3 or 6 workers with a capital of 200.

The fact that rent = SURPLUS PROFIT, i.e. the excess over and above the AVERAGE PROFIT, presupposes not only that agriculture is *formally* subordinated to capitalist production, but also that equalisation of rates of profit takes place in the various spheres of production, specifically between agriculture and industry. Otherwise rent may be equal to a SURPLUS *over* WAGES (which is also profit). It may even represent a PART OF PROFIT OR be a DEDUCTION FROM WAGES.

- 2) RICHARD JONES, AN INTRODUCTORY LECTURE ON POLITICAL ECONOMY, DELIVERED AT KING'S COLLEGE, LONDON, 27TH FEBRUARY, 1833. TO WHICH IS ADDED A SYLLABUS OF A COURSE OF LECTURES ON THE WAGES OF LABOUR, LONDON, 1833

* "Property in the soil almost universally rests, at one time of a people's career, either in the general government, or in persons deriving their interest from it" ([p.] 14).

"By economical structure of nations, I mean those relations between the different classes which are established in the first instance by the institution of property in the soil, and by the distribution of its surplus produce; afterwards modified and changed (to a greater or less extent) by the *introduction of capitalists* as agents in producing and exchanging wealth, and in feeding and employing the labouring population" * ([pp.] 21-22).

//The reason Mr. Senior—whose *OUTLINE* appeared at approximately the same time as Ramsay's *ESSAY ON THE DISTRIBUTION OF WEALTH*, in which latter work the division of profit into "profit OF ENTERPRISE"

and into "NET PROFITS OF CAPITAL OR INTEREST" (CH. IV) is dealt with at length—is supposed to have discovered this division, which was already known in 1821 and 1822, can be explained only by the fact that Senior—a mere apologist of the existing order and consequently a vulgar economist—is very congenial to Mr. Roscher.^{182//}

By "LABOUR fund" Jones understands

*"the aggregate amount of the revenues consumed by the labourers, whatever be the source of those revenues" * ([*Syllabus*, p.] 44).

The main point (the term LABOUR fund probably comes from Malthus?¹⁸³) in Jones' work is that the whole economic structure of society revolves around the *form of labour*, in other words, the form in which the worker appropriates his means of subsistence, or that part of his product UPON WHICH HE LIVES. This LABOUR fund has various forms and *capital* is merely one of them, it is a form which arises rather late in the historical development. It is only in Jones' work that the important differentiation—between labour that is paid out of capital and labour paid directly out of revenue—made by Adam Smith receives the full elaboration of which it is capable and becomes a major key for understanding the various economic structures of society. And with it disappears the absurd notion that, because in capital the worker's revenue first takes the form of something appropriated, alias *saved*, by the capitalist, this signifies more than a formal difference.

"Even among the West European NATIONS we still find the EFFECTS of the *social conformation which results from the peculiar mode of distributing the produce of their land and labour, established [XVIII-1131] in the early period of the existence of agricultural nations * //namely A CLASS OF AGRICULTURAL LABOURERS, secondly LANDLORDS, thirdly MENIALS, RETAINERS and ARTISANS who participate in the consumption of the REVENUE of the LANDLORDS either directly or indirectly!" ([*An Introductory Lecture*, p.] 16). "*Capital*, that is, ACCUMULATED WEALTH EMPLOYED WITH A VIEW TO PROFIT is the GREAT AGENT, the motive POWER which causes the CHANGES that take place in THIS ECONOMIC CONFORMATION". ... "Among all NATIONS, you will find THE DISTINCT DIVISION OF WEALTH HERE POINTED OUT, acting * a most important part in modifying the ties which connect the different classes of the community, and in determining their productive power...* In Asia and in part of Europe (it was formerly the case throughout Europe) the NON-AGRICULTURAL CLASSES are almost wholly maintained from the INCOMES of the other CLASSES, principally from the incomes of the *landholders. If you want the labour of an artisan, you provide him with materials; he comes to your house, you feed and pay him his wages. After a time, the capitalist steps in, he provides the materials, he advances the wages of the workman, he becomes his employer, and is the owner of the article produced, which he exchanges for your money ... an intermediate class* appears between the LANDOWNERS and a portion of the NON-AGRICULTURISTS, upon which *intermediate class those non-agriculturists are dependent for employment and subsistence. The ties which formerly bound the community together are worn out and fall to pieces; other bonds, other principles of cohesion, connect its

different classes: *new economical relations* spring into being, etc. ...* Here in England not only the *great body of non-agriculturists almost wholly depend on the pay of capitalists, but the labouring cultivators of the soil are their servants too*" ([p.] 16 sqq.).

The *Syllabus of a Course of Lectures on the Wages of Labor* differs from the book ON RENT in this: The book examines the different forms of landed property to which different SOCIAL FORMS OF LABOUR correspond. In the *Syllabus*, these DIFFERENT FORMS OF LABOUR are the point of departure and both the different forms of landed property and CAPITAL are regarded as their OFFSPRING. The determinate social form of the worker's labour corresponds to the form which the conditions of labour—that is, in particular, the land, nature, since this relationship embraces all others—assume in respect of the worker. But the former is in fact merely the objective expression of the latter.

We shall see, therefore, that the different forms of the LABOUR fund correspond to the different ways in which the worker confronts his own conditions of production. The manner in which he appropriates his product (or part of it) depends on his relations to his conditions of production.

"The LABOUR fund," says Jones, "may be divided into 3 classes: 1) REVENUES which are produced by the LABOURERS who consume them, and never belong to any other persons" //in this case, quite irrespective of the *particular* form, the worker must in fact be the owner of his instruments of production//; 2) "REVENUES BELONGING TO CLASSES DISTINCT FROM THE LABOURERS, AND EXPENDED BY THOSE CLASSES IN THE DIRECT MAINTENANCE OF LABOUR"; 3) "*Capital* in its proper sense. These DISTINCT BRANCHES of the LABOUR fund may all be observed in OUR OWN COUNTRY; but WHEN WE LOOK ABROAD, WE SEE THOSE PARTS of that fund, which are the most limited here, CONSTITUTING ELSEWHERE THE MAIN SOURCES OF SUBSISTENCE TO THE POPULATION AND DETERMINING THE CHARACTER AND POSITION OF THE MAJORITY OF THE PEOPLE, etc." ([pp.] 45-46).

Ad a). "The WAGES OF LABOURING CULTIVATORS, OR OCCUPYING PEASANTS. These LABOURING CULTIVATORS OR PEASANTS are HEREDITARY OCCUPIERS, PROPRIETORS, TENANTS. The TENANTS are SERFS, METAYERS, COTTIERS. The last peculiar to Ireland. Something resembling RENT or profit is often mixed up with the REVENUES OF PEASANT CULTIVATORS OF ALL CLASSES, but WHEN THEIR SUBSISTENCE IS ESSENTIALLY DEPENDENT ON THE REWARD OF THEIR MANUAL LABOUR, they may be regarded as WAGE LABOURERS.

"Thus, among the LABOURING PEASANTS there are:

"α) HEREDITARY OCCUPIERS, WHO ARE LABOURING [XVIII-1132] CULTIVATORS. ANCIENT GREECE. MODERN ASIA, more especially INDIA.

"β) PROPRIETORS. FRANCE, GERMANY, AMERICA, AUSTRALIA, Ancient Palestine.

"γ) COTTIERS" ([*Syllabus*, pp.] 46-48).

The characteristic feature [of these groups] is that the worker reproduces the LABOUR fund for himself. It is *not transformed into capital*. Just as the worker directly produces the labour fund, so he appropriates it directly, although his SURPLUS LABOUR may be

appropriated either wholly or in part by him himself or may be appropriated entirely by other classes, depending on the particular form which his relation to his conditions of production assumes. It is entirely due to economic prejudice that Jones describes this category as WAGE LABOURERS. Nothing which characterises WAGE LABOURERS exists amongst them. It is a pretty bourgeois economic fancy that, because that part of the product which the worker appropriates to himself under capitalism appears as WAGES, the part of his product which the worker himself consumes must be WAGES.

Ad b. "In England [the labourers are] limited to *menial servants, soldiers, sailors,* and *a few artisans working on their own account, and paid out of the incomes of their employers. Over a considerable portion of the earth this branch of the General Labour Fund maintains nearly the whole of the non-agricultural labourers. Former prevalence of this Fund in England. Warwick the king-maker.¹⁸⁴ The English gentry. Present prevalence in the East. Mechanics, menials. Large bodies of troops so maintained. Consequences of the concentration of this Fund throughout Asia in the hands of the sovereign. Sudden rise of cities. Sudden desertion. Samarcand; Candahar and others*" ([pp.] 48-49).

Jones overlooks two main forms: The Asiatic communal system with its unity of agriculture and industry. And secondly, the urban craft guild system of the Middle Ages, [which] also existed partially in the Ancient World.

Ad c. *"*Capital* should never be confounded with the *General Labour Fund* of the World, of which a large proportion consists of revenues. All branches of a nation's revenues ... contribute to the accumulations by which capital is formed. They contribute in different proportions in different countries and different stages of society. When wages and rents contribute the most"* ([p.] 49 sqq.).

Because SURPLUS LABOUR is converted into capital (instead of being exchanged directly as revenue for labour), capital seems to appear as something *saved* out of revenue. Jones considers it mainly from this point of view. And in THE PROGRESS OF SOCIETY the great mass of capital does, in fact, consist of revenue reconverted in this way. But in the capitalist production the original LABOUR FUND itself likewise appears as something *saved* by the capitalist. The reproduced LABOUR FUND does not remain in the possession of the worker as in case a), but appears as the property of the capitalist and confronts the worker as the property of *someone else*. And this POINT is not elaborated by Jones.

What Jones has to say about the RATE OF PROFITS and its influence on accumulation in the COURSE [of Lectures] is rather inadequate:

*"*All other things being equal*, the power of a nation to save from its profits varies with the *rate of profits*: is great when they are high, less when low; but as the rate of profits declines, *all other things do not remain equal*. The *quantities of capital employed relatively to the numbers of [the] population may increase.*"*

//What Jones does not understand is how, as a result of the **“may”* increase, the rate of profit sinks *because* “the quantities of capital employed relatively to the numbers of [the] population have increased”.* But he approaches close to the correct view.//

“Inducements and facilities to accumulate may increase... A low rate of profit is ordinarily accompanied by a rapid rate of accumulation, relatively to the numbers of [the] people as in England; and a high rate of profit by a slower rate of accumulation, [XVIII-1133] relatively to the numbers of [the] people,* as in Poland, Russia, India, etc.” ([p.] 50 sqq.).

Where the rate of profit is high (apart from cases where, as in North America, there is capitalist production on the one hand and, on the other hand, the VALUE OF ALL AGRICULTURAL PRODUCE IS LOW) it is GENERALLY due to the fact that capital consists PRINCIPALLY of variable capital, that is, direct labour predominates. Assume a capital of 100, of which $\frac{1}{5}$ is variable capital. And assume further that the SURPLUS LABOUR amounts to $\frac{1}{3}$ of a working day. In this case, profit=10%. Assume that $\frac{4}{5}$ [of the capital] consists of variable capital and that SURPLUS LABOUR= $\frac{1}{6}$ of the working day. In this case, profit would=16%.

“ERROR of the DOCTRINE, that whenever, in the progress OF NATIONS, the *rate of profits* declines, the means of providing subsistence for an increasing population must be becoming less. Foundations of this error: 1) A mistaken notion, that accumulation from profits must be slow where the rate of profits is low, and rapid where it is high. 2) A mistaken belief, that profits are the only source of accumulation. 3) A mistaken belief that all the labourers of the earth subsist on accumulations and *savings from revenue*, and never on *revenue itself*” (l.c.).

“Alterations which take place in the economical structure of nations when capital assumes the task of advancing the wages of labour... The amount of capital devoted to the maintenance of labour may vary, independently of any changes in the whole amount of capital.” //This proposition is important.// **“...Great fluctuations in the amount of employment, and great suffering, may sometimes be observed to become more frequent as capital itself becomes more plentiful ... Periods of gradual transition of the labourers from dependence on one fund to dependence on another... Transfer of the labouring cultivators to the pay of capitalists... Transfer of non-agricultural classes to the employ of capitalists”** (l.c.).

What Jones calls “TRANSFER” here, is what I call “primitive accumulation”. This is merely a formal difference. It is also in contradiction to the absurd notion of “SAVINGS”.

“Slavery. Slaves may be divided into pastoral—praedial—domestic—slaves of a mixed character, between praedial and domestic. We find SLAVES as CULTIVATING PEASANTS, as *menials or artisans, maintained from the incomes of the rich, as labourers maintained from capital”* ([p.] 59).

But so long as slavery is predominant, the capital-relation can only be sporadic and subordinate, never dominant.

3) RICHARD JONES, *TEXT-BOOK OF LECTURES
ON THE POLITICAL ECONOMY OF NATIONS*, HERTFORD, 1852¹⁸⁵

*“The productiveness of the industry of nations really depends on 2 circumstances: First, on the *fertility or barrenness of the original sources*” //land and water// “of the wealth they produce. Secondly, on the *efficiency of the labour* they apply in dealing with those sources, or fashioning the commodities obtained from them” ([p.] 4).

“The *efficiency of human labour* will depend: 1) *on the continuity* with which it is exerted; 2) *on the knowledge and skill* with which it is applied, to effect the purpose of the producer; 3) *on the mechanical power* by which it is aided” ([p.] 6).

“The *power* exerted by human labourers in producing wealth ... may be increased: 1) by enlisting in their service, *motive forces* greater than their own..., 2) by employing any amount or kind of motive [XVIII-1134] forces at their command *with an increased mechanical advantage*.* For example, an ENGINE OF 40 HORSEPOWER on a railway has a different effect to one on a TURNPIKE ROAD” ([p.] 8). * “The best form of a plough will do as much work, and as well, with two horses, as the worst with four” ([p.] 9).

“The steam engine is not a mere *tool*, it gives *additional motive force*, not merely the *means of using forces* the labourer already possesses, *with a greater mechanical advantage*” * ([p.] 10, note).

This is, therefore, according to Jones, the difference between a TOOL and MACHINERY. The former provides the worker with means for employing the power he possesses to a greater mechanical advantage, the latter provides an increase of MOTIVE FORCE. (?)

* “*Capital* ... consists of wealth *saved from revenue*, and used *with a view to profit*” ([p.] 16). “The possible sources of capital ... are obviously all the revenues of all the individuals composing a community, from which revenues it is possible that any saving can be made. The particular classes of income which yield the most abundantly to the progress of national capital, *change at different stages of their progress*, and are therefore found *entirely different* in nations occupying different positions in that progress” * (l.c.). “*PROFITS* are therefore FAR FROM BEING THE ONLY SOURCES FROM WHICH CAPITAL IS FORMED OR INCREASED. It is even an UNIMPORTANT SOURCE OF ACCUMULATION, compared with WAGES and *rents, in the earlier stages of society” ([p.] 20). “When a considerable advance in the powers of national industry has actually taken place, profits rise into comparative importance as a source of accumulation” * ([p.] 21).

According to this, capital is a part of the WEALTH which constitutes revenue, the part which is expended not as revenue but for the purpose of producing profit. Profit is already a form of surplus value which specifically presupposes capital. If the capitalist mode of production, i.e. capital, is postulated, then the explanation is correct; in other words, if one postulates what has to be explained. But here Jones means all revenue SPENT, NOT AS REVENUE, but with the aim of enrichment, that is, PRODUCTIVELY.

Two aspects are, however, important in this context: *First*: To a certain extent accumulation of wealth takes place in all stages of economic development, that is, partly an expansion of the scale of

production and partly, the accumulation of treasure, etc. As long as WAGES and RENT predominate—that is, according to what was said earlier, as long as the greater part of the SURPLUS LABOUR and SURPLUS PRODUCE which does not accrue to the worker himself, goes to the landowner (the State in Asia) and, on the other hand, the worker reproduces his LABOUR fund himself, i.e. he not only produces his own WAGES himself, but pays them to himself, usually, moreover (almost always IN THAT STATE OF SOCIETY), he is also able to appropriate AT LEAST a part of his SURPLUS LABOUR and his SURPLUS PRODUCT—in this state of society, WAGES and RENT are the main sources of accumulation as well. (In these circumstances profit is restricted to merchants, etc.) Only when the capitalist production has become predominant, when it does not merely exist sporadically, but has subordinated to itself the mode of production of society; when IN FACT the capitalist DIRECTLY APPROPRIATES THE WHOLE SURPLUS LABOUR AND SURPLUS PRODUCE IN THE FIRST INSTANCE, ALTHOUGH HE HAS TO PAY AWAY PORTIONS OF IT TO THE LANDOWNER, etc.—only then does profit become the PRINCIPAL SOURCE OF CAPITAL, OF ACCUMULATION, OF WEALTH SAVED FROM REVENUE, AND USED WITH A VIEW TO PROFIT. This at the same time presupposes (as is implicit in the domination of the capitalist mode of production) that “A CONSIDERABLE ADVANCE IN THE POWERS OF NATIONAL INDUSTRY HAS ACTUALLY TAKEN PLACE”.

Jones thus answers those asses who imagine that no accumulation can take place without the profit yielded by capital or who justify profit by saying that the capitalist makes a sacrifice in order TO SAVE FROM HIS REVENUE FOR PRODUCTIVE PURPOSES,¹⁸⁶ by pointing out that in this particular (capitalist) mode of production the function “OF ACCUMULATING” devolves principally on the capitalist whereas, in previous modes of production, it was the labourer himself and, in part, the LANDLORD who played the chief roles in this process and profit played hardly any part in it. Naturally the function [of accumulating] always devolves 1) on those who pocket the SURPLUS VALUE and, 2) among those who pocket the SURPLUS VALUE, in particular on the person who also acts as agent in the production process itself. By saying, [XVIII-1135] therefore, that profit is justified *by the fact* that the capitalist “SAVES” HIS CAPITAL OUT OF PROFIT and that he fulfils the function of accumulating, one merely says that the capitalist mode of production is justified because it exists—this, however, applies equally to the modes of production which preceded it and those which will succeed it. If one says that otherwise accumulation would be impossible, then one forgets that this particular method of accumulation THROUGH THE AGENCY OF THE CAPITALIST has come into existence at a certain

historical stage and is moving towards the historical date when it will cease to exist.

Secondly, once so much ACCUMULATED WEALTH has been concentrated in the hands of capitalists *per fas et nefas*^a that they can dominate production, then the greater part of EXISTING CAPITAL — AFTER A CERTAIN LAPSE OF TIME — can BE CONSIDERED AS MERELY ORIGINATING FROM PROFIT (REVENUE), that is, from capitalised surplus value.

A point which Jones does not sufficiently emphasise, and which he really only implies tacitly, is this: If the LABOURING PRODUCER pays himself his own WAGES and if his product does not at first assume the "SHAPE" of OTHER PEOPLE'S REVENUE FROM WHICH "SAVINGS" are made AND THEN PAID BACK BY THEM TO THE LABOURER, it is necessary that the labourer be in possession of his conditions of production (as property owner, or TENANT, or HEREDITARY OCCUPIER, etc.). In order that his WAGES and consequently the LABOUR FUND can confront him as alien capital, these conditions of production must have been lost to him and have assumed the SHAPE OF alien PROPERTY. Only after his conditions of production together with his LABOUR FUND have been wrested from him and when, as *capital*, they are rendered independent in relation to him, does the further process begin, which is not concerned with the mere reproduction of these original conditions of production, but with their further development so that both the conditions of production and the LABOUR FUND confront the labourer as something "SAVED" FROM OTHER PEOPLE'S REVENUE IN ORDER TO BE CONVERTED INTO CAPITAL. By losing possession of his conditions of production, and hence, of his LABOUR FUND, the labourer also loses the function of accumulating, and every addition he makes to wealth appears in THE SHAPE OF OTHER PEOPLE'S REVENUE which MUST FIRST BE "SAVED" BY THOSE PEOPLE, THAT IS TO SAY, NOT SPENT AS REVENUE, [if it is] TO PERFORM THE FUNCTIONS OF CAPITAL AND LABOUR FUND FOR the LABOURER.

Since Jones himself describes a state of affairs in which things have not yet reached this stage and where unity prevails, he certainly should have described this "*separation*" as the real generation process of capital. Once this separation exists, this process does indeed take place and it IS CONTINUED and extended, since the SURPLUS LABOUR of the worker always confronts him as the revenue of others, through the "SAVING" of which alone wealth can be ACCUMULATED and the scale of production extended.

The reconversion of revenue into capital. If *capital* //i.e. the separation of the conditions of production from the labourer// is

^a By fair means or foul.—Ed.

the source of profit //i.e. of the fact that SURPLUS LABOUR appears as the revenue of capital and not of labour// then profit becomes the source of capital, of new capital formation, i.e. of the fact that the ADDITIONAL conditions of production confront the worker as capital, as a means for maintaining him as a worker and of appropriating his SURPLUS LABOUR anew. The original unity between the worker and the conditions of labour //abstracting from slavery, where the labourer himself belongs to the objective conditions of labour// has two main forms: the Asiatic communal system (primitive communism) and small-scale agriculture based on the family (and linked with domestic industry) IN ONE OR THE OTHER FORM. Both are embryonic forms and both are equally unfitted to develop labour as *social* labour and the productive power of social labour. Hence the necessity for the separation, for the rupture, for the antithesis of labour and property (by which property in the conditions of production is to be understood). The most extreme form of this rupture, and the one in which the PRODUCTIVE FORCES OF SOCIAL LABOUR ARE ALSO MOST POWERFULLY DEVELOPED, is capital. The original unity can be re-established only on the material foundation which capital creates and by means of the revolutions which, in the process of this creation, the working class and THE WHOLE SOCIETY UNDERGO.

Another point which Jones does not sufficiently emphasise is this:

Revenue which is exchanged as such against labour—if it is not the revenue of a SELF-SUSTAINING LABOURER who employs a SECONDARY WORKMAN—is the revenue of the LANDHOLDER, itself derived from the rent which the SELF-SUSTAINING LABOURER pays him, and which the landlord does not entirely consume *in natura*, either by himself or together with his MENIALS and RETAINERS, but a part of which he uses to buy the products or services of secondary WORKMEN and so on. This always presupposes the first relationship.

[XVIII-1136] //In the same way as part of the profit is classified as interest, EVEN IF THE INDUSTRIAL CAPITALIST EMPLOYS ONLY HIS OWN CAPITAL, because this form [of revenue] has a separate mode of existence, so, given the capitalist mode of production, EVEN IF A LABOURER OWNS HIS MEANS OF PRODUCTION, EVEN WITHOUT EMPLOYING ANY OTHER LABOURER, IT IS CONSIDERED AS CAPITAL and the part of his own labour realised by him *au delà*^a the common WAGE appears to be PROFIT yielded by his capital. He himself is then divided up into DIFFERENT economic categories. AS HIS OWN WORKMAN, HE GETS HIS WAGES, AND AS CAPITALIST, HE GETS HIS PROFITS. This observation belongs to the chapter “REVENUE AND ITS SOURCES”.¹⁸⁷//

^a Over and above.—Ed.

*“There is a difference between the influence, on the productive powers of nations, of that *wealth which has been saved*, and is *dispensed as wages with a view to profit*; and of that wealth which is advanced out of revenue for the support of labour. With a view to this distinction, I use the word *capital* to denote that portion of wealth exclusively which has been saved from revenue, and is used with a view to profit” ([pp.] 36-37). “We might ... comprise under the term capital, *all the wealth devoted to the maintenance of labour*, whether it has gone through any *previous process of saving or not*, ...we must, then, in tracing the position of the labouring classes, and of their paymasters in different nations and under different circumstances, distinguish between *capital which has been saved*, and *capital which has undergone no process of accumulation*; between, in short, capital which is revenue, and capital which is not revenue” ([p.] 36). “In every nation of the Old World, except England and Holland, the *wages of the agriculturists are not advanced out of the funds which have been saved and accumulated from revenues*, but *are produced by the labourers themselves*, and never exist in any other shape than that of a stock for their own immediate consumption” * ([p.] 37).

What distinguishes Jones from the other economists (except perhaps Sismondi) is that he emphasises that the essential feature of capital is its socially determined form, and that he reduces the whole difference between the capitalist and other modes of production to this distinct form. It is that labour is directly converted into capital and that, on the other hand, this capital buys labour not for the sake of its use value, but in order to valorise itself, to create surplus value (a larger amount of exchange value) and to use it “WITH A VIEW TO PROFIT”.

This shows, however, at the same time that the “SAVING OF REVENUE” in order to convert it into capital and “accumulation” are distinguished from other methods only through the *form* in which “WEALTH IS DEVOTED TO THE MAINTENANCE OF LABOUR”. The AGRICULTURAL LABOURERS in England and Holland who receive WAGES which are “ADVANCED” by capital PRODUCE “THEIR WAGES THEMSELVES” just like the French PEASANT OR THE SELF-SUSTAINING RUSSIAN SERF. If the production process is considered in its continuity, then the capitalist advances the LABOURER as “WAGES” today only a part of the product which the LABOURER “produced” yesterday. Thus the difference [between the capitalist and other modes of production] does not lie in the fact that, in one case, THE LABOURER DOES PRODUCE HIS OWN WAGES AND IN THE OTHER [CASE] DOES NOT PRODUCE THEM. The difference lies in the fact that [in one case] his product appears as WAGES; that in this case, the worker’s product (the part of the product produced by the worker which makes up the LABOUR FUND) 1) appears as the revenue of *others*; 2) that then, however, it is not expended as revenue, and not spent on labour by means of which revenue is directly consumed, but, 3) that it confronts the worker as *capital* which returns to him this portion of the product, in exchange not merely

for an equivalent but for more LABOUR than is objectified in the product. Thus his product appears 1) as revenue of others, 2) as something which is "SAVED" FROM REVENUE IN ORDER TO BE EMPLOYED IN THE PURCHASE OF LABOUR WITH A VIEW TO PROFIT, i.e. as *capital*.

And this process in which his own product confronts him as *capital*, is described in the following way: the LABOUR FUND HAS GONE "THROUGH A PREVIOUS PROCESS OF SAVING", "HAS UNDERGONE A PROCESS OF ACCUMULATION", and prior TO BEING CONVERTED INTO THE LABOURER'S MEANS OF SUBSISTENCE, it "EXISTS IN ANOTHER SHAPE" (here it is expressly stated that merely a *change of form* takes place) "THAN THAT OF A STOCK FOR THE LABOURER'S IMMEDIATE CONSUMPTION". The whole difference lies in the *transformation* which the LABOUR FUND produced by the worker undergoes before it comes back to him in the form of WAGES. In the CASE OF SELF-SUSTAINING PEASANTS OR independent artisans, it therefore never assumes the form of "WAGES".

[XVIII-1137] "SAVING" and "accumulation"—AS FAR AS THE LABOUR FUND IS CONCERNED—are mere *names* here for the transformations which the worker's product undergoes. The SELF-SUSTAINING LABOURER consumes his product just like the WAGE LABOURER, or rather, the latter does so just like the former. But in the case of the wage earner, his product *appears* to be SOMETHING SAVED OR ACCUMULATED FROM [the revenue of] OTHERS, THE CAPITALIST'S REVENUE. In FACT, however, it is this process that makes it possible for the capitalist "TO SAVE" OR "ACCUMULATE" THE LABOURER'S SURPLUS LABOUR for his own purposes, and this is the reason why Jones places such great emphasis on the fact that, in non-capitalist modes of production, ACCUMULATION does not arise FROM PROFITS, but from WAGES, in other words, from the income of the SELF-SUSTAINING CULTIVATOR or the artisan who exchanges his labour directly for revenue (otherwise how could the MIDDLE CLASSES have arisen out of the latter?) and from the LANDLORD'S RENT. But for the LABOUR FUND to undergo these transformations, the conditions of production must confront the labourer as capital, which is not the case in other forms. The expansion of WEALTH does not appear to be due to the LABOURER in the latter case, but to the SAVING of profit, the reconversion of surplus value into capital, in the same way as the LABOUR FUND itself (before its expansion as a result of new accumulation) confronts the labourer as capital.

"SAVING", taken literally, only makes sense with regard to the capitalist who capitalises his revenue, in contrast to the capitalist who consumes his revenue, i.e. SPENDS it AS REVENUE, but makes NO SENSE WHATEVER when applied to relations BETWEEN CAPITALIST AND LABOURER.

Two *cardinal* FACTS about capitalist production: [First,] concentra-

tion of the means of production in a few hands so that they no longer appear as the immediate property of the individual labourer, but as factors of social production, even though in the first instance they appear as the property of the non-working capitalists, who are their TRUSTEES in bourgeois society and enjoy all the fruits of this TRUSTEESHIP. Second: Organisation of labour itself as social labour brought about by cooperation, division of labour and the linking of labour with the results of social domination over natural forces. In both these ways, capitalist production eliminates private property and private labour, even though as yet in antagonistic forms.

The main difference between productive and unproductive labour noted by Adam Smith, is that the former is exchanged directly for capital and the latter for revenue—and the full meaning of this difference emerges first in Jones. His work shows that the first kind of labour is characteristic of the capitalist mode of production, and the second—where it is predominant—belongs to earlier modes of production, and, where it merely plays a subordinate role, is restricted (or ought to be restricted) to spheres which are not directly concerned with the production of wealth.

*“*Capital* is the instrument through which all the causes which augment the efficiency of human labour, and the productive power of nations, are brought into play... Capital is the stored-up results of *past labour* used to produce some effect in some part of the task of producing wealth”* [p. 35].

(In Note, *ib.*, PAGE 35, he says:

*“It will be convenient, and it is reasonable, to consider the act of production as incomplete till the commodity produced has been placed in the hands of the person who is to consume it; all done previously has that point in view. The grocer’s horse and cart which brings up our tea from Hertford to the College, is as essential to our possession of it for the purpose of consumption as the labour of the Chinese who picked and dried the leaves.”)

“But ... *this capital* ... does not perform in every community *all the tasks it is capable of performing*. It takes them up gradually and successively in all cases; and it is a remarkable and an all-important fact, that the one special function, the performance of which is essential to the serious advance of the power of capital in all its other functions, is exactly that which, in the case of the greater portion of the labourers of mankind, capital has never yet fulfilled at all” ([pp.] 35-36). “I allude to the advance of the wages of labour” ([p.] 36). “The wages of labour are advanced by capitalists in the case of less than one-fourth of the labourers of the earth.” “This fact ... of vital importance in accounting for the comparative progress of nations” (l.c.).

[XVIII-1138] “Capital, or accumulated stock, after performing various other functions in the production of wealth, only takes up late that of *advancing* to the labourer his wages”* ([p.] 79).

In the last sentence on PAGE 79, capital is indeed described as a “relation”, not merely as “ACCUMULATED STOCK” but as a quite definite

relation of production. The "STOCK" cannot "TAKE UP THE FUNCTION OF ADVANCING WAGES". Jones, moreover, emphasises that it is *the basic form of capital*—the form which gives the whole process of social production its distinctive character, dominates it, leads to a quite new development of the productive powers of social labour, and revolutionises all social and political relationships—that confronts wage labour, and pays WAGES. He emphasises that before capital performs this function, which is of decisive importance, it fulfils other functions and appears in other, subordinate and historically earlier forms, but that its POWER IN ALL ITS FUNCTIONS only develops fully when it steps forth as industrial capital. On the other hand, in LECTURE III "ON THE GRADUAL MANNER IN WHICH CAPITAL OR CAPITALISTS" //there's the rub in this OR; ACCUMULATED STOCK becomes capital only because of this personification// "UNDERTAKE SUCCESSIVE FUNCTIONS IN THE PRODUCTION OF WEALTH",^a Jones does not indicate what the previous FUNCTIONS are. They can indeed only be those of capital engaged in commerce or banking. But although Jones comes so close to the correct concept and even expresses it in a certain fashion, nevertheless, being an economist, he is so enmeshed in bourgeois fetishism that not even the devil could be certain that he does not mean that "ACCUMULATED STOCK" as such can perform different FUNCTIONS.

The sentence:

* "Capital, or *accumulated stock*, after performing various other functions in the production of wealth, only *takes up* late that of *advancing* to the labourer his wages" * ([p.] 79)

is the most complete expression of the contradiction; on the one hand, it expresses a correct historical conception of capital, but, on the other hand, a shadow is cast over it by the narrow-minded notion of the economist that "STOCK" as such is "capital". Hence "THE ACCUMULATED STOCK" becomes a person who "TAKES UP THE FUNCTION OF ADVANCING WAGES" TO MEN. Jones is still rooted in economic prejudice when he solves [the problem], a solution becomes necessary as soon as the capitalist mode of production is regarded as a determinate historical category and no longer as an eternal natural relation of production.

One can see what a great leap forward there was from Ramsay to Jones. Ramsay regards precisely that FUNCTION of capital which makes it capital—THE ADVANCING OF WAGES—AS ACCIDENTAL, due only to the poverty of the people, and irrelevant to the production

^a See R. Jones, *Text-book of Lectures on the Political Economy of Nations...*, p. 35 sqq.—Ed.

process as such. In this narrow circumscribed manner, Ramsay *denies* the necessity for the capitalist mode of production. Jones, on the other hand, //strange that they were both priests of the ESTABLISHED CHURCH.¹⁸⁸ The ministers of the English CHURCH seem to think more than their continental [brethren]// demonstrates that it is precisely this function that makes capital capital and gives rise to the most characteristic features of the capitalist mode of production. He shows how this form occurs only at a certain level of development of the productive powers and that it then creates an entirely new material basis. Consequently, however, his comprehension of the fact that this form “can be superseded” and of the merely transitory historical necessity for this form, is quite different from that of Ramsay and more profound. He by no means regards capitalist relations as eternal.

*“A state of things may hereafter exist, and *parts of the world may be approaching to it*, under which the labourers and the owners of accumulated stock may be identical; but in the progress of nations ... this has *never yet* been the case, and to trace and understand *that progress*, we must observe the labourers gradually transferred from the hands of a body of customers, who pay them out of their revenues, to those of a body of employers, who pay them by advances of capital out of the returns to which the owners aim at realising a distinct revenue. This may not be as *desirable a state of things as that in which labourers and capitalists are identified*, but we must *still accept it as constituting a stage in the march of industry*, which has hitherto marked the progress of advancing nations. At that stage the people of Asia have not yet arrived” * ([p.] 73).

[XVIII-1139] Here Jones states quite explicitly that capital and the capitalist mode of production are to be “accepted” merely as a transitional phase in the development of social production, a phase which, if one considers the development of the productive powers of social labour, constitutes a gigantic advance on all preceding forms, but which is by no means the end result; on the contrary, the necessity of its destruction is contained in the antagonism between “OWNERS OF ACCUMULATED WEALTH” and the “ACTUAL LABOURERS”.

Jones was a professor of political economy at Haileybury and the *successor to Malthus*. One can see here how the real science of political economy ends by regarding the bourgeois production relations as merely *historical* ones, leading to higher relations in which the antagonism on which they are based is resolved. By analysing them political economy breaks down the apparently mutually independent forms in which wealth appears. This analysis (even in Ricardo) goes so far that 1) The *independent, material form of wealth* disappears and wealth is shown to be simply the activity of men. Everything which is not the result of human activity, of labour, is nature and, as such, is not social wealth. The

phantom of the world of goods fades away and it is seen to be simply a continually disappearing and continually reproduced objectivisation of human labour. All solid material wealth is only transitory materialisation of social labour, crystallisation of the production process whose measure is time, the measure of a movement itself. 2) The manifold forms in which the various component parts of wealth are distributed amongst different sections of society lose their apparent independence. Interest is merely a part of profit, rent is merely surplus profit. Both are consequently merged in profit, which itself can be resolved in *surplus value*, that is, to unpaid labour. The value of the commodity itself, however, can only be reduced to labour time. The Ricardian school reaches the point where it rejects one of the forms of appropriation of this surplus value—landed property (rent)—as useless, in so far as it is pocketed by private individuals. It rejects the idea that the landowner is an agent of capitalist production. The antithesis is thus reduced to that between capitalist and wage labourer. This relationship, however, is regarded by the Ricardian political economists as given, as a natural law, on which the production process itself is based. The later economists go one step further and, like Jones, admit only the *historical* justification for this relationship. But from the moment that the bourgeois mode of production and the conditions of production and distribution which correspond to it are recognised as *historical*, the delusion of regarding them as natural laws of production vanishes and the prospect opens up of a new society, [a new] economic formation of society, to which the bourgeois mode of production is only the transition.

//The third section⁴ “Capital and Profit” to be divided in the following way: 1) Conversion of surplus value into profit. Rate of profit as distinguished from rate of surplus value. 2) Conversion of profit into average profit. Formation of the general rate of profit. Transformation of values into prices of production. 3) Adam Smith’s and Ricardo’s theories on profit and prices of production. 4) *Rent*. (Illustration of the difference between value and price of production.) 5) History of the so-called Ricardian law of rent. 6) Law of the fall of the rate of profit. Adam Smith, Ricardo, Carey. 7) Theories of profit. Query: whether Sismondi and Malthus should also be included in the *Theories of Surplus Value*. 8) Division of profit into industrial profit and interest. Mercantile capital. Money capital. 9) Revenue AND ITS SOURCES. The question of the relation between the processes of production and distribution also to be included here. 10) REFLEX movements of money in the

process of capitalist production as a whole. 11) Vulgar economy. 12) *Conclusion*. "*Capital and wage labour*".//

We still [have] to consider a number of things in Jones' work: 1) In what way, in particular, the capitalist mode of production—the ADVANCING OF WAGES BY CAPITAL—alters the forms and the productive powers. 2) His observations regarding accumulation and the rate of profit.

But, first of all, another point has to be emphasised.

[XVIII-1140] *"The capitalist has been but an agent to give the labourers the benefit of the expenditure of the revenues of the surrounding customers, in a new form and under new circumstances"* ([p.] 79).

This refers to the NON-AGRICULTURAL LABOURERS, whose earnings previously came direct from the revenue of the LANDHOLDERS, etc. Whereas previously they exchanged their labour (or the product of their labour) directly for that revenue, the capitalist exchanges the product of their labour—collected and concentrated in his hands—for that revenue, in other words, revenue is transformed into, exchanged for capital, in that it constitutes the RETURNS on capital. Instead of being direct RETURNS for labour, it constitutes direct RETURNS for the capital that EMPLOYS THE LABOURERS.

// The first section "*Production Process of Capital*" to be divided in the following way: 1) Introduction. Commodity. Money. 2) Transformation of money into capital. 3) *Absolute surplus value*. (a) Labour process and valorisation process. (b) Constant capital and variable capital. (c) Absolute surplus value. (d) Struggle for the normal working day. (e) *Simultaneous working days* (number of simultaneously employed labourers). Amount of surplus value and rate of surplus value (magnitude and height?). 4) *Relative surplus value*. (a) Simple cooperation. (b) Division of labour. (c) Machinery, etc. 5) Combination of absolute and relative surplus value. Relation (proportion) between wage labour and surplus value. Formal and real subsumption of labour under capital. Productivity of capital. Productive and unproductive labour. 6) Reconversion of surplus value into capital. Primitive accumulation. Wakefield's theory of colonisation. 7) *Result of the production process*. Either *sub* 6) or *sub* 7) the CHANGE in the form of the LAW OF APPROPRIATION can be shown. 8) Theories of surplus value. 9) Theories of productive and unproductive labour.//

// *Interest: The Economist* remarks on interest:

"If A FIXED SUM OF PRECIOUS METAL falls [in value], this is no reason why A SMALLER QUALITY OF MONEY SHOULD BE TAKEN FOR ITS USE, for if the PRINCIPAL is of less value for the BORROWER, the interest is to the same extent less difficult for him to pay. In California, 3% per month, 36% per annum, because of the UNSETTLED

STATE. In *Hindustan*, with the *Indian princes* borrowing for UNPRODUCTIVE EXPENSES, the lenders, to counterbalance on the average the losses of capital, [charge] very high interest, 30%, HAVING NO RELATION TO PROFIT WHICH MIGHT BE GAINED IN INDUSTRIAL OPERATIONS" (*The Economist*, [No. 491,] January 22, 1853 [p. 89]).¹⁸⁹

But the interest charged by usurers who advance seeds, etc., or lend the loom, etc., to THE RYOTS bears just as little "RELATION TO PROFIT" gained by the latter. I.e. it bears no relation to the profit made by these HINDOO CULTIVATORS and WEAVERS. Just as little does the interest English workers pay at the pawnshop (100% a year on the average; see Tuckett^a) HAVE ANY RELATION TO THE RATE OF THEIR WAGES AND STILL LESS TO "PROFITS REALISED BY THEM". The interest these usurers receive rather includes not only the entire profit (THE WHOLE SURPLUS VALUE), but constitutes in part a *deduction from the wages*, these being depressed even *under* the Indian level, which is low in itself, partly because of the HINDOOS' limited needs and partly because of the fertility of the soil, WHENCE LOW PRICE OF RICE, etc. Incidentally, this reproduces itself in England, for instance, where "HOME INDUSTRY" exists merely as a form not yet really (but only formally) subsumed under the capitalist mode of production, etc. This against the jackass Carey, who e.g. compares the interest paid by an Indian RYOT with that paid on FIRST CLASS BILLS in England, to demonstrate how much higher wages are in England than in India.^b But now back to *The Economist*, which adds the following to the above:

"The lender here CHARGES an *interest so high as to be sufficient to replace the principal in a short time, or at least as, on the average of all his lending transactions, might serve to counterbalance his losses in particular instances, by the apparently exorbitant gains acquired in others*" (l.c.).

Concerning the *rate of interest*, it says:

*"The *rate of interest* depends: 1) upon the rate of profit; 2) upon the proportion in which the *entire profit* is divided between lender and borrower"* (*The Economist*, l.c.).

The Economist, like all English economists, of course [considers that] profit=THE WHOLE SURPLUS VALUE minus RENT; interest is merely PART OF IT.

"Abundance or scarcity of the precious metals, the high or low scale of general prices prevailing, determines only whether a greater or less amount of money will be required in effecting the exchanges between borrowers and lenders, as well as every other species of exchange... The only difference is *that a greater sum of money would be needed to represent and transfer the capital lent ... the relation between the sum paid for the use of capital and the capital expresses the rate of interest as measured in money"* ([pp.] 89-90).

^a See this volume, p. 349.—Ed.

^b See H. Ch. Carey, *Essay on the Rate of Wages...*, Philadelphia, 1835, p. 112 sqq.¹⁹⁰—Ed.

[XVIII-1141] Regarding the pawnshop business:

* "It is by frequent fluctuations in a month, and by pawning one article to relieve another, where a small sum is obtained, that the premium for money becomes so excessive. 240 licensed pawnbrokers in London and about 1,450 in the country. The capital employed is estimated at about 1 million.* It is turned round at least thrice in the course of a year and yields each time $33\frac{1}{2}\%$ on an average; so that the INFERIOR ORDERS OF England yearly pay 1 MILLION for the *temporary loan of a million, exclusive of what they lose by goods being forfeited" * (J. D. Tuckett, *A History of the Past and Present State of the Labouring Population etc.*, Vol. I, London, 1846, p. 114).¹⁹¹//

COURT OF EXCHEQUER. *Homer versus Taunton. DECEMBER 21, 1859* (*Reynolds's [Newspaper]*, DECEMBER 25, 1859 [No. 489, pp. 11, 1]). (STOCKING WEAVERS.^a)

"THIS WAS AN ACTION FOR LIBEL by Homer (HOSIER and GROCER) (his wife runs a SHOP at that place) AT EARL Shilton, NEAR Hinckley-Leicestershire, versus Taunton, EDITOR of the *Midland Express*, *for two libels imputing to the plaintiff oppression and tyranny over the working people in his employ, and also [charging him] with being a *truckmaster*.*"

(INSTEAD OF PAYING HIS WORKPEOPLE IN WAGES, that fellow MADE THEM TAKE OUT THEIR EARNINGS IN HIS WIFE'S SHOP.)

"HE EMPLOYED BETWEEN 200 and 300 WORKPEOPLE. After all the deductions the AVERAGE EARNINGS are between 3s. 6d. and 4s. A WEEK. A FRAME COSTS £2, AND THE MASTER CHARGES THE WORKMAN £2 10 A YEAR FOR THE USE OF THE FRAME. (1s. per WEEK; of the 52 weeks, 50 are WORKING WEEKS.)"

//Hence in a year he makes 50s. on 40s., or 125%. This shows Mr. Carey the size of interest (rent) where profit really appears in industrial countries like England in the exceptional form in which he generally conceives of it, namely as interest or rent which the capitalist receives from the worker for the rent of the machine. This also disposes of the twaddle about the LABOUR OF SUPERINTENDENCE. Some of these KNITTERS formerly owned FRAMES, but the emergence of improved ones made theirs valueless.

* "The workman, now, be it remarked, is not allowed to buy one for himself. Prior to certain alterations in the construction of the stocking frame, a skilled and industrious man could earn from 8-10s. a week" * [ibid., p. 1].

As regards the benefits deriving from *improvements* in machinery for the worker himself, the rapid series of improvements in the JENNY MULE in the 18th century made it impossible for the INDEPENDENT (notably AGRICULTURAL) WEAVERS to replace their machines, rendered valueless, by new ones, and landed them in the hands of the capitalists. (Apart from the fact that the machines, once developed and capable of being MOVED BY MECHANICAL POWER, led on to the FACTORY SYSTEM.)

^a Marx adds the German term here.—Ed.

("The IMPROVEMENTS," says Babbage in his book, 1832, CH. XXIX [p. 281],^a "which took place not long ago in frames for making patent-net were so great, that a machine, in good repair, which had cost £1,200, sold a few years after for £60. During the great speculations in that trade, the IMPROVEMENTS succeeded each other so rapidly, that machines which had never been finished were abandoned in the hands of their makers, who were left stranded through happier discoveries serving the same purpose.")//

*"A man, with a wife and 4 children, was enabled to earn from 6s. to 6s. 6d. a week; but after the *usual* deduction for frame rent, room rent, scouring, etc., had been taken, no more than 2s. remained to support himself and family. Another very able hand, having been 20 years in the trade, could earn as much as 12s. a week; but then, he would have to work 15 hours every day. One man, examined in the course of this trial, declared that all the clothes he had on, with the exception of his coat, were borrowed." "The money thus made," * says *Reynolds's Newspaper*, * "is the distillation of the sweat and the strength of the starving [XVIII-1142] and squalid myriads, to whom life is a dismal penance of incessant and unrequited toil." *

The journalist who had denounced this TASKMASTER was fined £5 for LIBEL.

Where capitalist production is capitalist merely in form, the capitalist is merely a RACK-RENTING "MIDDLEMAN". This holds equally for industry carried on in this way and for Irish or Indian agriculture. TAKE the following item from *The Times* of March 13, 1862, HEADED "STARVING NEEDLEWOMEN":

*"A deputation waited on Sir G. Lewis, at the War Office, on the 11th March. An association, originally established by Miss Barlee, and now powerfully supported, proposes to undertake the contracts for military clothing on the same terms now given by Government to contractors, and yet to pay the starving needlewomen an advance of 30% on their present wages. This result is simply obtained by getting rid of the 'middleman' and applying *his profits* to the benefit of the human material out of which they have hitherto been made. With every advantage the society can give, an ordinary needlewoman cannot earn more than 1s. for 10 hours' incessant labour at soldiers' shirts (viz. 2 shirts a day), and at cloth work not more than 1s. 6d. a day, for 12 hours' work. At contract work her wages now vary from 5d. to 8d. per 10 hours' work." *

//For a seven-day week this makes 35 to 56d., i.e. from 2s. 11d. to 4s. 8d. a week.//

//"Admittedly there is something cruel about this robbing of the worker; but it constitutes *the very basis, the surest source of profit*, and commercial probity has not the least occasion to blush on account of it. The most honourable fellow may engage in it on his terrain: the master's wresting the utmost from the worker is within the rules of war, they are two contending powers" [Leduc.] *Sir Richard Arkwright*, l.c., [Paris, 1841, p.] 144).^b

When the MASTER EXPLOITS *ses ouvriers*,^c for instance, by OVERWORKING

^a Ch. Babbage, *On the Economy of Machinery and Manufactures*.—Ed.

^b Marx quotes in French.—Ed.

^c His workers.—Ed.

them IN AN EXTRAORDINARY STYLE, this is CLEAR PROFIT, whatever the AVERAGE RATE OF PROFIT. All PROFITS OF EXPROPRIATION¹⁷ are uncertain. Under GIVEN AVERAGE CIRCUMSTANCES OF COMMERCE, cheating the worker always remains “*the very basis, the surest source of profit*”.^a//

//The capitalist’s real profit is largely PROFIT UPON EXPROPRIATION, and there is a particularly wide scope for the “individual work” of the capitalist in this, the mercantile field, where it is not a matter of creating SURPLUS VALUE but of distributing the AGGREGATE profit of the WHOLE CLASS OF CAPITALISTS AMONG ITS INDIVIDUAL MEMBERS. This does not concern us here.¹⁹² Certain kinds of profit, e.g. that based on speculation, occur solely in this field. Therefore, examining them here would be totally irrelevant. It is evidence of vulgar economy’s brute stupidity that it lumps these—notably in order to represent profit as “WAGES”—with profit SO FAR AS IT ORIGINATES IN THE CREATION OF SURPLUS VALUE. See, e.g., the worthy Roscher.¹⁹³ It is therefore quite natural that such jackasses, in discussing the distribution of the AGGREGATE profit of the whole capitalist class, should throw together the calculation items and compensation titles of capitals in different spheres of production with the causes behind the exploitation of the workers by the capitalists, with the factors behind the origin of profit as such, so to speak.//

[XVIII-1143] // *Different ratios of constant to variable capital:*

* “Price of cotton cloth in the island of Java. The cotton, in the seed, is sold by the picul (about 133 lbs). Not above $\frac{1}{4}$ or $\frac{1}{5}$ of this weight ... is cotton; and the natives, by means of rude rollers, separate, at the expense of one day’s labour, about $1\frac{1}{4}$ lb. of cotton from the seed. In this stage it is worth between 4 or 5 times its original cost; and the prices of the same substance, in its different stages of manufacture, are for one picul:

“Cotton in the seed: 2 to 3 dollars;	
“Clean cotton	10-11;
“Cotton thread	24;
“Cotton thread died blue	35.

“Good ordinary cotton cloth 50. Thus ... the expense of spinning in Java is 117% on the value of the raw material ... the expense of spinning cotton into a fine thread is, in England, about 33%” * (Ch. Babbage, *On the Economy of Machinery etc.*, London, 1832, [pp.] 165-66).

“In 1792, manual labour was performed mainly by men, without premature recourse to children; the total number of workers or operatives of all kinds could be estimated, in 1792, at a quarter of the population, which was around 15 million. The available mechanical power, at the time, was probably *three times that of manual labour in value*. Consequently, the manual labour was equal to that of 3,750,000 men, and the mechanical labour to that of three times this number, or roughly the labour of 11,250,000 men, the total product having the value of the labour of 15,000,000 men. As a result, *the population and the total accumulated*

^a Marx quotes in French.—*Ed.*

productive power were evenly balanced. But the introduction of the improved steam engine, weaving looms, etc., multiplied Great Britain's productive power incalculably. *Manual labour has increased by enlisting the daily labour, carried on almost continuously, of women and children at the manufactories,* and as a result it can now be assessed as that of one-third of the population, which had grown to 18 million by 1817, an increase of 3 million over 25 years. But since the introduction of the improved machines of Arkwright and Watt there has been a real rise in the powers productive of wealth equal to the labour of 200 million active, strong and well-trained workers, that is to say *10 times the population* of the British Isles, or *thirty times the amount of manual labour* replaced today by this increase in the means of producing wealth. The following changes occurred between 1792 and 1817: the *population rose* from 15,000,000 to 18,000,000; *manual labour rose* from $\frac{1}{4}$ to $\frac{1}{3}$, which in relation to 18,000,000 people means *6 million*.

"The newly created [productive] power=the labour of ... 200 million people.

"In 1792, *mechanical labour*=3 times the amount of manual labour ... 11,250,000. *Grand total of productive power in 1817* ... 217,250,000 people, or, as a ratio to the population of 1817, 12.6 to 1. It follows from this table that over a period of 25 years Britain achieved a level of industrial development and productive power enabling it to increase its wealth at an annual rate 12 times that of the past, and that it can therefore sacrifice this surplus, whether in war expenditure or in foreign trade unprofitable to it, or employ it to improve the condition of its population" ([H. G. Macnab,] *Examen impartial des nouvelles vues de M. Robert Owen etc.*, Paris, 1821, [pp.] 128-30).^a//

[XVIII-1144] // *Economy through reducing breaks in labour time in the production sphere.*

"Bleaching ... the NATURAL OPERATION SHORTENED by the APPLICATION OF CHLORINE, IN COMBINATION WITH LIME" (Babbage, l.c., [pp.] 31-32).//

Economy IN EXPENSE and ADDITIONAL CAPITAL.

"It will be necessary occasionally to adjust or repair the machine; this is done with greater ease by a workman accustomed to machine-making than by one who merely directs its motion. Now, since the good performance of machines and their duration depend to a very great extent upon the care given to immediately correcting every irregular vibration, the tiniest imperfection in their parts as soon as they appear, it is evident that the expenditure arising from the reparation and the wear and tear of machinery is considerably reduced by installing the appropriate workman right on the spot. But in the case of a single tulle loom, this would be too expensive a plan. The conclusion immediately following is that only an establishment using a number of such looms may have recourse to it, so that the whole time of one workman can be occupied in keeping them in order and making whatever repairs happen to be necessary. If this principle of economy is applied consistently, one is bound of necessity to double and treble the number of machines, in order to employ the whole time of 2 or 3 skilful workmen" (Babbage, Ch. XXII, [pp.] 280-81).^b

Now back to Richard Jones.

After describing *capital* as a specific relation of production, the essence of which is that ACCUMULATED WEALTH takes over the function

^a Marx quotes in French.—Ed.

^b Marx quotes partly in German and partly in French.—Ed.

OF ADVANCING WAGES, and the LABOUR FUND itself appears as "WEALTH SAVED FROM REVENUE AND EMPLOYED WITH A VIEW TO PROFIT", Jones outlines the CHANGES in the development of the productive powers characteristic of this mode of production. How the (ECONOMICAL) RELATIONS and consequently the social, moral and political STATE OF NATIONS CHANGES with the CHANGE in the MATERIAL POWERS OF PRODUCTION, is very well explained.

*"As communities *change their powers of production, they necessarily change their habits too*" ([p.] 48). "During their progress in advance, all the different classes of the community find that they are connected with other classes by *new relations*, are assuming *new positions*, and are surrounded by new moral and social dangers, and *new conditions* of social and political excellence"* (l.c.).

He describes the influence of the capitalist form of production on the development of the productive powers in the following way. But before coming to this, a few passages connected with those already quoted.

*"Great political, social, moral, and intellectual changes *accompany changes in the economical organisation of communities*, and in the agencies and the means, affluent or scanty, by which the tasks of industry are carried on. These changes necessarily exercise a commanding influence over the different political and social elements to be found in the populations where they take place; that influence extends to the intellectual character, to the habits, manners, morals, and happiness of nations" ([p.] 45). "England is the only great country which has taken ... the first step in advance towards perfection as a *producing machine*; the only country in which the population, agricultural as well as non-agricultural, is ranged under the direction of capitalists, and where the effects of their means and of the peculiar functions they alone can perform, are extensively felt, not only in the enormous growth of her wealth, but also in all the economical relations and positions of her population. Now, England, I say it with regret, but without the very slightest hesitation, is not to be taken as a safe specimen of [XVIII-1145] the career of a people so developing their productive forces" ([pp.] 48-49).

"The *general labour fund* consists: 1) of wages which the labourers themselves produce. 2) Of the revenues of other classes expended in the maintenance of labour. 3) Of capital, or a portion of wealth saved from revenue and employed in advancing wages with a view to profit. Those maintained on the first division of the labour fund we will call *unhired labourers*. Those on the second, *paid dependants*. Those on the third, *hired workmen*"* (wage labourers). *"The receipt of wages from any of these 3 divisions of the labour fund determines the *relations of the labourer with the other classes of society*, and so determines sometimes directly, sometimes more or less indirectly, the degree of continuity, skill, and power with which the tasks of industry are carried on" ([pp.] 51-52). "The first division, *self-produced wages*, maintains more than half, probably more than $\frac{2}{3}$, of the labouring population of the earth. These labourers consist everywhere of peasants who occupy the soil and labour on it... The second division of the labour fund, *revenue expended in maintaining labour*, supports by far the greater part of the *productive non-agricultural labourers* of the East. It is of some importance on the continent of Europe; while in England, again, it comprises only a few jobbing mechanics, *the relics of a larger body*. The third division of the labour fund, *capital*, is seen in England employing the great majority of her labourers, while it maintains

but a small body of individuals in Asia and in continental Europe maintains only the non-agricultural labourers; not amounting, probably, on the whole, to a quarter of the productive population" ([p.] 52). "I have not ... made any distinction as to *slave-labour*... The *civil rights* of labourers do not affect their *economical position*. Slaves, as well as freemen, may be observed subsisting on each part of the general fund"* ([p.] 53).

Although the "CIVIL RIGHTS" of the LABOURERS DO NOT AFFECT "THEIR ECONOMICAL POSITION", THEIR ECONOMICAL POSITION HOWEVER DOES AFFECT THEIR CIVIL RIGHTS. Wage labour on a national scale—and consequently, the capitalist mode of production as well—is only possible where the workers are personally free. It is based on the personal freedom of the workers.

Jones quite correctly reduces Smith's PRODUCTIVE and UNPRODUCTIVE labour to its essence—capitalist and non-capitalist labour—by correctly applying [the distinction made by] Smith between LABOURERS paid BY CAPITAL and those paid OUT OF REVENUE. Jones himself, however, apparently understands by *productive* and *unproductive* LABOUR, labour which enters into the production of MATERIAL [wealth] and that which does not. This follows from the passage quoted, where he speaks of the PRODUCTIVE LABOURERS WHO DEPEND ON REVENUE EXPENDED to maintain them [p. 52]. Further:

*"The portion of the community which is *unproductive of material wealth* may be *useful*, or it may be *useless*"* ([p.] 42). Further: *"It is reasonable, to consider the *act of production* as incomplete till the *commodity produced* has been placed in the hands of the person who is to consume it" (p. 35, note).*

The distinction made between the LABOURERS who live on CAPITAL and those who live on REVENUE is concerned with the form of labour. It expresses the whole difference between capitalist and non-capitalist modes of production. On the other hand, the terms productive and unproductive LABOURERS in the narrow sense [are concerned with] labour which enters into the production of *commodities* (production here embraces all operations which the commodity has to undergo from the FIRST PRODUCER to the CONSUMER) no matter what kind of labour is applied, whether it is manual labour or not ([including] scientific labour), and labour which does not enter into, and whose aim and purpose is not, the production of commodities. This difference must be kept in mind and the fact that all other sorts of activity influence MATERIAL PRODUCTION and vice versa in no way affects the necessity for making this distinction.

[XVIII-1146] We now come to the *development of the productive powers* by the capitalist mode of production.

*"It may be as well to point out here how this fact" //of the wages being advanced by capital// "affects their *powers of production*, or the *continuity*, the *knowledge*, and the *power*, with which labour is exerted... The capitalist who pays a

workman may assist *the continuity of his labour*. First, by *making such continuity possible*; secondly, by *superintending and enforcing* it. Many large bodies of workmen throughout the world ply the street for customers, and depend for wages on the *casual wants* of persons who happen at the moment to require their services, or to want the articles they can supply. The early missionaries found this the case in China... 'The artisans run about the towns from morning to night to seek custom. The greater part of Chinese workmen work in private houses. Are clothes wanted, for example? The tailor comes to you in the morning and goes home at night. It is the same with all other artisans. They are continually running about the streets in search of work, even the smiths, who carry about their hammer and their furnace for ordinary jobs. The barbers, too ... walk about the streets with an armchair on their shoulders, and a basin and boiler for hot water in their hands.'¹⁹⁴ This continues to be the case very generally throughout the East, and partially in the Western World. Now these workmen cannot *for any length of time work continuously*. They must ply like a hackney coachman, and when no customer happens to present himself they must be idle. If in the progress of time a change takes place in their economical position, if they *become the workmen of a capitalist who advances their wages beforehand*, two things take place. First, they *can now labour continuously*; and, secondly, an agent is provided, *whose office and whose interest it will be, to see that they do labour continuously ... the capitalist has reserves ... to wait for a customer...* Here, then, is an *increased continuity in the labour* of all this class of persons. *They labour daily from morning to night*, and are *not interrupted* by waiting for or seeking the customer, who is ultimately to consume the article they work on. But the *continuity of their labour*, thus made *possible*, is secured and improved by the *superintendence of the capitalist*. He *has advanced their wages*; he *is to receive the products of their labour*. It is *his interest and his privilege to see that they do not labour interruptedly or dilatorily*. The continuity of labour thus secured, the effect even of this change on the productive power of labour is very great... *The power is doubled*. Two workmen steadily employed *from morning to night*, and from year's end to year's end, will probably produce more than 4 desultory workmen, who consume much of their time in running after customers, and in recommencing suspended labour"* ([p.] 37 sqq.).

Firstly. The transition from LABOURERS who perform CASUAL SERVICES—making coats, trousers, etc., in the LANDOWNER'S house—to workers employed by capital, is already very well described by Turgot.^a *Second*. Although CONTINUITY certainly distinguishes capitalist LABOUR from the form described by Jones, it does not distinguish [capitalist labour] from slave production carried on on a large scale. *Third*. It is incorrect to describe the *increased amount of labour* brought about by its long duration and continuity as an increase in productive power or the POWER of LABOUR. This [occurs] only in SO FAR AS THE CONTINUITY AUGMENTS THE PERSONAL SKILL OF THE LABOURERS. By [increased] POWER, we understand the greater productivity of A GIVEN QUANTITY OF LABOUR EMPLOYED, NOT ANY CHANGE IN THE QUANTITY EMPLOYED. The latter belongs rather to the formal subordi-

^a See [A. R. J.] Turgot, *Réflexions sur la formation et la distribution des richesses* [1766]. In: *Oeuvres de Turgot*, new edition by E. Daire, Vol. 1, Paris, 1844, p. 10 sqq.¹⁹⁵—Ed.

nation of labour to capital and it only evolves fully with the development of fixed capital. (We shall deal with this soon.)

Jones correctly emphasises the fact that the capitalist regards labour as his property, no part of which must be wasted. With regard to LABOUR which is maintained directly by REVENUE, this is a matter of the use value of labour only. [XVIII-1147] Furthermore, Jones correctly emphasises that the SEDENTARY labour of the NON-AGRICULTURAL LABOURERS lasting from morning to night is by no means something which arises spontaneously, but is itself a *product* of economic development. In contrast to the Asiatic form and to the Western form [of labour] (prevailing in former times, partly even today) in the countryside, the urban labour of the Middle Ages already constitutes a great advance and serves as a preparatory school for the capitalist mode of production, as regards the CONTINUITY and STEADINESS OF LABOUR.

//About this CONTINUITY OF LABOUR:

*“The capitalist, too, keeps, as it were, an *echo-office* for labour; he *insures against* the uncertainty of finding a vent for labour, which uncertainty would, but for him, prevent the labour, in many cases, from being undertaken. The trouble of looking for a purchaser, and of going to a market, is reduced, by his means, to a comparatively small compass” * (*An Inquiry into Those Principles, Respecting the Nature of Demand and the Necessity of Consumption etc.*, London, 1821, [p.] 102).

In the same work:

*“Where the capital is in a great degree *fixed*, or where it is sunk on land ... the trader is *obliged* to continue to employ, much more nearly (than if there had been less fixed capital), the same amount of circulating capital as he did before, in order not to cease to derive *any* profit from the part that is fixed” * (l.c., [p.] 73).//

//*“Of the state of manners to which the dependence of the workmen on the revenues of their customers has given birth in China, you would, perhaps, get the most striking picture in the Chinese Exhibition, so long kept open by its American proprietor in London. It is thronged with figures of artisans with their small packs of tools, plying for customers, and idle when none appear—painting vividly to the eye the necessary absence, in their case, of *that continuity of labour* which is one of the three great elements of its productiveness, and indicating sufficiently, to any well-informed observer, the *absence also of fixed capital and machinery*, hardly less important elements of the fruitfulness of industry” * (Jones, l.c., [*Text-book of Lectures on the Political Economy of Nations*, p.] 73). *“In India, where the admixture of Europeans has not changed the scene, a like spectacle may be seen in the towns. The artisans in rural districts are, however, provided for there in a peculiar manner... Such handicraftsmen and other non-agriculturists as were actually necessary in a village were maintained by an assignment of a portion of the joint revenues of the villagers, and throughout the country bands of hereditary workmen existed on this fund, whose industry supplied the simple wants and tastes which the cultivators did not provide [for] by their own hands. The position and rights of these rural artisans soon became, like all rights in the East, hereditary. The band found its customers in the other villagers. The villagers were stationary and abiding, and so were their handicraftsmen... The *artisans of the towns* were and are in a very different position. They received their wages from what was

substantially the same fund—the surplus revenue from land—but modified in its mode of distribution and its distributors, so as to destroy their *sedentary permanence*, and produce frequent, and usually disastrous migrations ... such *artisans are not confined to any location by dependence on masses of fixed capital*”* (as in Europe, for example, where COTTON and other MANUFACTORIES are FIXED IN DISTRICTS where there is WATERPOWER, OR ABUNDANT STEAM-PRODUCING FUEL, and CONSIDERABLE MASSES OF WEALTH have been CONVERTED INTO BUILDINGS and MACHINERY, etc.). *“...The case [is] different when the sole [XVIII-1148] dependence of the labourers is *on the direct receipt* of part of the revenues of the persons who consume the commodities the artisans produce. *They are not confined to the neighbourhood of any fixed capital*. If their customers change their location for long—nay, sometimes for very short—periods, the non-agricultural labourers must follow them, or starve” (Jones, l.c., [pp.] 73-74). “The greater part of* this FUND for the HANDICRAFTSMEN IN ASIA is *distributed by the State and its officers. The *capital*^a was, necessarily, the principal centre of distribution” ([p.] 75). “From Samarkand, southwards to Beejapoor and Seringapatam, we can trace the ruins of vanishing capitals, of which the population left them *suddenly*”* (and not as in other countries [as a result of a gradual] decline) **“as soon as new centres of distribution of [the] royal revenues, i.e. of the whole of the surplus produce^b of the soil, were established”** (l.c., [p.] 76).

See *Dr. Bernier*,^c who compares the Indian towns to army camps. This is due to the form of landed property which exists in Asia.//

We now proceed from the *CONTINUITY* to the *DIVISION OF LABOUR*, [the development of] *KNOWLEDGE*, use of machinery, etc.

*“But the *effect of the change of paymasters on the continuity of labour* is by no means yet exhausted. The *different tasks of industry may now be further divided*... If he” (the capitalist) “employ more than one man, he can divide the task between them; he can keep each individual steadily at work at the portion of the common task, which he performs the best... If the capitalist be rich, and keep a sufficient number of workmen, then the task may be *subdivided* as far as it is capable of subdivision. The continuity of labour is then complete... Capital, by assuming the function of advancing the wages of labour, has now, by successive steps, perfected its *continuity*. It, at the same time, increases the *knowledge* and *skill* by which such labour is applied to produce any given effect. The class of capitalists are from the first partially, and then become ultimately completely, *discharged from the necessity of manual labour*. Their *interest is that the productive powers of the labourers* they employ should be the greatest possible. *On promoting that power their attention is fixed*, and almost exclusively fixed. More thought is brought to bear on the best means of effecting all the purposes of human industry; *knowledge* extends, multiplies its fields of action, and assists industry in almost every branch... But further still as to *mechanical power*. Capital employed not to *pay*, but to *assist labour*, we will call *auxiliary capital*.”*

//He therefore means by this term the part of constant capital which is not made up of *RAW MATERIAL*.//

^a Marx adds the German term in brackets.—*Ed.*

^b Jones has “surplus revenues”.—*Ed.*

^c F. Bernier, *Voyages ... Contenant la description des états du Grand Mogol...*, Vol. 2, Paris, 1830, p. 231 sqq.¹⁹⁶—*Ed.*

*“The national mass of auxiliary capital may, certain conditions being fulfilled, increase indefinitely: the number of labourers remaining the same. At every step of such increase, [there is an increase] in the third element of the efficiency of human labour, namely, its *mechanical power*... Auxiliary capital thus increases its mass relatively to the population... What conditions, then, must be fulfilled that the mass of auxiliary capital employed to assist them” //the capitalist’s workmen// “may increase? There must concur 3 things:

“1) the means of saving the additional capital;

“2) the will to save it;

“3) some invention by which it may be [made] possible, through the use of such capital, that the productive powers of labour may be increased, and increased to an extent which will make it, in addition to the wealth it before produced, reproduce the additional auxiliary capital used, as fast as it is destroyed, and also some profit on it... When the full amount of auxiliary capital, that in the actual state of knowledge can be used profitably, has already been supplied, ... an increased range of knowledge can alone point out the means of employing more. Further, such employment is only practicable if the means discovered increase the power of labour sufficiently to reproduce the additional capital in the time it wastes away. If this be not the case, the capitalist must lose his wealth... But the increased efficiency of the labourers must, besides this, produce some profit, or he would have no motive for employing his capital in production at all... All the while, that by employing fresh masses of auxiliary capital, these two objects can be effected, there is no definite and final limit to the progressive employment of such fresh masses of capital. They may go on increasing co-extensively with the increase of knowledge. But knowledge is never stationary; and, as it extends itself from hour to hour in all directions, from hour to hour some new implement, some new machine, some new motive force may present itself, which will enable the community profitably to add something to the mass of auxiliary capital by which it assists its industry, and so increase the difference between the productiveness of its labour and that of poorer and less skilful nations” (l.c. [pp. 38-41]).

[XVIII-1149] First, with regard to the statement that the INVENTIONS, OR APPLIANCES OR CONTRIVANCES must be of such a kind, * “that the productive powers of labour are increased to such an extent as to make it, in addition to the wealth it before produced, reproduce the additional auxiliary capital used, as fast as it is destroyed” *, or * “reproduce the additional capital in the time it wastes away” *. * This means nothing more than that the wear and tear is replaced *au fur et à mesure (que)*^a IT TAKES PLACE, OR, THAT THE ADDITIONAL CAPITAL IS REPLACED IN THE AVERAGE TIME DURING WHICH IT IS CONSUMED. A portion of the value of the product, or, what amounts to the same thing, a portion of the product, must replace the CONSUMED AUXILIARY CAPITAL, and, at such a rate that if, in a given period of time, it is WHOLLY CONSUMED, IT MAY BE REPRODUCED WHOLLY, OR A NEW CAPITAL OF THE SAME KIND MAY TAKE THE PLACE OF THE CAPITAL GONE BY. But what is the condition for this? The productivity of labour must rise to such an extent through the application of the ADDITIONAL AUXILIARY

^a As soon as.—Ed.

CAPITAL that a part of the product can be deducted to replace this component part either *in natura* or by EXCHANGE.

The reproduction of the AUXILIARY CAPITAL takes place if the productivity is so great, in other words, if the increased amount of output produced during the working day of the same length is such that a unit of a particular commodity is *cheaper* than a unit produced by the former method, although the aggregate price of the *total output* covers (for example) the annual depreciation of the machinery, that is, the amount of depreciation calculated per unit of the commodity is insignificant. If the part which replaces the depreciation, and secondly the part which replaces the value of raw material, are deducted from the total product, then there remains a part which pays for the wages and a part which covers the profit and even yields more surplus value [although the price per unit remains the same as] it was previously... *An increase in the product could* take place without fulfilling this condition. If, for example, the number of pounds of twist were to increase tenfold (instead of a hundredfold, etc.) and if the VALUE of the wear and tear of the machinery which has to be added to the price were to drop from $\frac{1}{6}$ to $\frac{1}{10}$, then the twist spun by machinery would be dearer than that produced by spindle. If an ADDITIONAL £100 of CAPITAL in the form of guano were used in agriculture and if this guano had to be replaced in a year, and if the value of a qr (produced by the old method)=£2, then 50 ADDITIONAL qrs would have to be produced merely to replace the depreciation.¹⁹⁷ And without this the additional capital could not be used (profit is here disregarded).

Jones' remark that the ADDITIONAL CAPITAL MUST BE "REPRODUCED" (of course from the sale of the product or *in natura*) "IN THE TIME IT WASTES AWAY" simply means that the commodity must replace the wear and tear embodied in it. In order to begin reproduction anew, all the value elements contained in the commodity must be replaced by the time when its reproduction is to begin again. In agriculture, this reproduction time is given as a result of natural conditions, and the period of time in which the wear and tear must be replaced is given, *ni plus ni moins*^a as the time in which all the other value elements of grain, for example, have to be replaced. In order that the reproduction process can begin, i.e. that the renewal of the real process of production can take place, the commodity must pass through the process of circulation, that is, the commodity must be sold (in so far as it is not replaced *in*

^a In exactly the same way.—*Ed.*

natura, like the seeds) and the money for which it is sold converted into elements of production again. In the case of grain and other agricultural products, there are certain specific periods for their reproduction dictated by the seasons, that is, extreme *limits*, definite limits are set to the duration of the process of circulation.

Second: Such definite limits to the circulation process arise in general from the nature of commodities as use values. All commodities deteriorate sooner or later, although the *ultima Thule*^a of their existence varies. If they are not consumed by people (either in the production process or individually), then they are consumed by elemental natural forces. They decay, and finally they disintegrate. If their use value is destroyed, then their exchange value goes down the drain and that puts an end to their reproduction. The final limits of their circulation time are therefore determined by the natural *termini*^b of reproduction proper to them as use values.

Third: In order that the production process of the commodities may be continuous, that is, so that one [XVIII-1150] part of capital may be continuously in the production process and the other continuously in the process of circulation, very varied divisions of capital must take place, in accordance with the natural limits of the periods of reproduction, or the limits [of existence] of the different use values, or the different spheres of operation of capital.

Fourth: This applies to all the value elements of the commodity simultaneously. But, in the case of commodities in the production of which a great deal of fixed capital is employed, there is, in addition to the limits which their own use values impose on the circulation process, another determining factor, namely, the use value of fixed capital. IT WASTES AWAY IN A CERTAIN TIME AND, THEREFORE, MUST BE REPRODUCED IN A GIVEN PERIOD. Let us assume, for example, that a ship lasts 10 years, or a spinning machine 12. The freight carried during the 10 years, or the twist sold during the 12 years, must be sufficient for a new ship to replace the old one after 10 years and for a new spinning machine to replace the old one after 12. If the fixed capital is used up in $\frac{1}{2}$ year, then the product must be returned from circulation in this period.

Besides the natural mortality periods for commodities as use values—periods which vary greatly amongst different use values—and besides the requirements of the continuity of the production

^a A remote goal or end (literally: the farthest Thule, a land considered by the ancients to be the northernmost part of the habitable world).—*Ed.*

^b Periods.—*Ed.*

process, which set even more varied final limits to the circulation time, according to whether the commodities must remain in the production sphere or can remain in the circulation sphere for a longer or shorter period of time, a third factor is thus added, namely, the different mortality periods, and therefore different requirements of reproduction, of the AUXILIARY CAPITAL used in the production of commodities.

Jones declares that the second condition [for the use of auxiliary capital] is the "profit" which the AUXILIARY CAPITAL must "produce", and this is the *conditio sine qua non* for all capitalist production, regardless of the particular form in which the capital is employed. Nowhere does Jones explain how he conceives the genesis of this profit. But since he merely derives it from "LABOUR", and the profit yielded by the AUXILIARY CAPITAL simply from the increased EFFICIENCY OF THE LABOUR OF THE WORKMEN, it must consist of absolute or relative SURPLUS LABOUR. It arises in general from the fact that after deducting the *part of the product* which either *in natura* or by EXCHANGE replaces the constituent parts of capital which consist either of raw materials or of instruments of labour, the capitalist, firstly, pays WAGES from the remainder of the product, and secondly, appropriates a part of it as SURPLUS PRODUCE, which he either sells or consumes *in natura*. (This latter is not a significant factor in capitalist production and occurs only in a few exceptional cases, when the capitalist directly produces necessary means of subsistence.) This SURPLUS PRODUCE however, just as the other parts of the product, consists of the workers' realised labour, but labour which is not paid for; this product of labour is appropriated by the capitalist without any equivalent.

What is new in Jones' presentation is that the increase in the AUXILIARY CAPITAL over and above a certain level is contingent on an INCREASE OF KNOWLEDGE. Jones declares that the necessary conditions are: 1) THE MEANS TO SAVE THE ADDITIONAL CAPITAL; 2) THE WILL TO SAVE IT; 3) SOME INVENTION by means of which the productive power of labour is increased sufficiently to reproduce the ADDITIONAL CAPITAL and to produce a profit on it. What is necessary above all is that there should be a SURPLUS PRODUCE either in kind or CONVERTED INTO MONEY. In the production of cotton, for example, the planters in America (like those in India at the present time) were able to plant large areas, but did not have the means for converting the raw cotton into cotton by means of CLEANING at the right time. Part of the cotton rotted in the fields. This kind of thing was ended by the invention of the COTTON GIN. Part of the product is now converted into COTTON GIN. But the COTTON GIN does not merely replace its own

cost; it also increases the SURPLUS PRODUCE. New markets have the same effect, for instance, furthering the conversion of skins into money (likewise improved transport). Each new machine which consumes coal is a means for converting SURPLUS [produce] existing in the shape of coal into capital. The conversion of a part of the SURPLUS [produce] into AUXILIARY CAPITAL can take place in two ways: [firstly,] increase in the AUXILIARY CAPITAL already in existence, its reproduction on a larger scale; [secondly,] discovery of new use values or of a new use for well-known use values, and new inventions of machinery or of MOTIVE POWER leading to the creation of new kinds of AUXILIARY CAPITAL. In this context, EXTENSION OF KNOWLEDGE is obviously one of the conditions for increasing the AUXILIARY CAPITAL or, what amounts to the same thing, for the conversion of SURPLUS PRODUCE OR SURPLUS MONEY (foreign trade is important in this connection) into SURPLUS OF AUXILIARY CAPITAL. For example, the telegraph opens up a whole new field for the investment of AUXILIARY CAPITAL, so do the railways, etc., and so does the whole gutta-percha and INDIAN RUBBER production.

[XVIII-1151] This point about the EXTENSION OF KNOWLEDGE is important.

Consequently, accumulation does not have to set new labour in motion, it may simply direct the labour previously employed into new channels. For example, the same mechanical atelier which previously made [hand] looms now makes power-looms and some of the weavers are taken over by [mills using] the changed methods of production while the others are thrown on to the street.

When a machine replaces labour, it always demands less new labour (for its own production) than it replaces. Perhaps the old labour is simply given a new direction. In any case, labour is freed, which after a greater or lesser amount of trials and tribulations may be used in other ways. The human material FOR A NEW SPHERE OF PRODUCTION is thus provided. As far as the *direct* freeing of capital is concerned, it is not the capital which buys the machine which becomes free, BECAUSE IT IS INVESTED IN IT. And even assuming that the machine is cheaper than the amount of wages it replaces, more raw material, etc., will be required. If the workers now dismissed previously cost £500 and the new machine costs 500 too, then the capitalist previously had an outlay of 500 every year, whereas the machine may perhaps last 10 years, so that IN FACT he now has an outlay of only 50 a year. But what at any rate becomes free (after deducting the [expenditure for] the larger number of workers employed in the manufacture of the machine and in AUXILIARY

MATTERS connected with it, such as coal [production], etc.) is the capital which constituted the income of the [dismissed] workers or that [employed in the production of commodities] which these workers bought with their wages. This continues to exist as it did previously. If workers are simply replaced as MOTIVE POWER without the machinery itself being substantially altered, for example, if wind or water [now operate the machinery] where this was done previously [by workers], two lots of capital are freed, the capital previously spent on paying the workers and the capital for which their money income was exchanged. This is an example used by Ricardo.^a

But one part of the product previously converted into wages is now always reproduced as AUXILIARY CAPITAL.

A large part of the labour previously used directly in the production of means of subsistence is now used in the production of AUXILIARY CAPITAL. This too is in contradiction to Adam Smith's view, according to which the accumulation of capital = the employment of *more* productive labour.^b Apart from the examples considered above, the result may be merely a CHANGE in the APPLICATION OF LABOUR and a WITHDRAWAL of labour from the direct production of means of subsistence and its transfer to the production of means of production, railways, bridges, machinery, canals and so on.

// How important the existing amount of means of production and the existing scale of production are for accumulation [is described in the following]:

"The astonishing expedition with which a great cotton *factory*, comprehending spinning and weaving, can be erected in Lancashire, arises from the *vast* collection of *patterns* of every variety, from those of gigantic steam engines, waterwheels, iron girders and joists, down to the smallest member of a throstle or loom in possession of the engineers, mill-wrights, and machine makers. In the course of last year Mr. Fairbairn equipped waterwheels equivalent to 700 horses power and steam engines to 400 horses power from his engineer factory alone, independent of his mill-wright and steam-boiler establishment. Hence, whenever capital comes forward to take advantage of improved demand for goods, the means of fructifying it are provided with such rapidity, that it may realise its own amount in profit, ere an analogous *factory* could be set a-going in France, Belgium or Germany" (A. Ure, *Philosophie des manufactures etc.*, Vol. I, Paris, 1836, [pp.] 61-62).^c

^a See D. Ricardo, *On the Principles of Political Economy, and Taxation*, p. 336.¹⁹⁸—*Ed.*

^b See A. Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, Vol. I, London, 1835, p. 400 sqq.—*Ed.*

^c Marx quotes in French. Here the original English is reproduced (see A. Ure, *The Philosophy of Manufactures...*, London, 1835, p. 39).—*Ed.*

[XVIII-1152] With development, machinery becomes cheaper, partly relatively—in comparison with its FORCE—and partly absolutely; at the same time, however, a massive concentration of machinery takes place in the workshop so that its value increases in proportion to the living labour employed, although the value of its individual components declines.

The driving force—the machine which produces the MOTIVE POWER—becomes cheaper as the machinery which TRANSMITS the power and the machine which the power operates, are improved, as friction is reduced, etc.

“The facilities resulting from the employment of self-acting tools have not only improved the accuracy and accelerated the construction of the machinery of a mill, but have also lowered its cost and increased its mobility in a remarkable degree. At present a throstle frame, made in the past manner, may be had complete at the rate of 9s. 6d. per spindle, and a MULE JENNY at about 8s. per spindle including the patent licence for the latter. The spindles in cotton factories move with so little friction that 1 horse power drives 500 on the fine hand mule, 300 on the MULE JENNY, and 180 on the throstle; which power includes all the subsidiary preparation machines as carding, roving, etc., a power of 3 horses is adequate to drive 30 large looms with their dressing machines” (l.c., [pp.] 62-63 [Engl. ed., p. 40]).^a//

*“Over by far the greater part of the globe, the great majority of the labouring classes do not even receive their wages from capitalists; they either produce them themselves, or receive them from the revenue of their customers. The great primary step has not been taken which secures the continuity of their labour; they are aided by such knowledge only, and such an amount of mechanical power as may be found in the possession of persons labouring with their own hands for their subsistence. The skill and science of more advanced countries, the giant motive forces, the accumulated tools and machines which those forces may set in motion, are absent from the tasks of the industry which is carried on by such agents alone” * ([R. Jones, *Text-book of Lectures on the Political Economy of Nations...*, p.] 43).

// In England herself: *“Take agriculture... A knowledge of good farming is spread thinly, and with wide intervals, over the country. A very small part of the agricultural population is aided by all the capital which ... might be available in this branch of the national industry... The working in these” // great manufactories // “is the occupation of only a small portion of our non-agricultural labourers. In country workshops, in the case of all handicraftsmen and mechanics who carry on their separate task with little combination, there the division of labour is incomplete, and its continuity consequently imperfect... Abandon the great towns, observe the broad surface of the country, and you will see what a large portion of the national industry is lagging at a long distance from perfection, in either continuity, skill, or power” * (l.c., [p.] 44).//

Capitalist production leads to separation of science from labour and at the same time to the application of science to material production.

With regard to rent, Jones remarks correctly:

^a Marx quotes in French.—Ed.

Rent, in the modern sense of the term, which depends entirely on profit, presupposes:

“the power of moving capital and labour from one occupation to another ... the mobility of capital and labour, and in countries where agricultural capital and labour have no such mobility ... we cannot expect to observe any of the results which we see to arise here from that mobility exclusively” (l.c., p. 59).

This “MOBILITY OF CAPITAL AND LABOUR” is, in general, the *real* prerequisite for the formation of a general rate of profit. It presupposes indifference to the *specific form* of labour. In reality friction takes place (at the expense of the working class) between the one-sided character which the division of labour and machinery impose on *labour capacity* on the one hand, while on the other hand, it confronts capital // which is thereby differentiated from its undeveloped form in craft-guild industry // merely as the living potentiality of any type of labour in general, which is given this or that direction according to the profit that can be made in this or that sphere of production, so that different masses of labour are transferable from one sphere to another.

In Asia, etc., *“the body of the population consists of labouring peasants; systems of cultivation [XVIII-1153] imperfectly developed, afford long intervals of leisure. As the peasant produces his own food, he also produces most of the other primary necessities which he consumes ... his dress, his implements, his furniture, even his buildings; for there is in this class little division of occupations. The fashions and habits of such a people do not change; they are handed down from parents to children; there is nothing to alter or disturb them”* ([p.] 97).

On the other hand, the capitalist production, whose characteristic features are MOBILITY OF CAPITAL AND LABOUR and continual REVOLUTIONS in the modes of production, and therefore in the relations of production and commerce and the way of life, leads to great MOBILITY IN THE HABITS, MODES OF THINKING, etc., of the PEOPLE.

Compare the following with the above-quoted passage about the “INTERVALS OF LEISURE” and the “IMPERFECTLY DEVELOPED SYSTEMS OF CULTIVATION”.

*“Where a steam engine is employed on a farm, it forms *part of a system* which employs most labourers in agriculture, and [is] in all cases [associated] with a reduction [in the number] of horses” (“[On] the Forces used in Agriculture”. [A] Paper read by Mr. John C. Morton at the Society of Arts [on December 7, 1860 199].* And

*“The *difference of time* required to complete the products of agriculture, and of other species of labour, is the main cause of the great dependence of the agriculturists. They cannot bring their commodity to market in less time than a year. For that whole period they are obliged to borrow from the shoemaker, the tailor, the smith, the wheelwright, and the various other labourers, whose products they want and which are completed in a few days or weeks. Owing to this natural circumstance, and owing to the more rapid increase of the wealth produced by other labour than that of agriculture, the monopolisers of all the land, although

they have also monopolised legislation, are unable to save themselves and their servants, the farmers, from becoming the most dependent class of men in the community" (Hodgskin, *Popular Political Economy*, p. 147,* note).²⁰⁰

The capitalist differs from capital in that he must live, and therefore must consume part of the SURPLUS VALUE as revenue, daily and hourly. Thus, the longer the period of production before the capitalist can bring his commodity to market, or the longer the period of time before he gets RETURNS from the sale of his commodities, the longer he must live either on credit during the intervening time—a matter we are not discussing here—or he must HOARD a STOCK OF MONEY as large as he spends as revenue. He must *advance* his own revenue for a longer period. His capital must be larger. He is obliged to leave a part of it always unused, as a consumption fund. // In small-scale farming, therefore, domestic industry is combined with agriculture; supplies for the year, etc. //

We now come to Jones' teaching on *accumulation*. His original contribution so far has been that it is by no means necessary for accumulation to arise from profit; and secondly, that THE ACCUMULATION OF AUXILIARY CAPITAL DEPENDS UPON THE ADVANCE OF KNOWLEDGE. He limits the latter to the discovery of new MECHANICAL APPLIANCES, MOTIVE FORCES, etc. But it is true in general. For example, if corn is used as raw material in the preparation of spirits, then a NEW SOURCE OF ACCUMULATION is opened up, BECAUSE THE SURPLUS PRODUCE MAY BE CONVERTED INTO NEW FORMS, SATISFY NEW WANTS, AND ENTER AS A PRODUCTIVE ELEMENT INTO A NEW SPHERE OF PRODUCTION. The same applies if starch, etc., is prepared from corn. The sphere of exchange of these particular commodities and of all commodities is thereby expanded. The same takes place when coal is used for lighting, etc.

Foreign trade, too, is of course a GREAT AGENT IN THE PROCESS OF ACCUMULATION, because it tends to increase the variety of use values and the volume of commodities.

What Jones says first of all is concerned with the *connection between accumulation and the rate of profit*. (He is by no means very clear about the origin of the latter.)

* "The power of a nation to accumulate capital from profits *does not vary with the rate of profit* ... on the contrary, the power to accumulate capital from profits *ordinarily varies inversely as the rate of profit*, that is, it is great where the rate of profit is low, and small where the rate of profit is high"* ([Jones, *Text-book of Lectures...*, p.] 21). Adam Smith says: [XVIII-1154] * "Though that part of the revenue of the inhabitants which is derived from the profits of stock is always much greater in rich, than in poor, countries, it is *because the stock is much greater*; in *proportion to the stock*, the profits are generally much less" (*Wealth of Nations*, Vol. II, Ch. 3 [p. 406]).

"In England and Holland, the *rate of profit* is lower than in any other part of Europe" ([p.] 21). "During the period in which her" (England's) "wealth and capital have been increasing the most rapidly, the *rate of profit* has been gradually declining" ([pp.] 21-22). "The *relative masses of the profits produced* ... depend not alone on the *rate of profit* ... but on the *rate of profit taken in combination with the relative quantities of capital employed*" ([p.] 22). "The increasing quantity of capital of the richer nation ... is also usually accompanied by a decrease in the rate of profits, or a decrease in the proportion, which the annual revenue derived from the capital employed, bears to its gross amount" (l.c.). "If it be said that *all other things being equal, the rate of profit will determine the power of accumulating from profit*, the answer is, that the case, if practically possible, is too rare to deserve consideration. We know, from observation, that a declining rate of profit is the usual accompaniment of *increasing differences in the mass of capital* employed by different nations, and that, therefore, while the rate of profit in the richer nations declines, *all other things are not equal*. If it be asserted that the decline of profits may be great enough to make it impossible to accumulate from profits at all, the answer is, that it would be foolish to argue on the assumption of such a decline, because long before the rate of profits had reached such a point, capital would go abroad to realise greater profits elsewhere, and that the power of exporting will always establish some limit below which profits will never fall in any one country, *while there are others in which the [rate of] profit is greater*"* ([pp.] 22-23).

"Apart from the PRIMARY SOURCES OF ACCUMULATION, [there are] DERIVATIVE ONES, such as, for example, the OWNERS OF [the] NATIONAL DEBT, officials, etc." ([p.] 23).

ALL THIS IS *bel et bon*.^a It is quite correct that the *amounts ACCUMULATED* by no means depend solely on the rate of profit, but on the rate of profit multiplied by the capital employed, that is, just as much on the size of the capital advanced. If the capital employed= C , and the rate of profit= r , then accumulation= Cr , and it is clear that this product can increase if C grows more quickly than r declines. And this is indeed A FACT DERIVED FROM OBSERVATION. But this does not explain the *cause*, the *raison d'être*, of this FACT. Jones himself came very near to it when he made the observation that the AUXILIARY CAPITAL continuously increases RELATIVELY TO THE WORKING POPULATION BY WHICH IT IS PUT INTO MOTION.

In so far as the decline in profit is due to the cause mentioned by Ricardo—the RISE OF RENT—the ratio of the total SURPLUS VALUE to the capital employed remains unchanged. But one part of it—RENT—increases, at the expense of the other part, i.e. of PROFIT; this leaves the proportion of the total SURPLUS VALUE, of which PROFIT, INTEREST AND RENT are only categories, [to the total capital] unchanged. Thus, in fact, Ricardo denies the phenomenon itself.

On the other hand, the mere decline in the rate of interest proves nothing in itself, just as its rise proves nothing, although it does indeed always indicate the MINIMUM RATE below which profit

^a Well and good.—Ed.

cannot fall. For profit must always be higher than the AVERAGE [rate of] INTEREST.

[XVIII-1155] Apart from the terror which the law of the declining rate of profit inspires in the economists, its most important corollary is the presupposition of a constantly increasing concentration of capitals, that is, a constantly increasing decapitalisation of the smaller capitalists. This, on the whole, is the result of all laws of capitalist production. And if we strip this fact of the contradictory character which, on the basis of capitalist production, is typical of it, what does this fact, this trend towards centralisation, indicate? Only that production loses its private character and becomes a social process, not formally—in the sense that all production subject to exchange is social because of the absolute dependence of the producers on one another and the necessity for presenting their labour as abstract social labour ([by means of] money)—but in actual fact. For the means of production are employed as communal, social means of production and therefore not [determined] by [the fact that they are] the property of an individual, but by their relation to production, and the labour likewise is performed on a social scale.

A separate section in Jones' work is headed "[On the] CAUSES WHICH DETERMINE THE INCLINATION TO ACCUMULATE".

*"1) Differences of temperament and disposition in the people.

"2) Differences in the proportions in which the national revenues are divided among the different classes of the population.

"3) Different degrees of security for the safe enjoyment of the capital saved.

"4) Different degrees of facility in investing profitably, as well as safely, successive savings.

"5) Differences in the opportunities offered to the different ranks of the population to better their positions by means of savings"* ([p.] 24).

All these 5 causes, in fact, boil down to this—that accumulation depends on the stage of the *capitalist mode of production* reached by a particular nation.

D'abord No. 2. Where capitalist production exists in a developed form, profit constitutes the chief SOURCE of accumulation, that is, the capitalists have concentrated the greater part of the NATIONAL REVENUE in their hands and even a section of the LANDLORDS seeks to capitalise [their revenue].

No. 3. Security (in the legal and police sense) increases in proportion to the degree to which the capitalists secure control of the state administration.

No. 4. As capital develops, the spheres of production increase on the one hand, and, on the other hand, the organisation of

credit [develops] in order to collect every FARTHING in the hands of the MONEY-LENDERS (bankers).

No. 5). In capitalist production, the improvement of one's position depends solely on money, and everyone can delude himself into believing that he can become a Rothschild.

There remains No. 1). All peoples do not have the same predisposition towards capitalist production. Some primitive peoples, such as the Turks, have neither the temperament nor the DISPOSITION to it. But these are exceptions. The development of capitalist production creates an AVERAGE level of bourgeois society and therefore an average level of temperament and disposition amongst the most varied peoples. [It is] as truly cosmopolitan as Christianity. This is why Christianity is likewise the special religion of capital. In both it is only men who count. One man in the abstract is worth just as much or as little as the next man. In the one case, all depends on whether or not he has faith, in the other, on whether or not he has credit. In addition, however, in the one case, predestination has to be added, and in the other case, the accident of whether or not a man is born with a silver spoon in his mouth.

The source of surplus value and PRIMITIVE RENT:

*"When land has been appropriated and cultivated, such land yields, in almost every case, to the labour employed on it, *more than is necessary* to continue the kind of cultivation already bestowed upon it. *Whatever it produces* [XVIII-1156] *beyond this*, we will call *its surplus produce*. Now this surplus produce is *the source of primitive rents*, and limits the extent of such revenues, as can be continuously derived from the land by its *owners*, as distinct from its *occupiers*"* ([p.] 19).

These PRIMITIVE RENTS are the first social form in which SURPLUS VALUE is represented, and this is the obscure conception which forms the foundation of the theory of the Physiocrats.

Both absolute and relative SURPLUS VALUE have this in common that they presuppose a certain level of the productive power of labour. If the entire working day (available labour time) of a man (any man) were only sufficient to feed himself (and at best his FAMILY as well), then there would be NO SURPLUS LABOUR, SURPLUS VALUE AND SURPLUS PRODUCE. This prerequisite of a certain level of productive power is based on the natural productiveness of land and water, the NATURAL SOURCES OF WEALTH. It is different in different countries, etc. Needs are simple and crude in early times and the MINIMUM PRODUCE required for the maintenance of the producers themselves is consequently small, and so is the SURPLUS PRODUCE. On the other hand, the number of people who live off the SURPLUS PRODUCE in those circumstances is likewise very small, so that they

receive the sum total of the small amounts of SURPLUS PRODUCE obtained from a relatively large number of producers.

The basis for absolute SURPLUS VALUE—that is, the real precondition for its existence—is the *natural fertility of the land*, of nature, whereas relative SURPLUS VALUE depends on the development of the social productive forces.

And with this we finish with Jones.

Dominance of the merchant estate: In the part of London called Tower Hamlets, one finds very extensive furniture-making. There exists there a division of labour, in the sense that production as a whole is subdivided, falls into a large number of mutually independent branches of business. One shop only makes chairs, another makes tables, another again cupboards, etc. But these shops are run *plus ou moins*^a on a handicraft basis, by a small master-craftsman with a few journeymen. Still their output is too large for them to work on direct orders from private individuals. Their customers are the owners of furniture warehouses. On Saturday the master visits them and sells his product, and [...] ^b there is haggling over the price as in a pawnshop over the loan to [be] extended for one article of dress or another, etc. These master-craftsmen must sell weekly, if only to be able [to buy] the raw materials for the next week. UNDER THESE CIRCUMSTANCES they are, properly speaking, merely MIDDLEMEN between the trader and their own [work]ers. The trader is the capitalist proper, and he pockets the greater part of the SURPLUS VALUE. Along these lines [... the] transition to manufacture from branches which were previously carried on on the handicraft basis or as subsidiary branches [of rural] industry. Thus in Lyons, etc., Nottingham, etc., the trader is called the *manufacturer*, although those MIDDLEMEN ... exploit [... the] workers. This is the transition to manufacture or also to large-scale industry, depending on the level of technological development of small independent production. Where it is already based on handicraft-type machines—or machines used WITHIN THE LIMITS of [handicraft] production—we see a transition to large-scale industry.

[...]

[“E.g. in the west] of the United States most SETTLERS, having paid for their land, REACH it with no property in [the world except] an ax, a spade, a hoe, a gun,

^a More or less.—*Ed.*

^b The manuscript is damaged here.—*Ed.*

a cow, a few household utensils, and one or two [...] (A CHANGE OR TWO OF CLOTHING). The land [is] covered with timber [and] is of no use in its present [XVIII-1157] condition for TILLAGE. They go to a neighbouring merchant. He let them have on credit—against the future CROP—some of [his] capital, in the form of sugar, tea, coffee, flour, corn, potatoes, seed, salt, PROVISIONS, winter clothing, etc. With this borrowed capital *each settler begins his labours, and when the crops are harvested, the merchant is paid in grain and other productions, and the settler finds himself, by the aid of this credit, in possession of a surplus, sufficient in part to support his family for another year, which he could not have possibly possessed had the merchant refused to give him credit...* A large part *of the planters of the cotton growing states* receive *large supplies of clothing and subsistence for their slaves and of every article of their very consumption, upon credit from the neighbouring merchants, in anticipation of the next year's crop...* As regards these COUNTRY MERCHANTS themselves, *who aid the settlers and planters, few or none of them have a capital of their own adequate to carry on business to the extent they do. They are themselves obliged to obtain most of their supplies upon credit from the wholesale merchants of the large interior towns and the Atlantic cities, while those in turn avail themselves more or less of credit with the European manufacturers... It not unfrequently happens that a settler in [the] remotest region of Missouri plants his land and produces his crop by means of credit obtained, it may be, through three or four successive links, from a manufacturer of hardware in Birmingham, or from one of dry goods in Manchester" (Condy Raguet, *A Treatise on Currency and Banking*, 2nd ed., Philadelphia, 1840, [pp.] 50-52).*

Richard Jones sums up correctly in the following passage:

*"The amount of capital devoted to the maintenance of labour may vary, independently of any changes in the whole amount of capital... Great fluctuations in the amount of employment, and great suffering, may sometimes be observed to become more frequent as capital itself becomes more plentiful" (R. Jones, *An Introductory Lecture on Political Economy*, London, 1833, p. 52).*

The total capital may remain *the same* and a CHANGE (decline especially) may take place in the variable capital. A CHANGE in the proportion between the two constituent parts of capital does not necessarily involve CHANGES in the size of the total cap[ital].

An increase in the total capital, on the other hand, may be accompanied not only by a relative, but by an absolute diminution of variable capital and is always connected with violent FLUCTUATIONS in the variable capital and consequently with "FLUCTUATIONS IN THE AMOUNT OF EMPLOYMENT".

[3] RELATIVE SURPLUS VALUE

γ) MACHINERY.

UTILISATION OF THE FORCES OF NATURE AND OF SCIENCE
 (*STEAM, ELECTRICITY, MECHANICAL AND CHEMICAL AGENCIES*)]
 [(CONTINUED)]¹⁰

[V-211] *Costs of machinery, buildings, etc.*, when not working. In *The Times* for November 26, 1862^a a spinning manufacturer points out that his MILL, EMPLOYING 800 WORKPEOPLE and CONSUMING, WHEN AT FULL WORK, ABOUT 150 BALES OF EAST INDIAN, OR ABOUT 130 BALES OF AMERICAN COTTON, costs him ABOUT £6,000 a year (ABOUT £120 a WEEK) when not working. There are, first of all, fixed costs, which do not concern us here (but which are very important in practice), namely RENT, the most significant FIXED COST, whether the machine works or not (RENT in the above case=£2,450), further INSURANCE (INSURANCE OF MILLS AND MACHINERY AGAINST FIRE in the above case=£477, INSURANCE OF COTTON IN PROCESS £123); taxes on this property // RATES ON THE MILLS AND MACHINERY, AS PAID IN 1861 (POOR RATE INCLUDED) £310 //. Further: salaries OF MANAGER, BOOK KEEPER and SALESMEN. (In the above case £625.) Then WAGES OF LODGEKEEPER, WATCHMEN, ENGINEER, AND OCCASIONAL LABOUR TO TEND THE MACHINERY (£250. This OCCASIONAL LABOUR TO TEND THE MACHINERY belongs to the outgoings TO CONSERVE IT). Then COAL FOR WARMING THE MILL, AND OCCASIONALLY WORKING THE STEAM ENGINE (£150.) Finally "ALLOWANCE FOR DETERIORATION OF MACHINERY". (£1,200, because the machinery is already very worn out.) With regard to the last point, the Lancashire SPINNER remarks:

*"It may appear to many that, as the mills and machinery are not working, they cannot be deteriorating... It is not intended to cover the cost of the ordinary wear and tear, which is repaired, as a knife has a new blade, by a staff of mechanics provided for the purpose by every manufacturer when his mill is working. But it is intended to cover that kind of wear which cannot be repaired from time to time, and which, in the case of a knife, would ultimately reduce it to a

^a "The Case of the Millowners. To the Editor of *The Times*", *The Times*, No. 24413, November 26, 1862.—*Ed.*

state in which the cutler would say of it, 'it is not worth a new blade'.^a It is also intended to cover the loss which is constantly arising from the superseding of machines before they are worn out by others of a new and better constitution. From these two causes it is well known that the machinery in a mill gets entirely renewed, at the least, once in every 15 or 20 years; and invention does not stand still in times like these, being always stimulated by difficulties; nor do the weather and the natural principle of decay suspend their operations because the steam engine ceases to revolve."*

The same fellow also says:

"No doubt a large number (of manufacturers) have ample reserves on which they can fall back, but the bulk of Lancashire manufacturers have no spare capital. The habit of the trade is to spend in extensions of their mills and machinery their profits as fast as they make them, and as a rule they have an insufficiency rather than a redundancy of floating capital" [p. 12].^b

[V-212] Cherbuliez: *Riche ou pauvre etc.*, Paris, 1841.²⁰¹ (Reprint of the Geneva edition.)

<i>"New Capital</i>	<i>Old Capital</i>
1) the machine	1) provisioning of the workers
2) annual upkeep	2) the instrument and its upkeep
3) raw materials	3) raw materials." ^c

// There is of course provisioning of the workers in the case of new capital as well. He is only speaking here of the provisioning of the workers replaced by the machine.//^d

"On both sides one must abstract from the number of workers who are necessary to supervise and direct the movements of the machine. The old capital would grow *in direct proportion* to the number of workers employed. If it is 100 for a particular number, it is 200 for twice that number. The new capital is not subject to the same laws of growth, for the element of the machine that serves the application of the motor does not grow in numbers or in dimensions in proportion to the number of workers whose labour it replaces. Hence whatever the superiority of the new capital over the old for a given number of workers, it lies in the nature of this surplus labour that it is converted into inferiority, in proportion as one increases the number of the workers represented and replaced by the machine. If 2 workers are replaced, it is perhaps more expensive. If 4, 10, 20 workers are replaced, it becomes ever cheaper. This favourable result can only be obtained on condition that one disposes of a previously accumulated capital which is sufficient to set up a machine to replace the required number of workers and to obtain a

^a The words "*Fixed capital*" are written in the margin opposite the following two sentences.—*Ed.*

^b In the margin opposite this paragraph, Marx wrote "*Improvement of machinery paid for with loans*".—*Ed.*

^c Marx quotes in French.—*Ed.*

^d Marx wrote this paragraph to the right of the Cherbuliez text.—*Ed.*

quantity of raw materials proportionate to that number. Here again, as in the case of a new subdivision of labour, the saving is linked to the prior realisation of an additional capital. *Each accumulation of wealth provides the means of accelerating subsequent accumulation*" ([pp. 28-]29).^a

// *Firstly*. The situation with accumulation is to be taken into account in the conversion OF SURPLUS VALUE INTO CAPITAL. It should be mentioned here that just as accumulation is a condition of capitalist production, so capitalist production is a cause of ACCUMULATION.

Secondly: The machine replaces a certain quantity of workers, either in real terms, i.e. by taking their place (this is always the case when the trade is not new but was previously carried on without machinery); or potentially, in that so and so many workers would be necessary to replace *it*. If we speak e.g. of the millions of workers (see Hodgskin²⁰²) who would be needed to furnish the amount of production now furnished in the cotton industry, we are speaking of the number of the workers who would be needed to replace *the machinery*. It is different when we say that so and so many weavers were displaced by the POWERLOOM. Then we are speaking of the workers the machine has *replaced*. This is a big distinction. Once machinery has been introduced as the basis of a branch of production (with no more competition from manufacture) it only displaces workers to the degree that it is improved. But production expands with a given level of PERFECTION of the machinery before it attains a higher level.

If e.g. 10 were employed at handlooms, and 20 are employed at POWERLOOMS, and if a POWERLOOM replaces 10 handlooms, then the 20 accomplish as much as 200 did previously. But they have not driven out or replaced 200. The first POWERLOOM drove out 10. The other 19 POWERLOOMS have employed 19. One must not say, therefore, that productive power has replaced 180, because 200 would have been needed without the POWERLOOMS. The productive power has merely increased tenfold.

If a new POWERLOOM is invented, allowing 10 to do as much as 20, the 20 would be replaced by the 10, or 10 thrown out of work. If the number of these POWERLOOMS grew in turn to 20, 20 would be employed. And 40 would have been necessary on the previous scale. And 400 on the original scale. But the 400 men, who never existed, have not been replaced. The first POWERLOOM drove out 10 and second 2. Thus the productive power has grown in the proportion 20:1.

^a Marx quotes partly in German and partly in French (with minor alterations).—Ed.

At any rate there has thus been a twentyfold increase in the productive power. If this development had taken place in all branches, the worker would have needed 20 times less time to reproduce his means of subsistence. Thus if it was 11 hours initially, it is now $\frac{11}{20}$ of an hour, and all the remaining part of his working day, $11\frac{9}{20}$ hours, belongs to the capitalist. But the development is not uniform and all-embracing.

It should further be remarked: the amount of surplus labour is determined not by the workers replaced by the machine but by the workers employed by it. This is precisely what Cherbuliez forgets. The productivity of the machine (and its cheapness) is not only determined by the quantity of workers it replaces, but also by the quantity of workers whose labours it assists. Or the expressions are in [V-213] SOME RESPECT identical. //

// In so far as machine labour curtails the labour time needed to produce a particular commodity, hence increases the quantity of commodities which are produced in *the same* labour time, 2 things are possible. The commodity enters into the consumption of the workers. Then, leaving aside what we developed previously,^a there is an increase in the amount of labour which can be applied to produce commodities that do *not* enter into the consumption of the workers; in which SURPLUS LABOUR can therefore be represented. This extends the basis, UPON WHICH CAN [be] REARED A LARGER UPPER CLASS. At the same time the pleasures of this CLASS. But there is also an extension of the basis, UPON WHICH CAN [be] REARED A LARGER WORKING CLASS, or the amount of living material on whose EXERTIONS the UPPER CLASS IS REARED. If, secondly, the commodity does not enter into the consumption of the workers, there is either a cheapening of pleasures or a setting free of labour for NEW FIELDS OF EXERTION. //

Distribution of the value of the machinery, BUILDINGS, etc., over the quantity of commodities produced.^b

Constant capital, in so far as its relative magnitude of value—proportionately to the total capital—enters as a determining factor into the rate of profit, is to be left out of account entirely in examining surplus value as such. We have therefore regarded it as *c*, of indifferent magnitude, both in the section on absolute surplus value and in dealing with cooperation, division of labour, etc.^c In examining machinery, however, we are compelled to concern ourselves especially with constant capital. Nevertheless,

^a See present edition, Vol. 30, p. 235 ff.—*Ed.*

^b *Ibid.*, pp. 321-27.—*Ed.*

^c *Ibid.*, pp. 172-232, 255-63, 264-306.—*Ed.*

there is no inconsistency here. Two points should be made about this:

1) Relative surplus value can be created only in so far as the commodities entering into the consumption of the workers (means of subsistence) are cheapened; hence the value of these commodities is reduced, i.e. the quantity of labour time required for their production is reduced. And the labour time contained in the commodity consists of two parts: a) the *past labour time* contained in the means of labour consumed in the commodities, and in the raw material, *s'il y en a*^a; b) the *living labour* last added, in short the labour which is realised with the aid of those means of labour and in that raw material.

All the methods of shortening the labour time necessary for the production of a commodity, HENCE reducing its value, leave untouched the value of the raw material which enters into production. (There is at most a *saving* of it given labour on a larger scale.) This part of the *past labour* which enters into the value of the commodity therefore does not come into consideration at all. What all these methods have in common is that they curtail to a greater or lesser degree the living labour which is applied to past labour.

All that remains to be considered now, therefore, is the part of the past labour which consists of the instruments and conditions of labour (such as buildings, etc.). THIS PART remains unchanged with simple cooperation and division of labour. (It is, inversely, cheapened by concentration and utilisation in common.) But it is different with the employment of machinery. Here a specific relation enters the picture. The curtailment of living labour rests here upon a revolution in this part of constant capital, and one can say, expressing it very ROUGHLY, that complex, large-scale, and expensive instruments of production replace simple and cheap ones. If the commodity were therefore just as much *made dearer* by the machinery (or *more so*) as it is on the other hand cheapened by the acceleration and curtailment of the living labour added, the *value* of the commodity would not be reduced. One component [of the value] of the commodity would fall by the very fact that the other increased. There would be no reduction in the *total quantity* of labour time necessary to the production of the commodity, *therefore* no production of *surplus value*. So because this *method* of creating relative surplus value rests on the revolution of a particular part of the constant capital, and is thereby distinguished

^a If there is any.—Ed.

from other methods, this point must be examined here specifically. Viewed quite generally, the problem is solved by saying that the total quantity [V-214] of the commodities produced by the machinery is *so large* that in every aliquot commodity there enters a smaller value component (part of the depreciation) of the machinery, buildings and the *matières instrumentales*^a needed for the functioning of the machinery than if the same commodity were produced in the old manner by human beings and their old craft tools. But the fulfilment of this condition will in turn depend on the following circumstances:

α) *the quantity of commodities* an individual worker can produce in a given labour time, e.g. a working day, by means of the machinery;

β) *the number of workers* who, if the above relation is given, *simultaneously* receive assistance from the machinery in their labour; and through whom the value part of the total machinery calculated on each individual is relatively reduced;

γ) the difference between the period during which the machinery enters into the labour process and the period during which it enters into the valorisation process. E.g. a machine which lasts for 15 years enters completely into the labour process every year for 15 years. But only $\frac{1}{15}$ of it enters into the valorisation process every year. The total annual product in commodities therefore never contains more than $\frac{1}{15}$ of the value component of the machinery.

2) A big distinction is to be made between the question of how far the constant capital affects the *rate of profit*—this is the investigation of the question of the *ratio of the surplus value to the value of the capital advanced*, WITHOUT ANY REGARD TO THE FUNCTIONS OF DIFFERENT PARTS OF THAT CAPITAL—and on the other hand, the question of how far a particular configuration of constant capital (machinery, etc.) lessens the *price of the individual commodity*, or the labour time *contained* in it (past and present labour). In *content* of course the two questions come down to the same thing. But here the same phenomenon is considered from entirely different points of view. In the one case we investigate how the commodity // and therefore *labour capacity*, in so far as the commodity enters into the consumption of the workers // is cheapened, i.e. the total quantity of labour, past and living, required for its production, is lessened. In the other case we investigate how the ratio of surplus value to total capital advanced (the rate of profit) is affected by the

^a Instrumental materials.—Ed.

revolution in the quantity and value relations of the constituent parts of the capital. The latter investigation presupposes surplus value; it presupposes the whole of capitalist production (including the process of circulation). The former investigation presupposes nothing but our general law about the value of commodities and the laws that follow therefrom about the value of labour capacity and ratio of surplus value to the latter.

3) The confusion between these questions: the lessening of the labour time required for the production of an individual commodity (or a number of commodities), and the proportion of surplus labour to necessary on the one hand, and on the other hand the value and quantity relations of the different components of capital, is the source of great FALLACIES.

D'abord^a the main FALLACY. If the essence of capitalist production is grasped, it is absolutely no contradiction to say that the labour time necessary for the production of a commodity is reduced, but that there is on the other hand an increase in the total amount of time the worker must use for the production of this commodity which has become cheaper. In contrast, this constitutes, in fact, an incomprehensible contradiction to the economists who let the machine be invented and introduced, not in order to curtail the labour time the worker needs for the production of a commodity, but in order to curtail the labour time he must provide altogether as equivalent of his wage. And especially so, if on the one hand profit is explained by the fact that machinery shortens the worker's labour time, and on the other hand it is demonstrated (Senior,^b etc.) that machinery necessitates the prolongation of that labour time.

Secondly: As far as the labour time of the worker himself is concerned, his paid labour time is shortened by this, and his unpaid labour time lengthened. It already follows [V-215] from this that the quantity of labour time contained in a commodity and the proportion in which this labour time is divided between capitalist and worker are two entirely different things. If the capitalist sells a commodity more cheaply, it does not follow at all from this that he makes *less profit* on it, realises less SURPLUS VALUE ON it. The situation is usually the reverse. In addition to this, it is not *the individual commodity*, but the total amount of commodities produced in a certain period, that is to be considered as *the product of the capital*.

^a First.— Ed.

^b N. W. Senior, *Letters on the Factory Act...*, London, 1837, pp. 11-14; see also present edition, Vol. 30, p. 333.— Ed.

Prolongation of absolute labour time in the FACTORY SYSTEM.^a

The developed organisation of labour which corresponds to the machine system on the capitalist basis is the *FACTORY SYSTEM*, which predominates even in modern large-scale agriculture, more or less modified by the peculiarities of that sphere of production.

The main proposition that applies here is that the *SURPLUS VALUE* the capitalist makes derives not from the labour *replaced* by the machine, but from the labour which is employed on the basis of machinery.

Now the yield in *SURPLUS VALUE* is determined by two moments^b: the rate at which the individual worker is exploited, or the share of surplus labour in the working day of an individual worker, and, secondly, the number of workers simultaneously employed, the number exploited by a given capital. The introduction of machinery lessens the latter moment, while it raises the former. It raises the surplus labour time of the individual worker, but it lessens the number of workers simultaneously exploited by a particular capital. The same method, therefore, which has a tendency to raise the rate of *SURPLUS VALUE*, has at the same time the antagonistic tendency to weaken the other moment, which acts equally to determine the amount of surplus value.

If each of 20 workers works for 12 hours, 2 hours of which is *SURPLUS VALUE*, the amount of *SURPLUS VALUE*= $2 \times 20 = 40$ hours of labour (=3 working days of 12 hours each plus 4 hours). If each of 10 workers works 12 hours, 4 hours of which is *SURPLUS LABOUR*, the amount of *SURPLUS VALUE*=40 hours as above. But 6 workers, each of whom works 6 hours of *SURPLUS LABOUR*, will only provide 36 hours of *SURPLUS VALUE*. And if the same capital set in motion 20 workers in the first case and 6 workers in the second, the amount of *SURPLUS VALUE* would have declined, even though its rate had increased.

This antagonistic tendency of exploitation based on machinery impels the extension of absolute labour time. If e.g. in the second case the workers were to work 14 hours instead of 12, and 8 hours were *SURPLUS LABOUR*, the *AMOUNT* of *SURPLUS VALUE* would= $6 \times 8 = 48$.

This reason, which impels the absolute prolongation of labour time—the increase of absolute *SURPLUS LABOUR*, the prolongation of the working day—is something the capitalists and their spokesmen are totally *unconscious of*. The phenomenon shows itself once

^a See present edition, Vol. 30, pp. 330-31. Marx adds the English expression *factory system* in brackets, after its German equivalent.—*Ed.*

^b Cf. present edition, Vol. 30, pp. 185, 253 et al.—*Ed.*

machine manufacturing has been sufficiently extended and developed through competition for the *social value*, the market value, of the commodities produced with machinery to be brought down to their individual value, so that the capitalist can no longer pocket the difference.

This is a driving motive entirely independent of the valorisation of the part of the constant capital which consists of machinery and buildings. The valorisation motive, as being more obvious, is directly present in the consciousness of the capitalists and their spokesmen.

This motive is very simple, and common to all SURPLUS LABOUR, but it operates particularly strongly when the value and the amount of the capital employed in the means of labour is large enough to be predominant.

D'abord, NO ADDITIONAL OUTLAY OF MACHINERY and BUILDING is necessary, whether 12 or 24 hours are worked, whereas, if a correspondingly greater amount of labour is to be absorbed *simultaneously*, the buildings, machinery [V-216] and TO A CERTAIN DEGREE THE MACHINERY WHICH PRODUCES THE MOTIVE POWER must be increased in size. The commodity is cheapened thereby too. For it is irrelevant whether the value of the machinery is distributed over more labour *spatially*, through the *number of workers* who work alongside each other and are assisted simultaneously by it; or this happens *temporally*, by the fact that the same *number of workers* are assisted by the same machinery over 24 instead of 12 hours.

The absolute reproduction time of the buildings remains roughly the same, whether they enter really as conditions into the labour process over 12 or over 24 hours.

The reproduction time of the machinery itself is not curtailed to the same extent as its active service is prolonged. But the reproduction time of its *value* is curtailed to the same extent.

The profit is thus greater in a *given section of circulation* and the profit in general is calculated according to the surplus value which is realised in a particular period of circulation, e.g. a year.

The ratio of constant to variable capital is in general reduced by this, because the share of the most important part of the constant capital is reduced.

The examination of this last point therefore belongs to the theory of profit.⁴

Replacement of the tool of labour by machinery.

It should be noted here that machinery does not only replace living labour, but also the worker and the tools of his craft. The latter may of course be very insignificant, e.g. when sewing

machines replace the usual labour of sewing. This is usually not a replacement; the actual WORKING TOOL rather re-emerges in the machinery itself, even if on an infinitely larger scale and more or less altered by mechanisation.

Conglomeration of workers in the factory system.

Later on we shall go further into the peculiarities of cooperation,^a as it appears in the factory system, as distinct from both simple cooperation and manufacture based on the division of labour.

But here it is to be noted above all that developed machinery—the system of production based on machinery—presupposes the conglomeration of workers at one point, their spatial concentration under the direction of a single capitalist. Concentration of this kind is its condition. See the quotation from Ravenstone.²⁰³

The machinery which produces the motive power—and similarly the directing machinery which subdivides and transmits the power—is relatively cheapened to the degree that it is applied to a progressively larger system of machinery; there is a similar relative reduction in the cost of buildings, heating, superintendence, etc., in short the objective conditions of labour which are *communally* needed and consumed by the mass of the workers. There must correspond to the system of simultaneously operating machinery an army of simultaneously employed workers, partly to put into effect the division of labour peculiar to the machine system, partly to implement the system of simple cooperation, the simultaneous exploitation of many people who do the same thing, which is characteristic of the division of labour. Hence although the number of workers set in motion by a particular capital—and the number of workers required for the production of a given amount of commodities—is reduced, the number of workers simultaneously employed and commanded under individual capitalists increases; there is an increase in the concentration of workers acting together in space and time.

Just as the capital functioning in production in this system takes on the shape of a great *social mass of wealth*, even if it belongs to an individual capitalist, which stands in no relation at all to an individual's capacity—however large—for working and earning, so the same is true of the system of collaborating workers in a great social combination.

^a See this volume, pp. 423-25, 483-85, 496-97.—*Ed.*

[V-217] *Condensation of labour.*^a

If we call the variable capital v , the constant c , and the surplus labour contained in the product x , the value of the commodities produced by a particular *capital*, if we assume that the whole of the constant capital enters into the valorisation process, considered from the point of view of the absolute surplus value = $c + v + x$.

The methods which raise relative surplus value change absolutely nothing in this formula. Or, the *value* of the total product is *not* raised by these methods. c may grow, because the amount, and therefore the value, of the raw material grows. Ditto, because the value of the machinery grows. But the *value* of c remains unaltered. It only reappears in the product. Just as little is x altered. v is exchanged in the labour process for $v + x$, where v represents the labour time which is expressed in v , and x represents the excess over and above this. $v + x$ is the total working day. It is not altered by the methods which create relative surplus value. Or, in other words: however much the quantity of products produced in a working day is increased by these methods, their value is not increased, even though, as a result of the cheapening of the products, *hinc*^b of the means of reproduction of labour capacity, the division of labour time into paid and unpaid is changed. (The value of the total product of e.g. one working day may be increased: e.g. more *cotton* may be spun, etc. In short because more constant capital is consumed in the same time.)

There is nevertheless an *exception* to this. And an exception which only develops with machine labour. This is *condensation of labour*, or it is so in so far as, owing to the development of the social productive power of labour, the *intensity* of labour, the filling in of the *pores* in labour time, is driven onwards to such an exceptional degree, and becomes so much the constant feature of labour in a particular sphere of production, that the more intensive hour of labour = the more extensive hour of labour + x . At a certain point what has been gained in extension must be lost in intensity. But the same result also occurs in reverse. And the *replacement* here of quantity by degree is not a matter of speculation. Where the *factum* occurs, there is A VERY EXPERIMENTAL WAY TO PROVE IT: if it is *physically impossible* for the worker e.g. regularly to perform the same quantity of labour over 12 hours in the course of a week as he now performs over 10 or 10¹/₂ hours. Here we see the necessary reduction of the normal or total

^a See present edition, Vol. 30, p. 335.—*Ed.*

^b Hence.—*Ed.*

working day as a result of the greater condensation of labour, which implies a greater tautness, nervous tension, but at the same time a greater physical exertion. With the increase of the two moments—the rapidity and the extent (the quantity) of the machinery which is to be supervised—a *nodal point* is necessarily reached, at which the intensity and the extent of labour cannot simultaneously grow any further, the one necessarily excluding the other. And in this case, in spite of the reduction in absolute labour time, the SURPLUS LABOUR may not only remain the same, but grow. And indeed for two reasons. On the one hand, because the productivity of labour grows, i.e. owing to the general law that determines relative SURPLUS VALUE altogether. Secondly, however, because the *more intensive* hour of labour *now counts as such*, hence its product e.g.=the value of 1 1/2 extensive hours of labour in the previous mode of production. The more intensive hour of labour—here as the regular, general law of a particular sphere of production, not as something accidental and individual—will now be reckoned as what it is, as a *greater quantity of labour*, condensed as opposed to more porous labour time. As long as the intensity grows simultaneously with the extension of the absolute labour time, the worker will admittedly be subject to not only simple but double overwork; but the *more intensive hour of labour* does not count as such. It only counts from the moment at which its heightened intensity appears as the real, tangible and given limit of its extension.

This is the reason why with the introduction of the Ten Hours' BILL there was not only a growth in the productivity of the branches of English industry into which it was introduced, but also a rise rather than [V-218] a fall in the *amount of value* they produced, and even in wages.^a

It should of course always be remarked that as soon as a concrete economic phenomenon comes into question, general economic laws can never be applied simply and directly. E.g., in the matter just referred to, a mass of circumstances come into consideration which lie far away from our subject; indeed, it would be impossible to explain these circumstances without anticipating developments which involve much more concrete relations than those we are so far able to grasp. E.g., the rise in demand following from the expansion of the world market since the discoveries in California and Australia,^b and the combinations

^a Cf. present edition, Vol. 30, p. 337 ff.—Ed.

^b The discovery of gold in California in 1848 and in Australia in 1850.—Ed.

connected with this. The influence exerted, precisely during the *period* of occurrence of the phenomenon referred to, by the cheapness and abundance of the supply of the raw material (cotton), etc., in a number of these branches of industry. And finally the measure of the value, e.g. of cotton, is determined not by the English hour of labour, but by the AVERAGE NECESSARY TIME OF LABOUR on the world market.

But leaving aside all this, the English FACTORY REPORTS unanimously demonstrate two facts: 1) that since the introduction of the Ten Hours' Act (later modified to 10¹/₂ hours) the small, piece-by-piece improvements in machinery were on a far larger scale and more continuous than in any prior period, and 2) that the speed of the machinery, and the amount of it that the individual worker has to overlook, have very much increased the intensity of labour, the demands on the worker's nerves and muscles.

Furthermore, the same REPORTS leave no doubt about the other two facts: 1) that without the law on hours, the limitation of the absolute working day, that great revolution in the running of industry would not have occurred, that it was *enforced* by the outer limit set by legislation to the exploitation of the worker; 2) that the experiment would not have been possible, i.e. not possible so quickly with this favourable result, without the high level of technological development already attained, and the means of assistance given by the level of capitalist production attained in general.

If all branches of industry were subjected to the same restrictions, and with the same success, with an equal rise in the intensity of labour, this intensity would count as a *GENERAL RULE*, and not as the distinct property of a specifically determined branch of labour. A new AVERAGE normal working day would merely have been established. The whole day would have been shortened, but also the necessary labour time and the surplus labour time within that (ON AN AVERAGE) in the different branches. (An English working day of 10¹/₂ hours is not only more productive, but contains perhaps as great a quantity of labour as the 24 hours worked in the COTTON MILLS of MOSCOW.)

The capitalist mode of production in general condenses labour time, or increases the amount of labour provided within a definite time, the *amount of labour* which IS ACTUALLY WORKED IN FOR INSTANCE AN HOUR OR 12 HOURS. This is in fact identical with increasing the continuity of labour for the individual worker (for the individual worker, disregarding the continuity of the production process, i.e. its regular continuance over whole periods of time). Even the

formal subsumption of labour under capital brings this about, as does the whip in the mode of production based on slavery. This intensity is increased still further by cooperation, but particularly by the division of labour and even more by machinery, where the continuing activity of the individual is bound and conditioned by the activity of a whole, of which he only appears as a member, or which works, as in the mechanical workshop, with the utter uniformity and tirelessness of an inanimate force of nature, an iron mechanism. A certain AVERAGE DEGREE OF INTENSITY OF LABOUR—of the real quantity of labour which is performed IN A GIVEN TIME—and a relatively higher DEGREE //although in the nature of things it differs in different branches of production// than is found in non-capitalist or even in merely formally capitalist production, is here altogether a *general presupposition*. It is presupposed for all work, if one speaks of time as its measure, and if one speaks of the labour time *necessary* for the production of a commodity. But this is not what is being referred to here.

Just as little is it the greater (or different) performance of the same labour in the same time, according to the degree to which skill, etc., has been developed through the division of labour and TRANSMITTED SKILL, and efficiency is increased through the aid of machinery. These two aspects relate to the *higher productivity of labour*, whereby IN FACT the real quantity of labour remains the same, and (with machinery) MIGHT EVEN BE DIMINISHED TO A CERTAIN DEGREE.

[V-219] What is being spoken of here is an increase in the exertions of labour which accompanies the development of productive power; so that in the same time not only more is produced, but *more work is done*, more labour power is expended, and indeed *above* the AVERAGE DEGREE—in a degree which is only made feasible permanently, day in day out, by limiting the extension of labour time. In this case not only relative but absolute SURPLUS VALUE is created, as long as this DEGREE of intensity is not universal. But the latter would presuppose, just as much, a general reduction of the working day.

In any case, intensification of labour meets with barriers just as does extension of labour. And these barriers are shown by the fact that at a certain point the intensity of labour can only be raised by reducing its extension. Thus e.g. if 10 hours is the normal average working day, with the corresponding level of intensity of labour—or of condensation of labour time, quantity of labour which is provided at each moment in time—all inventions which made labour *more productive* on *this basis*, without increasing the tension of the labour itself, would only raise relative surplus value.

But if a new condensation of labour time were linked to this development of the productive forces, so that the quantity of labour grew in the same time, and not only the productivity of that labour, a point would soon be reached at which the overall working day would have to be shortened again.

It is only capital's shameless and ruthless lack of moderation, impelling it to go beyond the natural limits of labour time into the realms of madness, whereby the labour also silently becomes more intensive and strained with the development of the productive forces, that forcibly compels even the society which rests on capitalist production (in this connection the rebellion of the working class itself is of course the main driving force) to restrict the normal working day within firmly fixed limits. This first occurs as soon as capitalist production has emerged from the crude and boisterous years of its adolescence and created a material basis for itself. Capital's reaction to this forcible restriction of labour time is a greater condensation of labour, which for its part in turn brings about a new curtailment of absolute labour time AT A CERTAIN POINT. This tendency to replace EXTENT by DEGREE only emerges at a higher level of development of production. This is in a certain sense a condition for social progress. Free time is created in this way for the worker as well, and the intensity of a particular kind of labour therefore does not remove the possibility of activity in another direction; this can on the contrary function, appear, as a relaxation from it. Hence the extraordinarily beneficial consequences—statistically demonstrated—of this process for the physical, moral, and intellectual amelioration of the WORKING CLASSES in England.²⁰⁴

As we have often repeated, we always proceed, in our whole development, from the assumption that commodities, and therefore also labour capacity, are always paid for at their *value*, and we consider the CHANGES in SURPLUS LABOUR exclusively on this basis. The real cuts in wages, etc., conditioned by competition are therefore not mentioned here. Thus e.g. the supply of labour is increased by OVERTIME, without any increase in the number of workers, or one group of workers is OVERWORKED, while the other group is entirely or partly unemployed. In this way an artificial OVERSUPPLY OF LABOUR is created, with the result that the supply of those rendered unemployed by this OVERWORKING forces down wages altogether (also those of the employed).

This is, on the other hand, one of the reasons why wages rose rather than fell in England in the branches of industry covered by the FACTORY LAWS. Since the demand for commodities rose as a result

of the extension of the world market, and, in particular, in the opinions of the capitalists, the extent of this demand rose still further, the demand for labour also rose; but this demand could not, as under the old conditions, be satisfied by artificially increasing the supply of labour, nor was it possible thereby to paralyse its effects on wages.

[The] supply of workers also fell off very considerably; in part through emigration from England, in part through the Irish exodus and pestilence.²⁰⁵

[XIX-1159]^{a9} One example of the condensation of labour is work that is not practised at factories, e.g. tailoring in London. During certain months of the year there is both the greatest possible extension of the working day, and the work is carried on at a feverish rate.* For the rest of the year the tailors are for the most part unemployed or only partially employed. The *necessary labour time*—*hinc* wages—is not determined by the labour time in this period of the paroxysm of labour, but is rather calculated on the AVERAGE labour time, and the wage thus obtained therefore also covers a great part of the whole year's income. Here the condensation of labour is bound up with the extension of the working day, but the whole working period is restricted e.g. to a few months or weeks. One of the most miserable forms of exploitation of labour. These are periods of feverish labour, alternating with chronic slackness and unemployment.

DIVISION OF LABOUR AND MECHANICAL WORKSHOP. TOOL AND MACHINERY²⁰⁶

“By a low level of organisation I mean a *low degree of differentiation of the organs* for different particular operations; for *as long as one and the same organ has to perform diversified work*, the reason for its variability may probably be seen in the fact that natural selection preserves or suppresses every little deviation of form less carefully than *when the organ has to serve for one special purpose alone*. In the same way that knives intended to cut all kinds of things may be of more or less the same shape, whilst a tool intended solely for some particular use must have a different shape for every particular use” (Darwin [*On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*, London, 1859, p. 149]).^b

* In all SEASONAL businesses.

^a This page of the manuscript is entitled: “Continuation of Notebook V (Machinery, etc.).”—*Ed.*

^b Marx quotes with minor alterations.—*Ed.*

It is one of the main results of the division of labour that instruments or tools which belong to the same species of purpose, e.g. cutting instruments, boring instruments, compressing instruments, etc., should become differentiated, specialised and simplified. One only needs to observe, e.g., the infinite variety of forms assumed by the knife, once each particular way of using it has been given a form which corresponds to this particular purpose and this purpose alone! It happens that once this kind of labour—rather the different forms of labour which work together to create a particular product, a specific commodity—has been divided up, the ease with which it can be performed depends on particular modifications of the instruments which formerly served different purposes. The direction taken by these alterations is determined by experience and by the specific difficulties put in the way by the unchanged form. This differentiation, specialisation, and simplification of the means of labour therefore originates spontaneously with the division of labour itself, without any need for a prior insight into the laws of mechanics, etc. Darwin, see above, makes the same remark on specialisation and differentiation in the organs of living beings.

Differentiation—difference of forms and crystallisation of these forms. *Specialisation*, that the instrument which now only serves a particular purpose is only effective in the hands of labour which is itself differentiated. Both things imply the simplification of the instruments, which only have to serve now as the means of a simple and uniform operation.

The differentiation, specialisation and simplification of the instruments of labour given by the division of labour in the system of manufacture based on it—their EXCLUSIVE ADAPTATION TO VERY SIMPLE OPERATIONS—is one of the technological, material prerequisites for the development of machinery as an element which revolutionises the mode of production and the relations of production.

[XIX-1160] In one sense Babbage is therefore right to say:

“While the division of labour has reduced *each particular process to the use of some simple tool, the union of all these tools, actuated by one moving power, constitutes a machine*” (Babbage, *Traité sur l'économie des machines etc.*, Paris, 1833 [p. 230]).^a

What we stress here is not only the reduction of “each particular process to the use of some simple tool”, but also something which is involved in this, the *creation of these simple tools* arising out of the division of labour.

^a Here and below Marx quotes from Babbage in French. The original English is reproduced here (see Ch. Babbage, *On the Economy of Machinery and Manufactures*, London, 1832, p. 171).—Ed.

One finds the view, both in English textbooks on mechanics and in works on political economy, that a machine is not essentially different from a TOOL or instrument; that the latter is A SIMPLE MACHINE and the machine A COMPLICATED TOOL, or that they are only to be distinguished as simple and complex machinery.^a In this sense, indeed, even the elementary mechanical forms, such as lever, inclined plane, pulley, screw, wedge, wheel, etc., are called machines.²⁰⁷

But it is not in this sense that Babbage calls the machine, in the passage quoted above, a "union of all these tools, actuated by one moving power". He is not speaking here of the mere combination of different elementary mechanical forms, such as those mentioned above. There is hardly even a simple tool which is not a combination of several of these forms. Babbage speaks here rather of the union, the combination, of all the different instruments which e.g. within the manufacture of the same commodity are appropriate to different, separate modes of operation and therefore to different workers; and also of the setting in motion of this combination of instruments by a *single* motor, whatever this motor might be, whether the human hand and foot, animal power, elemental forces, or an automatic mechanism (mechanical propulsion).

Other people, in contrast, draw the line of demarcation between machine and tool by saying that in the case of the tool the motive power is human, but with the machine the power is provided by a natural force alien to man (a force which does not dwell within the human being as an individual quality) such as animal or mechanical power, etc. According to this view an ordinary plough, e.g., is a machine, while a JENNY, a MULE (unless driven by SELFFACTORS), a sewing machine, etc., and the most complicated mechanical looms, are none of them machines, as long as they are set in motion by human beings themselves.

It must above all be noted that what is involved here is not a precise technological separation, but such a revolution in the means of labour employed as to transform the mode of production and therefore the relations of production; thus it is something characteristic of the capitalist mode of production in particular.

Historically, two stages in the transition to machine labour must be distinguished.

Machinery by no means always arises from manufacture, i.e. the analysis of the labour required for the production of a commodity

^a See present edition, Vol. 28, p. 487, and Vol. 29, pp. 82-83.—Ed.

into different forms of hand labour divided among different individuals. This is only one point of departure for machinery. It also emerges, secondly, from tools which had production of the handicraft type as their prerequisite, and, during the golden age of manufacture in the towns, were at most developed further, in the sense that a mass of these tools was concentrated in a building, together with the workers who set them in motion, assuming the form of simple cooperation. Here the cheapening of the product arose in particular from three^a causes: 1) the discipline to which the workers were subjected by capital; 2) the common utilisation of the general-type conditions of labour, such as buildings, tools, etc.; 3) the purchase of raw material on a large scale, etc.

The following should be viewed as the two classic examples of machinery which has emerged through these different routes:

On the one hand, the spinning and weaving machines which emerged from the most ancient tools (even if these had been somewhat improved in the course of time), without any further subdivision of the modes of operation within them, as brought about by some further division of labour. If we speak here of the division of labour, we mean the division of labour on which manufacture is founded, not separation into distinct and independent handicrafts. (Weaving, for example, was very subdivided in the latter way.)

On the other hand, there is the construction of the machines themselves by means of machinery. The [XIX-1161] latter emerged from—and had as its basis, a basis which also underlay the production of machines in spinning, etc.—the most complete implementation known to us of the system of manufacture founded on the division of labour.

The transformation of industry proceeds historically from the first form. It is in the nature of things that only after the manufacture of commodities by machinery had attained a certain extent did the need to produce the machinery itself by machines make itself felt.

With spinning wheels, where the motive force which set the wheel in motion, and through the wheel the spindle, was the foot, the part of the tool which came directly into contact with the material, the wool, the spindle, had a separate existence, was in fact a different tool from the wheel, which the motive force seized on. The picking of the wool and its twisting into threads, hence in fact spinning, was done by hand, and was only then threaded by

^a Marx has "two".—*Ed.*

hand onto the spool, once it had passed through this hand operation. From the moment when the tool itself took over this operation previously performed by hand, hence the tool itself spun, the same motive force as set the wheel in motion also setting the tool itself to spin, and the worker thus being reduced to the role of setting the wheel in motion and correcting and supervising the spinning of the tool (e.g. reconnecting broken threads), from this moment the spinning wheel changed into a machine, even if a machine of the handicraft type—a machine within the limits of handicrafts, i.e. a machine which could be worked by an individual person; which initially still permitted the trade to be carried on as a handicraft or a domestic, or a rural-domestic enterprise (the last as a subsidiary occupation of the agricultural population). But from this moment onwards *the number of spindles* was also larger; the *working machine proper* was admittedly still set in motion by human power, but partly the way in which this power was directed, partly the immediate effect of this part of the machine, which seizes and transforms the material, no longer stood in any relation to the *physical* exertion or the dexterity of the worker, to the operations in which his hand still had to act as intermediary, before the tool carried them further. All his hand now did was to assist the instrument by correcting its ERRORS. The instrument had become the spinner and the same motive force which set the wheel in motion imparted to the working part of the machine a movement that “spun”. The amount of the product therefore no longer stood in any relation to the physical exertion of the foot as motive force, whereas the hand came to the operation *post festum*, did not mediate it. Here a mass of spindles were AT ONCE set into the movement of spinning. The actual instrument of labour is therefore a union of many previously independent spindles, driven by the same motive force. It is therefore the transformation of the part of the tool which comes directly into contact with the material that served as the point of departure of the industrial revolution, which characterises the capitalist mode of production; this was the road from 6 to 1,800 spindles (paired on one MULE). With the spinning wheel there were only a few virtuosi (prodigies) who could spin with both hands. The spinning machine was not really complete until a large number of such machines, a REUNION of such machines, received their motion from water and later from steam. The organisation and combination of labour resting on the machinery first becomes complete with the establishment of the mechanical workshop, where an automaton sets the whole process in motion.

But the industrial revolution first affects the part of the machine which does the work. The motive force here is at first still man himself. But operations such as previously needed the virtuoso to play upon the instrument, *are now brought about by the conversion* of the movement directly effected by the simplest mechanical impulse (turning the crank, treading the wheel) of human origin into the refined movements of a working machine.

[XIX-1162] From the moment when direct human participation in production was reduced to the provision of simple *POWER*, the principle of work by machinery was given. The mechanism was there; the motive force itself could later be replaced by water, steam, etc.

After this first great industrial revolution, the employment of the steam engine as a machine for producing movement was the second revolution.

If one neglects to consider this, looking only at the motive force, one overlooks precisely the thing that marks, *historically*, the turning point.

Man possessed living automata from the beginning, in the shape of animals, and the employment of animal power for the pulling and carrying of burdens, for riding, driving, etc., is older than most handicraft instruments. Hence if one wished to characterise this as the decisive feature, machinery would be further developed among the Scythians than the Greeks; at least, the former employed these living locomotives to a greater extent. Animals were the first to be applied as motive force for the implements of labour, tools which have to bring about a definite mechanical alteration in the material they seize on, in the case of the plough, and much later also water (later still wind) in the case of the mill. The first form already belongs to very early stages of civilisation, which had not yet progressed to manufacture, but had only advanced to handicraft production. Just as little did the water mill bring forth an industrial revolution, rather taking up the same kind of position alongside handicrafts in the Middle Ages as it later occupied beside manufacture, etc. That the use of water power to set a mechanism in motion was, of course, seen as a particular principle, emerges from the fact that the later factories were baptised "mills", and indeed they are still called *MILLS* in England.

With both kinds of labour it was a matter of one of the simplest mechanical operations, the reduction of material, pulverising, in one case, and disaggregation in the other.

If we look at the machines which replace the earlier tools,

whether those of handicrafts or of manufacture, we find (with the exception of machines whose work itself consists in movement, in changing from one place to another, i.e. transport machines, railways, steamships, etc.) that the part of the machine which actually modifies the material consists for the most part of earlier tools, such as spindles, needles, hammers, saws, planes, shears, scrapers, combs, etc., even if they have received a modified form so that they can function as parts of a mechanism. What mainly distinguishes them is either that what previously appeared as an independent tool now acts merely as one element in a collection of such tools, or that it has taken on much more gigantic dimensions in proportion to the power of the motive force. But the actual task with any mechanism never consists in any more than the conversion of the original movement which is brought about by the motive force into another form, corresponding to the purpose of the labour and imparted to the working machine.

“*Weaving machines*: Are on the whole identical to an ordinary loom, or rather they consist of many looms, which are set in motion at the same time. They only have in addition particular attachments for pulling the combs and shafts, for throwing the shuttle and striking the plate. The alterations undergone since olden times by the *shuttle*, with which the weft is thrown through the warp, are not very significant. The form has on the whole remained the same” (Poppe [*Geschichte der Technologie...*, Vol. I, Göttingen, 1807, pp. 279, 280]).^a

Mills:

“*First the crushing* of corn grains. *D'abord* probably by hitting them with stones. Then a container or mortar, in which they were pounded with a pestle. Then it was seen that *grinding* was better than pounding. The pestle was given a *twisting movement* in the mortar for that reason. This was best done with a *handle*, placed at the stem of the pestle, and *turned round and round* by a human being, almost like our coffee grinders. Thus the *hand mill* was discovered. At the beginning female slaves were assigned to the grinding, later serfs. Later still the pestle was made much heavier and provided with a *pole* instead of a handle, to which horses, oxen, or even donkeys were harnessed. These animals continuously pulled the pestle which was pounding the corn round and round, while they themselves went round in a circle, with eyes blindfolded. Thus there were already [XIX-1163] *horse mills* (*molae jumentariae, asinariae*)^b, which were of greater effectiveness than the hand mills. The horse mills were then perfected; the pestle took on a more appropriate, initially conical shape, and a more convenient container in which it was turned round. In the course of time the pestle was remodelled into a big, heavy *cylindrical stone*, which turned round upon another big stone, and in this way ground the corn. The former stone was called the runner, the latter was called the nether millstone. The cylindrical runner had an opening in the centre, through which the grains of corn could fall, so as to pass between the surfaces of the runner and the nether millstone, where they were crushed...

^a This and the following passages from Poppe are contained in Marx's Excerpt Notebook XV (London 1851).—*Ed.*

^b Mills worked by draught animals, donkeys.—*Ed.*

"The invention of the *watermill* took place at the time of Mithridates, Julius Caesar, Cicero. (From Asia to Rome.) The first watermills in Rome were built on the Tiber shortly before Augustus. *Vitruvius* describes one...

"Toothed wheels and gears, which were connected to the shaft of the waterwheel, transmitted the motion of the waterwheel to the millstone which crushed the corn" (Poppe [op. cit., Vol. I, pp. 104-07, 109-10]).

The plough involved absolutely no new principle, and was in no way suited to bringing about an industrial revolution. It fitted completely into the framework of small-scale production. Here the animals functioned as living locomotives, just as they had previously done when pulling and carrying burdens. Like human beings they are capable of voluntary movement, and man had already learned to subordinate their will to the direction of his. The movement was irregular, if only on account of difficulties of the terrain, and man had not only to lead constantly, but to bear a hand himself along with the animal, once the cart became stuck in the mud. The connection between the motive force and working machine did not involve a new principle either. It was just as easy to harness the ox or the horse to the plough as to the cart. With the simple application of animal power the principle of *voluntary movement* remains predominant; the purely mechanical action is concealed under the cover of voluntary movement, and therefore it does not emerge. But it is already entirely different with e.g. the mill, where the animals are led or whipped round in a circle with their eyes blindfolded. The movement here already appears as *unnatural*, and reduced to a regular mechanical course, the circle. To the peasant, old and new, the animal by no means appears as a piece of machinery, but, as Mr. von Haller says in his *Restauration der Staats-Wissenschaft*,^a a "*helpmate*". Animals are in general only the earliest human instruments, a point already developed well by Turgot.^b The steam plough presupposes not only agriculture on a large scale, but the levelling of the ground, just as the locomotive presupposes railway lines.

The *mill* in contrast can be regarded as the first *implement of labour* to which the principle of machinery has been applied. This was relatively easier than with spinning, weaving machines, etc., because the actual working part of the machine, i.e. the part which overcomes resistance and seizes the object to be worked on, functioned from the outset independently of the human hand and

^a C. L. von Haller, *Restauration der Staats-Wissenschaft...*, Vol. 1, Winterthur, 1816, pp. 332, 378 (note).—*Ed.*

^b See [A. R. J.] Turgot, *Réflexions sur la formation et la distribution des richesses* [1766]. In: *Œuvres de Turgot*, Vol. 1, pp. 34-35; see also present edition, Vol. 30, pp. 97-98.—*Ed.*

without further intervention of human operations. Whether I pound or grind dried corn in a mortar with a pestle, my hand serves here simply as a motive force. Once it was discovered that grinding was more advantageous than pounding, and hence a turning movement was more advantageous than a movement up and down, it was gradually found that the pestle did not need to be directly grasped with the hand, but that an apparatus for turning could be interposed between it and the hand. With the growing size and weight of the pestle, greater force had to be exerted on it, and the handle grew in size and was progressively converted into a shaft, which was turned in a circle, first by human beings and then by animals. There were admittedly changes in the form of the pestle and of the container in which it worked, and it was a long time before the bottom of the container and the pestle were replaced by two stones, of which one turned cylindrically upon the other; and it was a still longer time before this movement was brought about by the natural fall of water down an incline. With the water mill the mechanical principle, the principle of the employment of a mechanical motive force and its direction by a mechanical contrivance, was realised to a considerable extent, for the water-wheel, which the water seizes hold of, and its crankshaft, which transmits the motion to the millstone through a system of toothed wheels and gears, comprised a whole system of mechanical motion.

[XIX-1164] From this angle, therefore, the whole of the history of mechanics can be studied through the history of the mill.

We find here, firstly, the application one after another of all kinds of motive force, and the coexistence for a long time of human power, animal power, water power, floating mills, wind-mills, wagon mills (mills on wagons, set in motion by the movement of the wagon, for war, etc.) and finally steam mills.

At the same time we see in the history of the mill the extraordinarily slow progress in development from Roman times (shortly before Augustus), when the first water mills were introduced from Asia, to the end of the 18th century, when the first steam mills are seen, constructed on a large scale in the United States. Here it is only through an extraordinary accumulation of the experience of generations that there occurs an advance, which is even then only applied sporadically, without overturning the old method of working. This lay partly in the character of the corn mills as a subsidiary agricultural occupation, in the very slow extension of the individual machine to form a system of machinery, in which the same motive force set in motion several

sets of millstones; it lay also in the nature of the article. Yankee land was the first place where there was a big trade in flour, the flour trade on a large scale.

In Rome water mills were still extraordinary establishments.

"The water mills have even today not yet driven out all the hand and horse mills" [Poppe, op. cit., Vol. I, p. 110].

The year 536 (Belisarius) saw the appearance of the first floating mills. From Rome the water mill spread to other states [pp. 111, 112].

A further advance in the machinery of the mill was that part of the work which was previously separate from the actual grinding, carried on independently, was now performed by the same motive force and thus mechanically combined with the work of grinding.

"Originally no one thought about *separating the flour from the husks or the bran*. Then the ground corn was sifted through a *hand sieve*. The pounded corn had already for a long time been caught in a special bin, later called the *bolting house*, in the form in which it emerged from between the millstones. Later on, sieves were installed in the bolting house, and given a form which allowed them to be turned with a crank. They made do with that until the *beginning of the 16th century*, when the *bolting mechanism* proper was invented in Germany; there a sieve, in the shape of a stretched-out bag, is shaken by the mill itself. The invention of the *bolting mechanism* gave rise to the development of a special type of fabric, so-called *bolting cloth*, which was later produced in factories."

// This is an example of the way in which a new division of labour within society is called forth by the introduction of, and improvements in, machinery. //

"*Roller milling* was invented at the end of the 18th century by Oliver Evans in Philadelphia" [ibid., pp. 114-16, 118-19].

"*Windmills*. Invented in Germany in the 10th or 11th century. Only in the 12th century were they first seriously made use of. Until then they were rarities. From the *16th century* Holland was the land of the windmills. Improved by them and by the Netherlanders. In Holland windsails were previously used more for driving *scoops* for removing water from low-lying fields" [pp. 130-34].

Improvements:

"Brake bands, so as to be able to bring the mill to a halt suddenly. The *post mill*, or so-called *German windmill*, was the only kind of [wind]mill known up to the middle of the 16th century. A violent storm could overturn a mill of this type along with its post. In the *middle of the 16th century* a Fleming found the way to make it impossible to overturn a mill. He made the whole of the mill immobile except the top, so that only the top needed to be turned round to point the sails into the wind, while the body of the mill was fixed firmly to the ground. *Dutch windmills*. In Germany and other countries it was only *in the 18th century* that they started to imitate the construction of the Dutch windmill, because the post mills were *much less costly*. The Dutch mills were given foundations, not merely *of wood*, in the shape of a truncated cone; soon the attempt was successfully made to construct them upon a *stone* base, which often took a turret-like shape. The roof or cap of the mill can be turned on rollers" (it has to be movable, so that it can always be turned towards the wind), [XIX-1165] "either with the assistance of a lever which is moved

by means of a stationary winch, or crowbars are used to turn round a shaft; this has a drive which engages with teeth in the cornice of the roof. Only in the 18th century was *this machinery perfected to enable easier and more advantageous movement*" [pp. 135-37].

(Holland in the 16th and 17th centuries was the dominant commercial and colonial nation; in addition, import of corn, large-scale trade in grain, cattle breeding within the country rather than tillage, hydraulic projects, the Protestant religion, bourgeois development, republican freedom.)

"Whatever the kind of mill, all its parts were always capable of many improvements; *people hardly concerned themselves about these possibilities until the end of the 17th century.*

"In the 18th century mills were infinitely improved, partly through better utilisation of the motive power, partly through a more advantageous arrangement of the internal parts, e.g. the milling, sifting, and the whole of the gearing mechanism. New kinds of mill and new parts for mills were invented, and new theories were worked out to secure the optimum layout for the mills. As in machine technology as a whole, the theory was often in open contradiction to experience, unpractical, wrong.

"The common hand mill, as it existed centuries ago, and even now often still exists on certain large farms, etc., is usually provided with a crank, on which human power is exerted. Two people can do the turning together. These mills were also not seldom constructed in such a way as to be turned by the pushing and pulling of levers. But here the motive power acted unevenly on the mill. This was improved through the addition of the flywheel, since the latter continues its movement at the same speed even if the motive power becomes weaker for a few moments. (Already recommended in the works of Faulhaber (1616 and 1625) and De Cous (1688).) The flywheel is placed on the crankshaft, and it facilitates its movement and makes it more uniform. The examination of rotary movement in mills was useful from many different aspects. It extended not only to the actual flywheels and pinions, but especially to the millstones, waterwheels, windsails, in general to all the parts which rotated" [pp. 138-40].

"Invention of the field mills, wagon mills or animal mills, which could be brought by wagon from one place to another. Supposed to have been invented by the Italian Pompeo Targone, at the end of the 16th century, for military purposes. He was Marquis Spinola's engineer. In the 18th century more sophisticated field mills, in which the runners were set in motion by the wheels of the wagon itself, while it was being pulled along.

"When the craft of milling was still in its infancy, only a single runner and consequently only one set of millstones was set in motion by the main axle shaft, which passes through e.g. the waterwheel. Later on the possibility was seen of setting in motion two runners, and thereby also two sets of millstones, by the main axle shaft, which passes through e.g. a single waterwheel." (17th century?) "All one had to do was provide the main axle with a spur wheel, and let this engage on both sides with the gears of two shafts lying parallel with the main axle. What was needed in addition was to fix a cogwheel at each of these shafts, in such a way that each cogwheel could drive its own runner by means of a vertical drive shaft; then one had two sets of millstones. But now everything depended on the quantity of water, because that intermediate mechanism and connecting gear required a stronger motive power. There was very little attempt to arrange the machinery in

such a way as to lessen *friction* as much as possible, so as to allow it to be driven by as small a motive power as possible. People depended entirely on the motive power, which was expected to overcome whatever irregularities of motion might occur and to make up for the deficiencies of the machine. No precise investigation was made into the *theory of friction until the end of the 17th century*. At most one smeared with grease and oil a few of the parts which seemed to come up hard against each other. The wheels, the gudgeon pins, etc., benefited from a *correct knowledge of the theory of friction*. In the 18th century the *theory of friction was reasonably well developed*. Furthermore, the *teeth of the gears* were made *epicycloidal*... Teeth which are rounded off into this curved line produce an even velocity of rotation, [XIX-1166] they do not jerk or shake, there is much less friction at the point of contact, and consequently the motion is much easier and closer to the ideal" [pp. 145-49, 155].

"In the period when the first water mills were set up, no attention was paid to controlling the water more advantageously, or ensuring that the wheels themselves" (the waterwheels) "should be designed and employed to greater effect. *The theory of hydrodynamics*, [developed] by Poleni, in *De motu aquae* (1717), was of assistance in the construction of watermills. D'Alembert, *Traité d'équilibre et du mouvement des fluides*, 1744. Bossut, *Traité élémentaire d'hydrodynamique*, 1775,^a etc. Similarly Bernoulli, Euler, etc., particularly in arriving at satisfactory results on the *flow velocity of water* and the *obstacles to this*. Special instruments, known as *flow meters*, were invented in the 18th century for the practical determination of the *flow velocity* of water. The *levelling or surveying of water*, i.e. the determination of the *gradient* or inclination of the bed of a river, canal, stream and the like was of no less importance in water mill technology. Full use of this was first made in the 18th century, especially with the assistance of the *level* or *water level*. Where rivers were not too broad, use was made of *artificial* gradients. The water is forced into a narrower space as it approaches the waterwheel, so as to make it flow faster. The contrivance used for that purpose is the *millrace*. It had long been customary in Germany for the water to be made to flow towards the wheel in a more or less steep gradient. In France the millers almost always employed the water horizontally, and accordingly it had no *natural gradient*, or no vertical distance between the inclined plane and the horizontal surface. Until the *middle of the 18th century there was no special theory* of millraces. After this period the discovery was made that the *millraces* for overshot waterwheels and breast wheels are best built in the shape of a *parabola*... Newton, Mariotte, Johann and Daniel Bernoulli, d'Alembert, Euler, etc., made considerable advances in the theory of the *resistance* or *thrust* of water" [pp. 160-65].

(With the undershot wheel the water acts through its *velocity*, while with the breast wheel it brings about the turning effect through its *thrust and weight*, and with the *overshot* wheel it is for the most part its weight alone which acts. Whether it is more advantageous to set up one or the other of the wheels mentioned depends on the quantity of water and the distance through which it falls.)

"After this a mass of other people endeavoured in the 18th century to derive a general law through which the strength of the thrust could be determined. Hydraulics and hydraulic technology were altogether enriched in the 18th century with many discoveries, which were for the most part very advantageous for the

^a These works are mentioned in Poppe's book, on p. 160 (notes 29-31).— *Ed.*

craft of milling too. The latter, *however, followed very slowly after advances in the theory, especially in Germany.* The *waterwheels* themselves in particular had been investigated more closely since the beginning of the 18th century, with the aim of discovering a theory which would enable them to be constructed to the greatest advantage. Parent, Pitot, Cassini, de La Hire, Martin, Du Bost, William Waring, Philipp Williams, Deparcieux, Lambert, etc.^a The theory of waterwheels was difficult, hence it was decried as empty theorising, and the millwrights paid little attention to it. In this respect too, much of the theoretical work still remained reserved to the 19th century" [pp. 165-69, 171].

"The *second half of the 18th century* saw the invention of the Englishman *Barber: water mill without wheel and trundle.* This water mill resulted from the so-called *reaction machine* or *Segner's waterwheel.* A cylinder, open at the top, is capable of turning easily about its axis. A large number of precisely horizontal pipes is inserted into the cylinder close to the bottom, and the water present in the cylinder can enter these pipes. They must be closed at their [XIX-1167] extremities, but be provided close to the end with an opening into the side, out of which the water is able to flow in a horizontal direction. If the water now flows out of the side openings, the cylinder will turn about its axis in the opposite direction. The water exerts an even pressure everywhere upon the side walls of the pipes. But at the points where the openings are located, the water finds no resistance and can therefore flow out freely. At the points opposite these openings, the pressure continues to be exerted upon the walls; and since this pressure is not cancelled out by an equal and opposite pressure, it pushes the pipe away in that direction and sets the cylinder into rotation. Barker connected the axis of the cylinder to the millstones and the appropriate apparatus, and a corn mill was created out of this..." [pp. 173-74].

"*Mills driven by steam engines.* Tried first in England. This was the origin of the so-called *Albion mill* in London, which had 20 sets of millstones and was set in motion by 2 steam engines. It was destroyed by fire on the 2nd March 1791. In the 18th century this system was still a rarity. In Germany, in the first decade of the 19th century, it did not yet..."

"A water mill was built by *Thomas Ellikott* in *Virginia* on the *Okkaquam River.* It performs all the functions of milling almost without human assistance. It has 3 waterwheels and 6 sets of millstones. No one needs to bring the corn up the stairs and throw it into the hopper: the mill itself does this through the mechanism of a moving *Archimedean water screw*, which screws the corn horizontally forward, and a kind of *system of buckets*, which brings it up to the top floor, and guides it from there through the hopper into the area between the millstones. Before being poured in it is cleaned by a further machine. After the flour has cooled, the machine brings it automatically to the place where the flour containers stand, and even pours it into them" [pp. 183, 185, 186].

In Germany the nobles at first maintained that the wind was their property; but then the bishops challenged them, claiming it as ecclesiastical property.

"In 1159 the emperor Frederick I made water mills a regalian right. The only exception for a while were small non-navigable rivers. The regalian prerogative was even extended to cover the air. It was already an established practice in the 11th century for ruling princes to oblige their subjects to have their corn milled in the

^a Poppe mentions their works on pp. 167-68 (notes 66-76) of his book.—Ed.

seigneurial mills and in no others, in return for a certain fee. *Privileged mills or compulsory mills*" [pp. 189-90].

"In the first half of the 18th century the Dutch also provide practical instruction in the millwright's art" [p. 192].

The mill passed through the following stages of development, beginning with the period of the Roman Empire, at the start of which the *water mill* was introduced into Rome from Asia Minor:

Middle Ages. Hand mills, animal mills and water mills. (Windmills invented in Germany in the 10th or 11th century. First used seriously from the 12th century onwards. Until the middle of the 16th century the only ones used.) Characteristic that the German nobility claimed the wind as its property, then the priests. Frederick I made water mills a regalian right in 1159, then extended this to cover the air. *Privileged or compulsory seigneurial mills.* Moses said: Thou shalt not muzzle the ox when he treadeth out the corn.^a But the Christian lords of Germany say on the contrary: "Serfs should have a big wooden board fastened round their neck, so that they can't use their hands to put flour into their mouths."²⁰⁸

The sole improvement in the water mill: For a long time, the flour was caught, just as it emerged from between the millstones, in a special container. The *hand sieves*, which were previously used to sift the crushed corn, were now fixed in this container, which was designed in such a way that they could be turned with a crank.

Sixteenth century. Beginning of the 16th century, a sieve stretched out to form a bag, the *bolter properly so called*, shaken by the mill itself.

Windmills were very widespread in Holland in the first half of this century. They were converted from German into *Dutch windmills*. In the middle of the century the Dutch were already using wind-driven sails to draw water. Movable top. Stone building. *Braking system*, in order to bring the mill to an immediate halt while in motion. Mechanical contrivances to turn the top into the wind, even if still very clumsy. (The *cap* of the mill.) Namely thus: the sails are directed towards the wind by means of the cap. [XIX-1168] The cap is turned round on rollers (pointed) by crowbars, etc. At the end of the 16th century transportable mills for military purposes, *field mills, wagon mills or animal mills*, which can be brought from one place to another on a wagon pulled by an ox.

^a Deuteronomy 25:4.—Ed.

Seventeenth century. With some non-water mills (*hand querns*) the motion was produced by pushing and pulling with *handles*. The motive power acts very unevenly here. The *flywheel* introduced (fixed to the crankshaft) to facilitate the motion and make it more uniform. Some theoretical investigations into flywheels, pinion wheels and rotary motion in general.

Eighteenth century. Two sets of millstones set in motion by one waterwheel. (This had already started in the *17th century*.) Namely, a single waterwheel acts on a single axletree, which acts on 2 runners, and thereby 2 sets of millstones are also set in motion, and indeed it acts on 2 runners through side-axles, gearing, and connecting gear (see above).^a But now greater motive power is required. The *theory of friction* is developed. Epicycloidal shape for the teeth of wheels, gears, etc.

Investigations into the better utilisation of the motive power itself, the water, its regulation. Necessary to determine the thrust of flowing water; whether a certain amount is sufficient for a particular purpose, whether it needs to be used as a whole or in part. Theoretical writings *de motu aquae*,^b its velocity, obstacles it comes up against. *Current meters* to determine the flow velocity of the water. Hence the first *measurements of motive power*.

What was further found important (already in the 17th century, and earlier still in practice, in a crude form) was *levelling or water surveying* (i.e. the determination of the gradient or the inclination of the bed of a river, a stream, a canal, etc.). In the 18th century the *level or water level*.

Artificial inclines. Millraces. Since the middle of the 18th century. Theory of the *millrace*. Parabola as form of the millrace for overshot waterwheels and breast wheels. Whether the water acts by velocity or weight. Theory of the *resistance or thrust of water*. Newton, Mariotte, the Bernoullis, d'Alembert, Euler, etc. (Laws determining the force of thrust.) Investigations into the most advantageous form of *waterwheel*. Theory of waterwheels difficult. Practice only followed theory slowly here.

Second half of the 18th century. *Water mill without wheel and trundle*, consisting of a cylinder capable of moving easily about its axis, open above, and a large number of horizontal pipes inserted into it near its bottom, closed at their extremities, but provided with a side-opening close to the end, out of which the water can flow in a horizontal direction. The principle here is the uniform pressure of

^a See this volume, pp. 397-98.—*Ed.*

^b On the motion of water.—*Ed.*

the water on the pipes. If the water runs out at the side where it finds no resistance, the pressure on the other side is not cancelled out into equilibrium, and the pipes therefore turn. The principle is *au fond*^a the same as with the steam engine—movement produced by removing the equilibrium of the motive power.

Milling with steam engines. With this at the same time a system of machinery. 20 sets of millstones at the Albion in London, set in motion by 2 steam engines. (Burned down in 1791.)

Similarly at the end of the 18th century. *Water mill* as system; not only by the combination of 6 sets of millstones, but automatically (through the Archimedean water screw). The corn is carried up the escalator, it is deposited on the upper floor, it is guided from there through the hopper to between the millstones, it is cleaned by machinery connected to them, it is poured out, the cooled flour is brought automatically to the place where the flour containers stand and automatically poured into them. This was built by *Thomas Ellikott* on the Okkaquam River in Virginia. Now the system of the automatic milling machine had been perfected.

[XIX-1169] What drove the *Dutch* (since 1579 separated from Spain as the United Provinces) to use *wind power* was the lack of rivers with any considerable inclination. // A great lack of mines for the setting up of actual factories. There were neither smithies nor ironworks there of any size. // // The most prominent of the trades carried on there were wool, silk, linen manufactures, oil and saw mills, paper and dyeworks. Almost all these trades had already reached their highest level towards the end of the 17th century. Declined from then onwards. // // Tobacco factories. //

United States of America. Its trade (export of grain and flour, etc.) with the West Indies. But particularly during the *Revolutionary War* (1793-1807, etc.) their trade increased with England, France, Spain, Portugal, and numerous other European countries. Demand for American flour (whereas otherwise they only had to supply the West Indies with it). 619,681 barrels of flour were exported from the *United States* in 1791; 1,074,639 in 1793.

// Here, as previously with the Dutch, the first trades to become prominent were closely connected with trade and seafaring. // // The corn trade was very insignificant in the Middle Ages, took on a certain importance in the 17th century, grew in the 18th and 19th centuries. One may say that the trade in flour was first conducted on a world-wide scale by the *UNITED STATES*. //

^a At bottom.—Ed.

Gunpowder, the compass, and the printing press were the 3 great inventions which ushered in bourgeois society. Gunpowder blew up the knightly class, the compass discovered the world market and founded the colonies, and the printing press was the instrument of Protestantism and the regeneration of science in general; the most powerful lever for creating the intellectual prerequisites.

But the *water (wind) mill* and the *clock* are two machines inherited from the past. Their development prepares the way for the period of machinery, even during the time of manufacture. Hence "MILLS"^a is the word for all instruments of labour set in motion by the forces of nature, including the more complicated tools in which the human hand is the MOTOR. With the mill the elements of machinery are already developed alongside each other in a certain independence and extension; motive power, the PRIME MOTOR engaged by the motive power, *connecting mechanism*, wheels, levers, cogs, etc., between the PRIME MOTOR and the *working machine*.

The *clock* is based on the craftsmanship of artisanal production together with the erudition which characterises the dawn of bourgeois society. It gives the idea of the automatic mechanism and of automatic motion applied to production. The history of the clock goes hand in hand with the history of the theory of uniform motion. What, without the clock, would be a period in which the value of the commodity, and therefore the labour time necessary for its production, are the decisive factor?

"Flails already known to the ancients. *Threshing sledges and threshing wagons* (threshing machines) among the Phoenicians" [Poppe, op. cit., Vol. I, p. 194].

The water mill, first used for milling corn, could naturally be employed on different materials, for all similar purposes, with appropriate modifications to the working instrument. In the period of manufacture, therefore, it was extended to all manufactures in which this motive power, etc., was employed, either as a whole or in part.

Oil machines. Oil mills, stamping mills.

"Oils. The process by which they are obtained from seeds and fruits sometimes involves merely squeezing out, but more often the seeds or fruits are *crushed and ground*, and then *squeezed out* once again. The ancients already obtained their oil by squeezing in an *oil press* or *pressing machine* [pp. 220-22]. There are many *oil mills* in Holland" [p. 227].

^a Marx uses both the German and the English term. Cf. this volume, p. 392.—*Ed.*

The *needle factory*, which Adam Smith takes as his example, is itself a factory for an *instrument* of labour.²⁰⁹

Nuremberg. The main centre of inventions for tools, on the basis of handicraft production, from the clock (Nuremberg egg²¹⁰) to the *die stamper* used for forming pinheads and setting them on the pins.

The *thimble* was also a Nuremberg invention [see Poppe, op. cit., Vol. II, pp. 4-7, 13-14, 95].

[XIX-1170] "The *saw* is ancient; the present-day saw is not very different in shape from the saw of the ancient Greeks. Already in the 4th century there were water-driven *mills for sawing wood*. There was already a *sawmill* in Augsburg in 1337. In *Norway* in 1530 the first sawmill was built under the name of 'The New Craft'" [ibid., pp. 33-36].

"Already in the 16th century [there were] mills which set in motion many saw blades, cutting one or more trees at once into many planks. Euler, *Sur l'action des scies* [1756]. Nancarrow, *Calculations Relating to Grist and Sawmills* [1794].^a (Improved theory of sawmills.)" [Pp. 41-43, 45-46.]

"*Boring mills* for the boring of wooden tubes already existed in the 16th century. *Veneering mills* for precision cutting of stained and rare types of wood were invented in the 16th century by Georg Renner of Augsburg. (The men of Nuremberg and Augsburg were excellent cabinet-makers.)" [Pp. 43-46.]

Paper mills.

"*Rag (linen) paper* seems to have been invented in Germany in the 14th century. Straight after the invention of rag paper mechanical contrivances were used for the crushing and pounding of the rags. The first paper mills were *hand mills*, and only after a number of years were *water-driven paper mills* set up, when large-scale paper-making started. In the 14th century [they were to be found] in Germany (Nuremberg) and Italy. The *rag cutting machine* first became known in Germany in the first quarter of the 18th century... Up to the end of the 17th century the rags were merely converted into a pulpy mass by the hammering or stamping of the apparatus. Then the *paper milling machine*, called the *Hollander* or *Dutch machine*, was invented in Germany. A cylinder lined with a large number of iron bands, housed in a strong wooden container, crushed the rags it took up out of a trough. It was set rotating by the water-wheel with the help of a system of gears. The Germans did not recognise the usefulness of these machines, and paid no attention to them. The Dutch snatched them up. They used them as *hand mills* initially, then after some time arranged for them to be driven by *windsails*.

"*Golden age of paper milling in Holland*" [pp. 196-203]. "The Dutch conducted their papermaking operations *industrially*, appointing a specific person for each individual assignment in their paper mills. They worked quicker and better than the German papermakers, who for the most part carried on the business only in the handicraft fashion" [p. 218].

The *Dutch paper mills* of the 17th century and the beginning of the 18th century can be regarded as an important example of a *manufacture* associated with machinery, in which individual jobs

^a Poppe mentions these works on p. 41 of Vol. II of his book, in notes 64 and 67.—Ed.

are performed by machines, although the whole thing does not constitute a system of machinery. At the same time there is a considerable division of labour in this.

"Sorting and washing of the rags. *Clarification by water. Bleaching of the rags...*" [pp. 205-08]. "Once the paper has been *scooped*, passed between the *felts*, and *piled up in layers* to form a *pad* or *Puscht*, it must be strongly pressed together. For a long time this was done by the so-called *rod* or *lever press*, set in motion by human power" [p. 209]. "*Glazing, blueing*" [pp. 212-17].

A mixture of mechanical and chemical processes.

"*Glass polishing*. Among the ancients only *burning glasses*; they did not know that glasses can *magnify* objects.

"The first trace of the use of magnification lenses in the Arab writer *Alhazen*, 12th century. Only at the end of the 13th century were *spectacles* invented. *Roger Bacon*. The oldest *polishing mill* first improved by *Hook* (1665). *Telescope*. *Magnifying glass* or *microscope*. (End of the 16th century.) The actual *telescope* first spread from Holland in 1609. *Jansen* constructed the first telescope in 1590. Europe first learned from *Galileo* how to make a proper telescope and employ it in astronomy. Then *Kepler*" [pp. 244-47, 249-50, 257-60].

Carriage manufacture.

"Numerous separate craftsmen worked in this trade. There were apart from the wheelwrights, harness-makers, tailors, locksmiths, brass-founders, turners, fringe-makers, glaziers, painters, varnishers, gilders, etc. Later on, in the carriage factories, those workers were assembled together, with the product passing from one hand to the next" [p. 330].

Self-driving wagons, moved along without a harness by the aid of a system of gearing, found in Nuremberg in the 16th and 17th centuries [p. 348].

[XIX-1171] *Metal factories.*

1) *Stamping and hammering works.*

"The ancients already *stamped* or *fragmented* the ore before smelting, *washed* and *cleaned* it, partly to accelerate the melting, partly to obtain the metal with as small a waste as possible. The ore was crushed to a powder in a mortar; this powder was then ground in an ordinary handmill, and subsequently cleaned and washed. The washing of the minute pieces of ore was done in *sieves*. Actual *stamping works* or *stamping mills*, with stampers, which pounded the ore in a stamping trough, were invented in Germany in the first years of the 16th century; the iron-shoed stamper was positioned close to the shaft of the waterwheel, and the cams on this shaft raised the stamper during the rotation of the wheel. At the beginning there were merely *dry stamping works*, i.e. no water entered the stamping trough. But the crushed ore gave off such a thick dust during the functioning of these stamping works that the workers were physically unable to endure it, and then the subsequent smelting process could not progress properly. This situation gave rise very soon to the idea of *wet stamping* or *stamping with water*. This improved arrangement of stampers and stamping troughs had already been achieved in the 17th century, but the *washing works* first [became more widespread] in the 18th century", etc., etc. [pp. 381-84, 386].

The use of bellows.

"The oldest way of fanning the flames was to use a piece of skin, or tree leaves, or thick green branches. Later on they used *reeds*, through which the air was blown into the fire with the mouth. *Leather bellows*, where a quantity of air was incessantly blown out by the simple pressure of the hand from a container to a communicating pipe. Known very early on, among the *Greeks*. In smelting works too, large bellows of this kind were set in motion by hand. Up to roughly the *beginning of the 14th century*. Around this time the first bellows driven by waterwheels. *Wooden* instead of leather bellows, lasting 10 times longer than leather ones", etc., "invented in *Germany*, Nuremberg, already before the middle of the 16th century" [pp. 387-90].

"*Large hammer works* were established in the 13th and 14th centuries for forming the metal, particularly iron, copper, brass and lead, into *bars* or *sheets* with heavy iron hammers, set in motion by the *cams on a waterwheel shaft*. At the beginning very inadequate, like all mills. Only in the 18th century was the shape of the cams, the design of the waterwheels, etc., and the blowing machines perfected, particularly by *Swedish scientists*" [p. 428].

//Poppe (*Geschichte der Technologie*) shows how the *urban crafts* (these being independent activities of free men) have developed since the 11th century, bound up with trade and science in the towns, and how the guilds, livery companies, mysteries, in short industrial corporations, have developed together with these crafts, politically too.^a There are many "*orders*" of this kind dating from the 12th and 13th centuries.

"Germany in those days possessed the greatest masters in almost every craft. Louis IX of France had the handicraftsmen organised into guilds by Stephan Boileau in 1270. Frederick I and Frederick II endeavoured to abolish the craft associations, which were becoming refractory. Influence of the craftsmen in the towns. All the attempts of princes to suppress the guilds were of no avail. Their importance increased more and more. The craftsmen violently demand not only a share in the government of the towns, but exclusive control of them. *Golden age of the crafts in the Netherlands*. The wool weavers play the most important role here. In 1304 a battle at sea between the Dutch and the Flemings, won by the former. In the 14th century conflict between the craftsmen and the urban authorities. The craft guilds always had periods of weakness, but always righted themselves. Indeed, each craft sets up a complete armament for itself. In the 14th century many inventions and discoveries. All kinds of weaving, metalworking, working in silver and gold, reach a very advanced stage. 15th century. No significant change in the organisation of the craft system. At the end of that century *Nuremberg* the most flourishing of the German towns. 16th century. Constant increase in crafts and trades. *Germany* is again outstanding in inventions. Spanish Netherlands. England" [Vol. I, pp. 13, 15-24, 27-29].

"In the 17th and 18th centuries the actual manufactures and factories emerge, especially in *England* and *France*" [p. 31].

"*Manufacture and factory* when numerous crafts *come together* and work towards a *single goal*. It is called *manufacture* when hands are directly used, or if they are in short supply, machines are used, to produce [XIX-1172] commodities. *Factory* when fire and hammers are used for this. Some trades cannot be carried on except on a

^a Here Marx summarises pp. 9-12 of Vol. I of Poppe's book.—Ed.

large scale; e.g. *porcelain making, glass making, etc., are therefore never handicrafts. Some trades, e.g. weaving, were already carried on on a large scale in the 13th and 14th centuries*" [pp. 31-32].

"In the *18th century* many men of learning set out with great energy to achieve a precise knowledge of the handicrafts, manufactures and factories. Some made them subjects of special studies. It was only in modern times that the connection of mechanics, physics, chemistry, etc., with the handicrafts" (he should have said production) "was properly recognised. Otherwise the rules and customary practices were handed down in the *workshops* from the masters to the journeymen and apprentices, and *thus there was a conservative tradition*. Previously, *prejudices* stood in the way of the men of learning. The term *technology* is first used by *Beckmann* in 1772. Even before the middle of the 18th century there is a treatise on the diseases of artisans and craftsmen, by the Italian *Ramazzini*. A complete technology was the work of *Réaumur* and *Shaw*. The former put his plan forward to the French Academy. HENCE: *Descriptions des arts et métiers, faites ou approuvées par Messieurs de l'Académie Royale etc., in folio, Paris, beginning of 1761*" [pp. 62-64, 81-82, 91-92].^{a//}

Spinning and weaving.

1) *Woollen materials.*

"Before the *10th century* the wool manufactures of *Germany* were the most renowned in Europe; the plant nurseries of the Netherlands manufactures. The cloth factories of *Ghent* were already flourishing in the middle of the 12th century. *Florence, Milan, Genoa, Naples* were the most renowned from the 13th century onwards" [pp. 243-44].

"Even the ancients did not convert the shorn wool into thread without preparing it first. It had first to be cleansed of impurities and dust. For this reason it was *teased* and *willeyed* or sorted and beaten, then *washed*, greased with olive oil or butter, to make it *easier to work*, and finally *scribbled* and *carded*.^b For *washing the wool* the ancients used a kind of *soapwort* (struthium).

"The ancients were to some extent familiar with the process of *willeying* or *beating* the wool, to *improve the regularity of the fibres*. Subsequently, *wool beaters* were introduced for this specific purpose. Nuremberg already had these in the 13th century. At the *beginning of the 18th century*, and perhaps even earlier, the wool was *willeyed by machine*, i.e. a special machine was used to *disentangle* it: the *willey*. In England more recently improvements were made to this machine (GIGGING MILLS, TOWING MILLS, MACHINES FOR TWITCHING WOOL).

"Pliny was already familiar with *teasing, scribbling and carding*, i.e. with implements with iron spikes for *loosening, dividing and equalising the length of the fibres*. Such scribblers were now improved, the number of teeth they had was increased, etc. Nevertheless, a considerable amount of time continued to be expended on this, and many people continued to be used in wool manufactures to disentangle and card a large quantity of wool. But these simple implements were used up to the middle of the 18th century and beyond. In 1775 *SCRIBBLING MILLS* and *CARDING ENGINES*^c were used for the first time. Driven either by waterwheels or

^a The title was taken from note 92 on p. 92 of Vol. 1 of Poppe's book.—*Ed.*

^b Here Marx adds in brackets three German synonyms denoting the operations listed.—*Ed.*

^c Marx gives the two English terms in brackets after their German equivalents.—*Ed.*

by steam. Richard Arkwright was the man who smoothed the way for this invention. *50,000 wool carders* demonstrated against him at the Houses of Parliament. The machine did the job better, on a larger scale, and more cheaply. These machines consist of a number of cylinders to which toothed cards are attached; 2 pairs of cylinders with interlocking cards always work together..." [pp. 265-69].

"Now to draw out the carded wool into a *single thread*, to turn it into yarn by *spinning*. The ancients used the *spindle* for this purpose. The *spinning wheel* was a more recent invention. The first spinning wheels were *hand-wheels*, big wheels set in motion by the right hand of the person spinning, while the left hand drew out the thread. Only in 1530 was the small *treadle* invented, by *Jürgens* of Dorf bei Braunschweig. A *double spinning wheel*, or spinning wheel with 2 spools, was also invented in Germany. The aim of this was for two threads to be spun at the same time. The attempt had previously been made to see whether one person might not be able to spin on 2 spinning wheels at the same time, with long practice. This was indeed possible, but operating the treadle was too onerous. In the *middle of the 18th century* there also appeared spinning wheels which simultaneously reeled, doubled and twisted the spun [XIX-1173] yarn" [pp. 265-72].

"*Spinning machines* or *spinning mills*. A machine set in motion by the human hand, using a crank, or by a waterwheel or steam engine, which spins 60, 100 or more very fine and uniform threads at the same time, and can even be set in motion together with the *scribbling and carding machines*, using the same source of power.

"Spinning machines were already known in the first quarter of the 18th century (then only used for sheepswool). Probably in Italy first of all. *Arkwright* was the first to use them for cotton, in 1775. Difficulties were experienced in introducing this machine in England from the beginning of the 18th century, and similarly in France, even after Arkwright's invention; they were first overcome by the COTTON manufacturers and then by the WOOLLEN MANUFACTURERS... [pp. 273-76].

"The *reel* was invented for *parting the yarn into skeins, hanks or bundles*. The common *hand reel* first. Then the *more developed variety* of the clasp or *number reel*. Still more developed kinds of reel were connected up with spinning wheels in the 18th century. They even invented reels which indicated the number of skeins and threads with a pointer on a dial...

"After the invention of shearing and pressing, the teasing and dressing of the woollen cloths (stuffs) became so complicated that it could only be performed by skilled *cloth dressers* and *cloth shearers*, who already belonged to the most highly reputed craftsmen at the time of the revival of learning. *Gigging* and *shearing machines* were introduced into the English cloth factories in the 18th century, making it *unnecessary* for *carding and shearing* to be done by human hands. In 1758 *Everett* introduced the first water-driven shearing mill. 100,000 people who had been thrown out of work set fire to this machine.

"*Rolling* or *cylinder machines* were introduced in England, particularly in the second half of the 18th century, to replace the customary *mangling* or *rolling* of the cloth" [pp. 289-90, 292].

"*Fulling*, in order to clean, thicken, and strengthen the cloth, already practised among the Romans as *fullonum*, treading the cloth with the feet. After the invention of *fulling mills* the cleaning of the cloth was separated from the rest of the preparation, namely *gigging* and *dressing*. Fulling mills were already in existence at the end of the 10th century. They are *stamping* or *hammering works*. Both stamp" [pp. 286-87].

2) Cotton materials.

"The Dutch were first to master the weaving of calico when they drove the Portuguese out of most of their Indian possessions. The first *calico manufactures* in Holland at the *end of the 17th century*. Actually just *calico printing works*, printing on white calico bought up cheaply from India. After some time *calico weaving* as well in Holland, then Switzerland, Hamburg, Bremen, Augsburg, Austria, Saxony, Lusatia, etc. *Printing presses, printing machines* for calico" [pp. 313-14, 316].^a

// As soon as large-scale manufacture is somewhat developed, it employs separate machines for different simple processes such as *milling, crushing, stamping, fulling, pressing*, etc.; but the motive power has to overcome all the inadequacies of the mechanism. //

"Easier to clean cotton than wool.

"But the operation of *disentangling* the cotton threads is more difficult. The Indians and the Greeks planked or disentangled the threads with the planking bow, as hatters plank their hairs. Simple combing, teasing or carding was first set aside on a large scale in the *middle of the 18th century*, when Arkwright invented his carding machine. *Spindles* for spinning in the ancient world and India. In 1775 Arkwright took out the patent for his spinning machine.

"... The *scutching machine* had completely cleaned the willeyed cotton, and now it was the turn [XIX-1175^b] of the *ROVING MILLS*,^c which took up the cotton and pushed it out at the other end in the form of thick, sausage-shaped threads (ROVINGS). The spinning of the cotton into yarn is now performed by the *mule*, consisting of many bobbins, which picks up the ROVINGS itself, and draws out and twists them. *WATERTWIST*,^c the less twisted MULETWIST, and the mule itself, as Arkwright invented it. Soon a special machine was constructed for the *WEFT*,^c leaving the mule mostly for the spinning of *warp*. The new machine was called a *JENNY*. Finally, the MULE and the JENNY were combined together to form a third machine, which spun nothing but MULETWIST, and muletwist was now much used for spinning the weft. The whole of the machinery, from the carding machine to the mule, was driven by a steam engine" [pp. 336-37, 340-42].

3) Silk.

"Several 100 different kinds of silk were woven in France before the French Revolution, of which 150 had been invented since 1730 alone. In Avignon there was a law that every apprentice might only devote himself to one single type of manufacture, and not learn to produce more than one type of material; this was of great assistance in promoting perfect mastery of the trade" [pp. 413-14].

4) Knitting.

"The *stocking frame or stocking loom* was invented in England; with it, one worker can knit 100 stitches almost in one moment without needing great exertion or skill. The *most complicated* machine in existence. It is entirely made of iron, and consists of more than 2,500 parts. Many hundred needles are in motion at the same time. Invented, at the end of the 16th century (1589), by *William Lee*, a graduate of St. John's College" [pp. 463-64].

^a Marx condenses in quoting.—Ed.

^b Marx skips page number 1174.—Ed.

^c Marx gives the English term in brackets after its German equivalent.—Ed.

In dealing with cotton spinning, *Ure* refers to:

WILLOW and *scutching machine* for opening and cleaning [the cotton]. Two kinds of scutching machine are used: the second is called a *spreading* or *lapping machine*. Then the *carding machine*. With fine spinning: *first carding* and fine carding. *Drawing* and *doubling*. *Drawing rollers* (*drawing machine, drawing frame or drawer*). *Roving*. *Roving frame* (a kind of initial spinning machine). Finally the *spinning machine for fine yarn*.²¹¹

First, SOURCES OF MECHANICAL POWER.

*“A *prime Mover* ... the *great operative*, without whose powerful aid all the human hands employed would be able only to accomplish small and feeble results. The ponderous machinery of the factories were all a useless erection unless it could be put into full and continuous movement. *Prime movers*: steam engines, windmills, waterwheels, air engines, electromagnetic engines, etc. Combinations of mechanism adapted to communicate motion. *Some of these generate the force which actuates them, as the steam engine, electromagnetic engine, etc.* Others are only arrangements for collecting mechanical power, either from the natural movement of water, or of that of air. Engines belonging to the latter class are dependent upon a supply of force, by its very nature uncertain and often intermittent, and which, if deficient, cannot be increased by man. Whereas the steam engine and its allied machines are absolutely at man’s disposal, can be forced up to any amount of activity, can be set in action at any required [XIX-1176] time, and can be arrested at a moment’s notice” [*The Industry of Nations*, Part II, London, 1855, pp. 61-62].²¹²

“The steam engine can be so adjusted, as perfectly to attend to itself, to feed its furnaces, to replenish its boilers, and, in addition, to govern its rate of movement” [*ibid.*, p. 68].

“*Caloric engine of Ericsson*. ‘This invention,’ says Mr. Ericsson, ‘consists in producing motive power by the application of caloric to atmospheric air or other permanent gases or fluids susceptible of considerable expansion by the increase of temperature; the mode of applying the caloric being such that, after having caused the expansion or dilatation which produces the motive power, the caloric is transferred to certain metallic substances, and again retransferred from these substances to the acting medium at certain intervals, or at each successive stroke of the motive engine; the principal supply of caloric being thereby rendered independent of combustion or consumption [of fuel].’ ‘The same given quantity of heat which sets it in motion is used over and over again to keep up that motion; and no additional supply is wanted beyond what is requisite to compensate for a small loss incurred by escape and radiation’^a” [pp. 97-98].

“*Manufacturing machines, machines representative of man himself engaged in industrial labour*” [p. 120].

“The object of all the beautiful machinery connected with the first part of the preparation of cotton, prior to its being converted into thread, is to render the fibres clean and free from extraneous substances—to equalise their quality—and to render them as nearly parallel as possible” * [p. 122].

New and ORIGINAL POWERLOOM.

“The old *powerlooms (the best of them) could produce not more than $\frac{1}{3}$ the amount of cloth as compared with the workings of the new looms, although twice

^a The last sentence is from *The Athenaeum. Journal of Literature, Science, and the Fine Arts*, February 19, 1853.—Ed.

the amount of labour is required to produce the same quantity in a given time. An experienced operative* (with the modern *loom) "will produce 26 pieces, 29 inches wide and 29 yards long, of printing cloth of eleven picks per quarter inch, from *two such modern looms*, in a factory working 60 hours per week. The weaving of each piece costs 5¹/₈d. The same person, if set to work at one of the old looms, could only produce 4 similar pieces, each of which would cost 2s. 9d. for weaving alone*" [p. 156].

Stocking loom.

The best sort, the latest of the modern ones (19th century), the "CIRCULAR LOOM of Chevalier *Claussen*, *adapted for weaving all kinds of looped fabrics, produces the fabrics by means of a continuous circular motion. It may be worked either by steam or hand. The great point of difference between this and the common stocking or knitting frame is, that the rows of loops are formed spirally, and not parallel to each other; the loops are also formed simultaneously upon different parts of the circumference of the frame.* The *goods are not liable to 'running', arising* otherwise from a *defect or breaking of any one of the loops. The movement in the circular loom being continuous, and in *one direction only*, and not alternating forwards and backwards as in the ordinary loom, no time is lost in the back strokes, and in consequence a larger quantity of work can be performed in a given amount of time.* The LOOM was shown by *Claussen* in the *Great Exhibition of 1851.^a It has 1,200 needles, placed on the circumference, and will with ease make 80 revolutions in the minute. The quantity of loops or stitches made will be equal therefore to 1,200×80, equal to 96,000 per minute, and these produced by the hand power of one workman alone" [pp. 164-65].^b

[XIX-1177] *Silk, Jacquard loom.*

"The simple looms are only capable of producing an unfigured fabric, and have no power to form embroidered tissues... For this purpose a peculiar apparatus is necessary, and looms to which this is attached are called Jacquard looms... If while the weaving were going forward one or two of the threads of the warp were lifted or depressed while the others were undisturbed, the cloth then made would exhibit a different appearance in that part of it where these disturbed threads were, to the other parts. It would show a certain mark on its surface; and if this disturbance were occasional, these marks would be repeated at a certain distance from one another, and thus a sort of figure would be produced in the cloth. This is what the Jacquard apparatus accomplishes... Invention of *Mr. Barlow*,^c exhibited on the Great Exhibition. In this loom, two"* (instead of one as previously) * "perforated cylinders are used, and the cards are disposed on these in alternate order, so that while one cylinder is in action, the other is changing its card and preparing for work. By this arrangement, the loom can be worked with a velocity 40% greater than that of the ordinary construction. The steadiness of its action also greatly increased, and the strain upon the warp diminished"* [pp. 159-60, 162].

LACE MACHINE (BOBBINET). (*Tulle.*)

"There is no WARP OR WEFT in the STOCKING FRAME and the *circular loom. The fabric is composed entirely of loops,^d and of one continuous thread.* With the

^a The first international trade and industrial fair.—*Ed.*

^b Marx quotes from *The Industry of Nations* with minor alterations.—*Ed.*

^c *The Industry of Nations* further has: "which received the Council Medal at the Great Exhibition".—*Ed.*

^d Marx adds the German term in brackets.—*Ed.*

lace machine, the warp does not materially differ from that of the common loom; the chief peculiarity resides in the weft, and in the most curious and ingenious arrangement of the shuttle, called in this machine the bobbins” [pp. 166-67].^a

This is the machine which Ure describes as being as far superior to the most complicated chronometer in richness and variety of mechanical invention as the latter is to an ordinary turnspit.^b

Sewing machine.^c

A further addition to be made to the *PRIME MOTORS* is the *HYDRAULIC PRESS*.

*“Water engines in principle not differing from the steam engine: that is to say a column of water has been made to act upon a piston^d within a cylinder of the same general description as those of the steam engine. Hydraulic press, capable of such a wonderful variety of application as to be fit for the compression of a few bales of pocket-handkerchiefs, or for elevations of stupendous structures” * [pp. 107-08].

Example of the specialisation and differentiation of implements.

*“It has been stated that not less than 300 varieties of hammers are made in Birmingham, each adapted to some particular trade” * [p. 388].

STEEL PEN MANUFACTURE. First division of labour, then production by machinery.

“The INTRODUCTION of the *steel pen about 30 years old, and on its first being submitted to public approval each pen was charged at 6d. At the present moment 124 may be purchased for the same sum, and of equal, if not superior, quality. In 1820 the first gross of steel pens was sold, at the rate of £7 4s. the gross. In 1830 they had fallen to 8s., and the price gradually fell, until it reached the sum of 6d., which is its present limit. One of the Birmingham factories produces at the rate of 960,000 per day, or 289,528,000 per annum. The total production of the Birmingham makers amounts to at least 1,000 millions per annum. In the manufacture, the steel assumes the most wonderful variety of texture. At first it is soft as lead, afterwards it becomes as brittle as glass, and finally it is tempered to a state of elasticity as nearly [XIX-1178] as possible approaching that of the quill pen*” [pp. 391-92, 394].

The Birmingham *STEEL PEN MANUFACTURE* IN ITS ORIGINAL STATE, up until ABOUT 25 years ago, was the picture of a modern system of manufacture, based on the division of labour. For individual processes it employed in part machine-like tools, in part machines (just as had been done in the original manufacture, once it reached a certain height of development) and in part steam-driven mechanisms, but with interruptions and hand labour in between.

^a Marx quotes from *The Industry of Nations* with minor alterations.—Ed.

^b A. Ure, *Technisches Wörterbuch...*, Vol. I, Prague, 1843, p. 296.—Ed.

^c See *The Industry of Nations*, pp. 174-76.—Ed.

^d Marx adds the German term in brackets.—Ed.

*“A strip of thin sheet-steel,^a of the proper width and thickness, is first prepared, by careful rolling and annealing.^a In this state it is ready to be *cut* into pens by means of a *press*, in which are fitted the proper tools for cutting out the ‘blank.’” (*Blank** here means the “plate”.) *“The use of the press is to give a regulated amount of pressure to the tools fitted to it. These presses are worked by women, who are so dexterous that the average product of a good hand is 200 gross, or 28,000 per day of 10 hours. Two pens are cut out of the width of the steel, the broad part to form the tube^a; and the points are cut to such a nicety, that there is but little waste. The ‘blanks’ are now to be *pierced*, and here the little central hole and the side slits are cut by *another press*. These semi-pens are now placed in an *annealing oven* to make them softer, after which they are ‘*marked*’, by the aid of a *die*^a *worked by the foot*, which stamps the name of the maker on the back. The half-finished little instrument is then placed in a *groove*^a and by a *machine* converted from a flat into a cylindrical form. This is called ‘*raising*’ the metal. The pens are again placed in the ‘*muffle*’, packed in small iron boxes with lids, and heated to white heat. They are then withdrawn, and suddenly thrown into a large vessel of oil, where they acquire a brittleness^a that makes them almost crumble at the touch. The next process is ‘*cleaning*’, then follows ‘*tempering*’,^a which restores the pens to the required elasticity, and is accomplished by placing them in a large *tin cylinder*, open at one end, and turned over a fire in the same manner that coffee is roasted. The heat changes the colour of the pens—first grey, then straw colour, next to a brown or bronze, and lastly to a blue. Still there is a roughness to be removed from the surface, which requires the pens to be placed in *tin cans*, with a small quantity of sawdust. These cans are horizontally placed in a frame,^a and made to revolve by steam, the pens rubbing against each other, by which means they are cleaned. After the ‘*scouring*’ process (which consists in placing the hardened pens in an iron cylinder, which is filled with [filings] pounded [in a] crucible,^a or other abrasive substance, the whole revolves by power, and the friction produces a bright clean surface on the pen), they are taken to the ‘*grinding room*’,^a where each individual pen is ground at the back in two ways, at right angles to each other, or rather over each other, the quality of the pen very much depending upon this operation. By the aid of a pair of *nippers*,^a the girl takes up the pen, holds it for a moment or so on a revolving ‘*bob*’ and the grinding is over. Now follow the pen to the ‘*slitting-room*’,^a where it is placed in a press, where the process is instantly effected. The pens are next examined, and sorted according to their qualities; after which they are varnished with a solution of gum, when they are considered ready for sale”* [pp. 392-93].

This is more than a dozen operations, to which must be added the TRANSFER from one process to the next.

“It was as this kind of manufacture that *Mr. Gillott of Birmingham established the first steel pen factory on a large scale, and the works now carried on in his name are the largest in the world for this purpose. Upwards of 1,000 persons are occupied at these works, the majority of whom are females. About 180 million pens* were made in the year between May 1850 and May 1851, and the weight of the *sheet-steel consumed in their manufacture [amounted] to not less than 268,800 lbs or 120 tons” (ton=2,240 lbs) [p. 392].

^a Marx adds the German term(s) in brackets.—Ed.

[XIX-1179] "For some time the introduction of machinery in the steel pen manufacture appeared attended with insuperable difficulties, for there seemed no possibility of completing a steel pen by anything like a continuous process. This difficulty has, however, been surmounted, and in the Great Exhibition" (1851) "there was shown a machine now in great use, which effects this object. This machine is the invention of Messrs. Hinks, Wells, et Co., of Birmingham. It is entirely selfacting. It receives the steel as a flat ribbon, and cuts, pierces, and side-slits two pens at one stroke, performing six processes at once" * [pp. 393-94].

Automatic workshop.

Paper factory. (Modern.) Earlier this was a separate manufacture, very highly developed, especially by the Dutch, during the 17th century and at the beginning of the 18th. In this connection mills were employed in part for particular processes: first querns, then water or windmills.^a

Precisely this manufacture was very DISCONNECTED in its manufacturing form, owing to the alternation of chemical and mechanical processes within it.

PREPARATORY PROCESSES. "Reduction of the rags, and then removing from them all foreign matters, colouring matters included.

"1) The first machine tears the rags into fine shreds, and at the same time removes the impurities. It consists of a large reservoir, partly filled with water, which is admitted by a TAP,^b and kept running during the process. Across the VAT^c a shaft runs, which carries upon it a wooden cylinder armed with teeth of steel, and at the bottom of the VAT is a *hollowed piece of wood also armed with teeth, and these parts of the engine are so adjusted that when the rags pass between them they are caught and torn into shreds. The cylinder armed with teeth is driven at a rapid rate by a band from the main shaft impelled by the steam engine. The operation of the engine is continued until the rags are reduced to a fine state of division, and are now called *pulp*.^b During the whole time water is continually flowing through the reservoir, but in diminishing quantities, and the impurities are drained away through wire-covered openings, the pure pulp and water alone remaining at last.* The PULP is now very dirty" [*The Industry of Nations*, Part II, pp. 183-84].

2) *Second process.* "Removal of the COLOURING MATTER and rendering the pulp white. If only PURE WHITE LINEN RAGS are EMPLOYED from the beginning, this bleaching is not only unnecessary but even injurious. *When variously coloured rags are used or old writing paper, and such like materials, then the bleaching process is indispensable. By a large pipe communicating with the pulp engine, the semi-fluid mass is allowed to flow away into a reservoir, where it undergoes the bleaching process. The pulp is placed in cisterns,^b and mixed with a solution of chloride of lime.^{b*} The COLOUR is thus soon *removed, and the pulp becomes bleached white*" [pp. 184-85].

3) *Third process.* * "The pulp is now pressed in the hydraulic press so as to reduce its bulk" * [p. 185].

^a J. H. M. Poppe, *Geschichte der Technologie...*, Vol. II, pp. 198, 203.—*Ed.*

^b Marx adds the German term(s) in brackets.—*Ed.*

^c Marx uses the corresponding German term, and adds the English term and a German synonym in brackets.—*Ed.*

4) *Fourth process*. "It is then again washed, so as to remove the chloride of lime" [ibid.].

The preparatory processes are often considerably multiplied when the transition is made from manufacture or handicrafts to machinery—for the sake of the machine itself, because the material which is actually to be worked on, such as cotton, paper pulp, etc., needs to be much more even in quality, more uniformly arranged, for it to be subjected to a purely mechanical process. This is then always a repetition of the same process at different levels.

5) *Fifth process*. "MORE MINUTE division is required. This is EFFECTED by *another pulp machine, called the beater. This machine only differs from the first in the teeth being set closer together, and in the cylinder being made to revolve at a much higher velocity.* The operation lasts *some hours, and so much latent heat is extricated that the pulp becomes very sensibly warm, and is reduced to the last state of fineness. When this condition is attained, the pulp is now fitted for the production of paper, and is let off to the vat, from which it is supplied to the papermaking machine*" [ibid.].

[XIX-1180] Then comes the *actual paper machine*, also preceded by a couple of other processes, the PULP-METER and FROM THE METER TO THE STRAINER [pp. 186-87].

The bleaching forms, it seems, a process in itself, and the same is true of the application of the hydraulic press. The actual paper machine, on the other hand, is completely automatic.

Automatic workshop.

*"There are two great elements of success completely embodied in this wonderful automaton. In all manufacturing arts, one of the most important considerations is *continuity of production*. That manufacturing machine is the most perfect, and the most economical, which is capable of *uninterrupted* productiveness. Wherever the material to be manufactured can pass *without interruption* (and consequently *without delay*) from the first to the last stages of its treatment by machinery, there will be in all probability a better article produced, and at a less cost, than where at every stage it has to be carried from one place to another. No machine yet invented exhibits this more strikingly than that described. It is a *complete system*, for the raw material enters at one extremity, and the finished product emerges from the opposite end.

"In a second point also this machine exhibits its admirable construction, which is *in its being entirely automatic*. It *receives no help from man*, but accomplishes its allotted task by the *combination and appropriate operation of the parts* of which it is made. If *assistance is necessary* in any respect, it is in order to *remove accidental difficulties*, and not for the *purpose of aiding in the manufacture*. The action of the machine is also very *rapid*, the progress of the pulp from the first strainer to the finished roll of paper not generally occupying more than a few minutes"* [pp. 190-91].*)

*) All these English quotations, in which no AUTHOR is mentioned, come from: *The Industry of Nations, Part II: A Survey of the Existing State of Arts, Machines, and Manufactures*, London, 1855.

Hence *CONTINUITY OF PRODUCTION* (i.e. there is no interruption in the phases the production of the raw material passes through). *Automatic* (MAN ONLY [required] TO REMOVE ACCIDENTAL DIFFICULTIES). *RAPIDITY OF ACTION*. The *simultaneity of the operations* is also increased by the machinery, as when THE "BLANK" in the manufacture of STEEL PENS IS CUT, PIERCED and SIDE SLITTED BY ONE STROKE [p. 394].

(As an example of how one factory makes others necessary:

*"In connexion with the steel pen manufacture, a considerable trade in pencil-cases, pen-holders, and little articles necessary to the use of the steel pen, has sprung up" * [p. 395].)

These are the final processes of paper manufacture:

"When the PULP is now FITTED (by the *second PULP ENGINE*) for the production OF PAPER, IT IS LET OFF TO *THE VAT*, FROM WHICH IT IS SUPPLIED TO THE PAPER MAKING MACHINE" [p. 185].

First process. *"The pulp is discharged first into two large reservoirs furnished with revolving arms or agitators, which stir up the mass and prevent its settling at the bottom" * [p. 186].

Second process. *"From these vats the pulp is conducted into an apparatus called a *pulp-meter*. This is an ingenious machine for insuring uniformity in the supply of the pulp to the rest of the machine. It consists of an arrangement of revolving buckets in a circular box, this box is filled with pulp, and as the buckets dip into it, they take up a certain quantity, which they then discharge in succession into a *trough*^a communicating with the first part of the machinery. In all processes where a continuous sheet is formed, as in cotton carding, and wool carding, etc., it is found greatly to secure the uniformity of the sheet, if the machine be supplied with measured quantities of the material, and for this purpose it is generally weighed out, and then supplied to the machine. The application of this principle to the paper engine [is] new" * [pp. 186-87].

[XIX-1181] *Third process.* *"The pulp is then conducted from the meter to the *strainer*.^a As it passes along the trough, a little channel of water from another machine, identical in its action with the pulp-meter, is added to it. This water serves to dilute the pulp to a proper consistency for future operations. The diluted pulp then flows in a single channel to" * [p. 187]

Fourth process. *"the *sand-strainer*. This is a trough in which a series of furrowed ridges of metal are arranged, over which the pulp flows in its onward progress. In thus flowing onwards (*furrowed ridges*^a) it deposits its heavier impurities, which settle at the bottom of the trough, and the pure pulp, which is of lighter specific gravity, flows forward" * [ibid.].

Fifth process. *"When the pulp has reached the end of the *sand-strainer*, it flows down into a strainer called a *knot-strainer*. It is very differently constructed to the preceding. It consists of a trough containing a number of brass bars,^a placed close together longitudinally, and most accurately planed and smoothed. These bars are in a movable frame, which is agitated at each side by a lever, and the bars are so closely set together as to permit nothing but *the fibre of the paper* to pass between them. Any *knots* which may have been in the pulp are removed and left on the upper surface of the bars, while the pulp *filters down* in a box placed for its

^a Marx adds the German term(s) in brackets.—Ed.

reception. As these knots accumulate they are taken away by an attendant"* [ibid.].

Sixth process. *"The pulp is then again strained or filtered, and this time by *ascension*. Passing from the preceding strainer down into a metal box, it is carried forward to a third trough, in which bars similar to the last named, but inverted in their position, are placed. The pulp now filters upwards through these bars, and being now devoid both of all impurities and of all inequalities of texture, it is fit for the beautiful process to which it is about to be submitted"* [pp. 187-88].

Seventh process. *"Proceeding from the last strainer it flows over a leather lip into a little trough containing a two-bladed^a *agitator*, called a *hog*. This agitator effectually stirs up the pulp, and keeps it from settling down at the bottom. It is then conducted on to"* [p. 188]

Eighth process. *"an endless *apron*,^a made of perforated brass-wire.^a Here the pulp *first begins to part with its water*, which streams down through the wire into a wooden reservoir placed underneath. But this water contains a small portion of the finer fibres of the pulp, and the material is too valuable to be wasted. It is therefore made to run out of this reservoir into a trough, which carries it back to the engine employed to *dilute* the pulp coming from the pulp-meter with water. Thus the waste water from the pulp is used over and over again, and it would appear scarcely possible that any of the material should be wasted. The wire apron being continually moved forward, receives a continuous supply of pulp, and carries it onwards. In passing on with the apron, the *lateral edges of the pulp are confined, and made parallel* by a band lying on the apron on each side, called a *deckle band*. These bands move with the apron, and the pulp finally leaves them, its edges being now tolerably firm and well defined. As the pulp passes along the wire web, the latter is shaken so as to facilitate the escape of the water. In proportion as it increases its distance from the strainers, the pulp becomes more and more firm by the constant loss of its watery parts, but it is even at the end of the wire cloth very soft and friable"* [ibid.].

[XIX-1182] *Ninth process.* *"The *marks* called watermarks are now to be produced in the paper, if it should be intended to receive any. These marks consist, in fact, of a displacement of a portion of the pulp where they appear thinnest, by the pressure upon it while yet soft of a wire roller, upon which different devices are wrought. These devices are then reproduced in the substance of the paper, just as sealing wax receives the impress of a seal. And no matter what may be their variety, the soft pulp receives and retains it faithfully. This is effected in a very simple way. *Just before the paper leaves the wire cloth, it passes under a roller* made of brass wire, upon the surface of which the device is produced, by wires wrought into it, and the impress of this roller communicates itself to the paper"* [p. 189].

Tenth process. *"Just prior to the pulp leaving the wire web, a very ingenious arrangement is made in the machine, with a view more perfectly to extract the water. It consists of a metal box placed under the travelling web, and communicating with three powerful air pumps. These pumps are set in motion by the steam engine, and produce a powerful exhaust or vacuum in the box. The effect of this on the superincumbent layer of pulp is to *suck in the water*, and to *cause the fibres very completely to interlace one with another*. The firmness of the texture of the paper is thus very materially promoted"* [ibid.].

Eleventh process. *"The paper now passes between *two rollers upon a web of felt*,^a

^a Marx adds the German term in brackets.—Ed.

leaving *the web upon which it was produced*, which returns for a continual fresh supply. These rollers are covered with felt, and squeeze out a considerable quantity of water, and the paper now becomes pretty firm.* But THE WATER has still not been REMOVED entirely, and the PAPER is still not QUITE DRY and FIRM" [pp. 189-90].^a

Twelfth process. *"*The damp but tolerably smooth sheet is received by a large cylinder revolving on its axis, but charged with high-pressure steam. The heat thus communicated dissipates the moisture as steam, and the paper becomes rapidly very nearly dry. In order, however, to complete it, it passes over several other cylinders similarly heated, and finally emerges from the last of the series a beautifully white, smooth, and continuous sheet*"* [p. 190].

Parallel or subsequent processes.

Glazing the PAPER. *"*When the paper is required to be glazed, it is effected by passing it between polished and heated cylinders, in passing through which it is subjected to the most severe pressure*"* [p. 191].

Sizing and bluing the paper. *"*It will be obvious that by mixing any substances such as gelatine, starch, or colouring matter, with the pulp, the quality and colour of the resulting paper is affected accordingly. The finer kinds of paper are generally impregnated with gelatine or size^b after the paper is made.* This is done outside THE VAT, because otherwise the FELT USED IN THE MACHINE [is] INJURED. On the other hand, *sizing in the vat [offers] many advantages, when substitutes for gelatine can be used. Of these several kinds are employed. A mixture of alum and rosin,^b previously dissolved in soda, and combined with potato-starch, is now largely used for sizing in the vat by the *continental* makers. Paper thus made is less greasy to write upon, but does not bear the ink so well as those which are sized with gelatine. For writing papers in England the application of gelatine by an *after process* is still preferred, and is accomplished *by means of rollers dipping in a trough of the size*. At Mr. Joynson's mills, in Kent, fine writing paper is now made, sized with gelatine, dried, and cut into sheets at the rate of 60 feet a minute in length, and 70 inches in width. At another of the great paper mills 1,400 tons of paper are produced yearly. In Great Britain alone 130 million lbs [of] paper [are] manufactured annually"* [pp. 191-92].^a*

[XIX-1183] *ENVELOPE MANUFACTURE.* (Branch of the *PAPER-FOLDING* machine.) This was originally a manufacture.

"*THE FOLDING,^b GUMMING, AND EMBOSsing*" (to EMBOS=to pick out in relief, *reliever en bosse*) (These are the protruding figures, DEVICES PRINTED UPON THE UPPER END of the paper flap which closes the envelope.) "[are carried on] *by the ordinary modes of production; and at each of these operations every single envelope must be *separately handled*. Great economy gained by the machinery. The *isolation* of the different stages of manufacture consequent upon the employment of manual labour adds immensely to the cost of production, the loss mainly arising from the *mere removals from one process to another*. In embossing by hand a boy will perhaps get through 8,000 or 9,000 per day, and then there must be an assistant to turn down the flap,^b on which the device has been placed, and arrange the envelopes in separate parcels*" [p. 200].

^a Marx quotes from *The Industry of Nations* with minor alterations.—Ed.

^b Marx adds the German term(s) in brackets.—Ed.

The “*FOLDING*” in hand manufacture of this kind was done

*“by means of a bone ‘*folding stick*’, an experienced workwoman folding about 3,000 per day.* [Now a machine] makes *about 2,700 per hour”* [p. 198].

The transition from handicrafts (as in all kinds of weaving, even when done with refined versions of the handloom) and manufacture, where the division of labour predominates, to large-scale industry is *continuous*, in that a mass of new branches of labour, such as NEEDLE, PEN, ENVELOPE making, etc., are first carried on for a short time in the handicraft fashion, then as manufactures, and soon after that by machine. This naturally does not exclude that other branches are directly introduced as machine-based—those in which big supplies are to be delivered from the outset (as with transport) or where the nature of the product requires a big supply (as with telegraphy, etc.).

The casting of type (letters for printing) can be seen as an example of a *manufacture* resting on the division of labour. Five main operations.

1) *Casting the type*. *“Each workman can create from 400 to 500 types an hour”* [p. 203].

2) *Breaking off the type* “(the LEAD and ANTIMONY in the METAL poison the LITTLE BOYS who have to do this), *breaking off to a *uniform length*. At this operation a quick boy can break off from 2,000 to 3,000 types an hour, although, be it observed, by handling new type a workman has been known to lose his thumb and forefinger from the effect of the metallic poisons” [ibid].

3) “*The types are rubbed on a flat stone*, which takes off all roughness or ‘*bur*’ from their sides, as well as adjusts their ‘beards’ and their ‘shanks’.^a A good *rubber* can finish about 2,000 in an hour” [p. 204].

4) “The types, by men or boys, fixed into a sort of composing stick about a yard long, where they are made to lie in a row with their ‘nicks’^a all uppermost: 3,000 or 4,000 per hour can be thus arranged” [ibid.].

5) “*The bottom extremities of these types*, which had been left rough by the second process, are, by the stroke of a plane,^a made smooth, and the letter ends being then turned uppermost, the whole line is carefully examined by a microscope; the faulty types are extracted; and the rest are then extricated from the *stick*, and left in a heap” * [ibid.].

Thus if 1 FOUNDER casts 500 TYPES in 1 hour, and a boy breaks off 3,000 in 1 hour, 6 FOUNDERS TO ONE BOY are needed. And since 1 RUBBER rubs 2,000 IN AN HOUR, there are 4 FOUNDERS TO 1 RUBBER, and if one ARRANGER sets 4,000 PER HOUR, there are 8 FOUNDERS TO 1 ARRANGER.

With division of labour into MULTIPLES the following should be noted: Assume that there are 3 different operations, related in such proportions that 2 men must be employed in the first operation, and 1 man in the 2nd, to work on what the first

^a Marx adds the German term in brackets.—*Ed.*

operation has provided, whereas [XIX-1184] the 3rd operation requires 4 to work on the product of the 1st and 2nd operations. So the following numbers must be employed: *operation I*, 2; *operation II*, 1; *operation III*, 4—a total of 7. These MULTIPLES proceed from the principle of the division of labour, so that despite the different periods of time required by the various operations, all the workers are still employed in those operations simultaneously, exclusively, and for equally long periods of time. The less time a given operation costs for a particular quantity of the phase of the product provided by it, or of the particular function involved (e.g. stoking, repair of the machines, etc.), the greater must the number of other workers be to enable one individual to be employed in performing exclusively this function.

If, however, I employ many founders, and therefore a proportionately large number of BREAKERS, RUBBERS, and ARRANGERS, THE PRINCIPLE OF MULTIPLES BEING GIVEN, this is the principle of simple cooperation. Unless the work is done on a certain scale, the division cannot be carried out at all.

Many attempts have been made, with varying degrees of success, to cast the types using a system of machinery. This will succeed eventually. Once a certain kind of production attains the form of manufacture, the constant endeavour is to transform it into factory production with machines.

A [result of production] by *machinery*, especially where already existing machinery is improved or driven out by new machinery, is the **economisation of space*, hence reduction of the *cost of production*.

*Powerloom.**

The original form of the powerloom very clumsy, very similar to the old [hand]loom. The new one very altered.^a "The *modern POWERLOOM* (for weaving ordinary yarn) *was only *about half the size* of the cumbrous original machine, and was made chiefly of iron, while the former was principally constructed of wood.* This *powerloom [is] a more complicated piece of mechanism than it appears to be. And this need not surprise us, when it is remembered that it *fulfils all the duties of the weaver*. It throws the shuttle, operates upon the healds, the batten and the beams, just as if an intelligence was communicated to it. It raises and depresses the alternate threads of the warp, it throws the shuttle, it drives up each thread of weft with the batten, it unwinds the warp off the warp-beam, and it winds up the woven material upon the cloth roller. But still more remarkably, this loom will not go without weft. On the old plan it was indifferent to the loom, so to speak, whether it had weft or not. Its operations were continuous, and the empty shuttle flew as before, but of course without making any cloth until the attendant stopped it and mended the thread, or placed a fresh bobbin in. But the loom of Messrs. *Kenworthy and Bullough* immediately stops under such circumstances. The moment the slender thread breaks, or is absent from its accustomed place, the noisy machinery

^a Cf. the illustrations in *The Industry of Nations*, Part II, pp. 154-55.—*Ed.*

is instantly arrested, the shuttle ceases to fly and the wheels to move. The attendant then replaces the thread, and all goes on as before. By this ingenious contrivance the quality of the cloth is greatly improved, and much of the care and watchfulness of the weaver is rendered unnecessary, for the arrest of the machinery immediately informs him of the accident. This apparatus* is called *the self-acting stop*” [pp. 154-57].

“The *warp, before it is brought to the powerloom, has to be prepared by the unwinding of the threads off bobbins, and arranging them parallel to each other. In order to strengthen them, the threads of the warp have also to be sized and dressed with paste; both these operations [XIX-1185] are done by machinery, with a little assistance from the attendants” [p. 158].

“*The shuttleless powerloom for weaving ribbons^a and fringes^a Exhibited* 1851 i.a.* *The ordinary loom for weaving ribbons and other narrow fabrics requires, for the perfect play of the shuttle, a space three or 4 times greater than is occupied by the web. In all looms hitherto constructed, the shuttle has been an indispensable necessity. To overcome this, and to economise space, invention of Messrs. Reed of Derby*” [pp. 162-63].

The machine factory.

*“The construction of a machine to bring iron into shape must differ very materially from one intended to deal with the soft and delicate fibre of silk or cotton. A far greater exercise of force is necessary for the former class of engine. Without the steam-hammer, the lathe,^a and the drill,^a such machines as the printing press, the powerloom, and the carding-engine could not have been constructed” * [pp. 221-22].

The first machinery depended on hand labour, on *manufacture*, for its construction. Once the machine had been invented, and, of special *importance here*, once a form of POWER completely at man’s disposal and applicable in any amount, such as STEAM, had been discovered to set the machine in motion, the production of machinery by machinery became possible. On the other hand, a large number of working machines invented later on, such as those just mentioned, and also PHILOSOPHICAL INSTRUMENTS,²¹³ require the existence of machines for their production. The first steam engines were *built in the mode of manufacture and handicrafts*. Similarly the first machines which were driven by the steam engine, such as spinning and weaving machines, mills, etc. The improvement of quality by machinery—its impact on use value—does not concern us here as such. But its impact has a double importance for the production process: 1) Where a raw material or semi-manufacture is brought under the sway of machinery, the ease with which the process advances to its next phase depends in part upon, is conditioned by, THE DEGREE OF PERFECTION of the material it has to work with. Its homogeneity, etc., is a condition for its further treatment by machinery. 2) Still more important is the

^a Marx adds the German term in brackets.—Ed.

uniformity, the mathematical exactness of form, etc., required when the elements of MACHINES and PHILOSOPHICAL INSTRUMENTS are to be produced. The degree of success here depends absolutely on this *quality*, and the extent to which the unreliability of handwork is removed from these things, so they are subjected to the regularity of the WORKING MACHINE, which has been precisely calculated in advance.

Working machine as distinct from the other parts of the machinery, hence from the PRIME MOTOR and the directing, or transmission, mechanism.

*"In all machines there are certain parts which *actually do the work for which the machine is constructed*, the *mechanism* serving only to *produce the proper relative motion of those parts to the material upon which they operate*. These working parts are the *tools with which the machine works*" * [p. 222].

Here we have the correct view. The TOOLS with which the human being worked reappear in the machinery, but now they are the TOOLS with which the machine works. Its mechanism brings about the movements of the TOOLS (previously performed by the human being) required to treat the material in the manner desired or to accomplish the purpose desired. [XIX-1186] It is no longer the human being, but a mechanism made by human beings, which HANDLES the TOOLS. And the human being supervises the action, corrects accidental ERRORS, etc.

Firstly, what appears from the outset in a machine is that it is a REUNION of these TOOLS, which are set in WORKING MOTION at once by the same mechanism, whereas a human being could only set in motion one such TOOL AT ONCE, or given unusual virtuosity at most 2, since he has only 2 hands and 2 feet. A machine works simultaneously with a large number of TOOLS. Thus many 100 spindles on a bobbin-frame, many 100 combs on a carding engine, over 1,000 needles on a stocking-frame, many sawblades on a sawing machine, hundreds of knives on a chopping machine, are set in motion at the same time, etc. Similarly (2) the number of SHUTTLES on the mechanical loom. This is the first REUNION OF INSTRUMENTS in the machine. It must, apart from this, be from the outset a REUNION of this WORKING MACHINERY with the mechanism which sets it in motion and with the PRIME MOTOR, which MOVES the MECHANISM. *Second REUNION*: arises from the fact that the different *machines* through which the raw material has to pass in the succession of processes are connected with each other, and are driven by the same motive power. There is thus CONTINUITY of the production process and *system*, i.e. a combination of the processes carried out by different machines in the different phases. *Third REUNION*. A number of

WORKING MACHINES of this kind are driven by the same motive power, with the corresponding PREPARATORY MACHINES for the earlier phases, united in a workshop. The principle of simple cooperation is applied to the machines and the workers employed on them. This is one of the most important aspects of developed machine production. *Firstly because of* the saving on the PRIME MOTOR and the economical distribution of the MOVING POWER. *Secondly* the smaller the scale of production, the more costly the PREPARATORY PROCESSES, partly because of the cost of the machinery itself; partly because the number of workers required for the work falls in proportion to the increase in the size of the operation, and the *intermediary work*, e.g. the transfer of the product from one process to another, is reduced, where it is done by workers, in inverse proportion to the scale on which the work is done. *Thirdly*. Just as in simple cooperation, the costs of the collectively used conditions of labour such as buildings, fuel, heating, OVERLOOKERS, etc., fall in proportion as the scale of production rises. There is, further, in addition the principle which arises out of the division of labour that [the tasks of the] MANAGER, the mechanic, the ENGINEER, the stoker, etc., can in part be handed over to workers who are exclusively concerned with them, in part are just as necessary on a large scale as they are on a small scale. Finally (leaving aside the utilisation of waste products) the simultaneous exploitation of many workers is only possible in this way, and the amount of surplus value realised by the individual capital depends on this, if its rate is given.

Secondly. Or instead of the reunion of many TOOLS in a machine, many TOOLS appear to be combined together from the point of view of their power, their dimensions and their sphere of action, in the way that many hammers appear to be combined in a STEAM-HAMMER. Here, where the TOOL of machinery is distinguished from the TOOL of the worker by its dimensions, a mechanical driving force is required from the outset. This kind of machinery can therefore never exist in the handicraft manner, i.e. in such a way that it can be driven by a single worker or his family, or a pair of journeymen with a master craftsman.

With the above, there is now an answer to the question of what distinguishes a machine from a tool. Once the tool is itself driven by a mechanism, once the tool of the worker, his implement, of which the efficiency depends on his own skill, and which needs his labour as an intermediary in the WORKING PROCESS, is converted into the tool of a mechanism, the machine has replaced the tool. In this case the mechanism must already have attained a degree of development which makes it capable of receiving its motive power

from a mechanically driven PRIME MOTOR, instead of receiving it as before from a human being or an animal, in short from PRIME MOTORS which possess voluntary movement.

[XIX-1187] As long as the latter is still the case, the machine only appears as a machine-like handicraft tool. In proportion as its dimensions grow and it develops into a system of production, mechanical must replace human motive power.

In its first form, however, the machine (which at the same time throws out of work a mass of workers employed in handicrafts and manufacture, since it allows one person to perform what would otherwise be performed by 10 or 20) annihilates the system of manufacture and simple cooperation based on the division of labour, and appears to replace it once again with a system of handicrafts.

Simple cooperation is doubly annihilated, in that one weaver now does what was done by many weavers assembled in a manufactory; and on a larger scale e.g. with mowing and threshing machines, building machines for raising heavy weights, machines for breaking stones, etc. But secondly, in that everywhere that power needed to be produced by simple cooperation, the mechanical motive power replaces this.

But this does not rule out 1) that machine factories may be built straight away as such, without passing through the previous stages; 2) that in work where the EXERCISE OF FORCE predominates from the outset the motive power must also be mechanical from the outset, i.e. with no relation to human or animal muscle power.

If the machine proceeds from *simple handicrafts*, e.g. if machine weaving replaces hand weaving, a machine must perform simultaneously the various operations performed previously by the handicraftsman. This does not appear as a system of processes accomplished by the REUNION of different machines. At most, that is, in weaving, the preparation of the WARP as a preparatory process. This is now also mechanical. On the other hand, in spinning, e.g., preparatory processes which are simple in hand spinning are separated into a series of processes.

Or the machine proceeds from a system of manufacture based on the division of labour, and then either a complex single machine replaces the separate operations, as with the production of envelopes, STEEL PENS, etc., or the previously separated operations are replaced by a series of processes carried out by a system of machinery, as with the spinning of wool, etc., and also, particularly as an example, papermaking.

The explanation that a MACHINE IS A COMPLICATED TOOL and A TOOL A

SIMPLE MACHINE explains nothing. The explanation that you have a machine where the tool is not driven by human power, and a tool where man is the PRIME MOVER, would make a dog-cart or a plough drawn by oxen a machine, but a mechanical stocking loom or a bobbinet machine, etc., a tool. It contains no element from which the social CHANGE can be explained. It runs counter to the history of the development of machinery in general, and to the history which the first HANDICRAFTS and MANUFACTURES are still passing through daily in their transition to the machine-based factory. It depends altogether on the state of affairs in which the essential nature of machinery was not yet so far developed that the APPLICATION of the PRIME MOVER was a matter of free choice, according to the level at which the machine is to operate.

The system of mechanical production can go further, and unite branches of production previously independent of each other, as e.g. in the FACTORIES where spinning and weaving are united, and form a continuous system.

In the year 1861 (see *Parliamentary Return: Factories*, 11 February 1862^a) there were altogether 2,715 FACTORIES in England and Wales (not including Scotland and Ireland), [XIX-1188] of which 671 were EMPLOYED IN SPINNING AND WEAVING. There were in these factories 13,274,346 spindles, 235,268 POWERLOOMS and 215,577 persons employed [*Factories...*, p. 3]. (Included among these persons are *all managers, clerks, overlookers, engineers, mechanics, and all other employed in the factory, except the owners or occupiers constituting the firm* [p. 1].)

If one reflects that the total number of spindles used at the same time in *all* the English COTTON FACTORIES=28,352,125, the total number of POWERLOOMS=368,125, and the total number of persons employed=407,598, one sees what an overwhelming position is occupied by spinning and weaving combined. Those 671 factories employed 143,947 STEAM HORSEPOWER, and 3,823 WATER HORSEPOWER. The number of POWERLOOM WEAVERS came to 99,504.

The number of boys under 13 years old was 11,289, the number of girls under 13 years old was 9,224, making *children under 13* together=20,513. Women and girls over 13=115,117. Thus children (FEMALE AND MALE UNDER 13) and women=135,630. Hence the number of men employed (all the clerks employed in the offices, those employed in the WAREHOUSE, etc., ENGINEERS, MECHANICS)=79,947. The number of MALES between 13 and 18=19,699. If one deducts

^a *Factories. Return to an Address of the Honourable the House of Commons, dated 24 April 1861. Ordered, by the House of Commons, to be Printed, 11 February 1862.—Ed.*

this group, which still includes a large proportion of children, the number of MALES over 18 years old comes to 60,248, of which at least 4,000 are not employed in FACTORY labour. There thus remain 56,248 employed MALES over 18 years old.

To the total number of English COTTON FACTORIES, 2,715, with 28,352,125 SPINDLES, 368,125 POWERLOOMS (149,539 POWERLOOM WEAVERS), 263,136 STEAM [horse]power and 9,825 WATER [horse]POWER, there correspond 407,598 persons. Within this number there are 39,156 children under 13 years old. NUMBER OF FEMALES ABOVE 13 YEARS: 216,512. Thus children under 13, girls over 13 and women together come to 255,668 people. Men between 13 and 18: 38,210. Together 293,878. There remain 113,720 men over 18, from which figure at least 15,000 must be deducted for those not employed in the factory itself. There remain ABOUT 98,000 [p. 3].

FACTORIES occupied in SPINNING alone number 1,079. *Number of spindles*: 15,077,299. *POWER*: 99,976 STEAM and 4,883 WATER. Number of persons employed: 115,192 [ibid.].

Factories occupied in *weaving* alone number 722. *POWERLOOMS* 131,554. *POWER*: 15,240 STEAM and 406 WATER; number of persons employed 63,160.

(The total number of 2,715 FACTORIES includes 243 factories which are NOT INCLUDED IN EITHER OF THE ABOVE DESCRIPTIONS [pp. 2-3].)

We will now look at the WOOLLEN, etc., FACTORIES in England and Wales. (Same *Return* for 1861 [pp. 4-5].) [See Table 1 on p. 429.]

TOTAL OF WOOLLEN FACTORIES (including, in addition to the above, 129 FACTORIES EMPLOYED IN FINISHING AND DRESSING, and 120 NONDESCRIPT factories): 1,456, with 1,846,850 SPINDLES, 20,344 POWERLOOMS, 2,066 GIGS, 25,233 STEAM, 6,675 WATER, and 76,309 persons employed.

If we analyse this number, 5,931 should be deducted, being children under 13 years old (3,333 MALES and 2,598 FEMALES). Moreover, 29,613 FEMALES over 13 (among whom there are in turn many children) [should also be deducted]. With the above, this makes 35,544. MALES BETWEEN 13 and 18, again including many children, account for a further 9,811. There remain 30,954 MALES ABOVE 18. Of whom AT LEAST 7,000 need to be deducted. There remain 23,954 MALES [p. 5]. [See Table 2 on p. 429.]

But it will now be better to make up a list for all kinds of production alongside each other, in order to display the relation of the combined factories to the others. From this one can see the concentration which takes place as a result of this combination. To ease comprehension it should be remarked that the excess of the total number of factories over the number indicated under specific

[Continued on p. 434]

[Table 1 to p. 426]

WOOLLEN FACTORIES	Number of FACTORIES	SPINDLES	POWER- LOOMS	GIGS	STEAM	WATER	NUMBER OF CHILDREN UNDER 13 YEARS		NUMBER OF MALES BETWEEN 13 and 18	FEMALES ABOVE 13	MALES 18	TOTAL
							MALES	FEMALES				
<i>FACTORIES EMPLOYED IN SPINNING AND WEAVING</i>	440	1,086,352	19,277	807	14,313	2,759	1,913	1,815	4,799	21,354	16,969	46,850
<i>FACTORIES EMPLOYED IN SPINNING</i>	729	760,498		258	7,690	3,307	1,184	705	3,014	5,465	8,531	18,899
<i>FACTORIES EMPLOYED IN WEAVING</i>	34		1,067	26	268	26	36	37	98	829	409	1,409

[Table 2 to p. 426]

[XIX-1189] WORSTED FACTORIES IN ENGLAND (1861) [p. 6].

a) FACTORIES EMPLOYED IN SPINNING AND WEAVING

NUMBER OF FACTORIES	SPINDLES	POWER- LOOMS	NUMBER OF WEAVERS	AMOUNT OF STEAM	MOVING POWER WATER	CHILDREN UNDER 13		MALES BETWEEN 13 AND 18	FEMALES ABOVE 13	MALES ABOVE 18	MALES	FEMALES	TOTAL
						MALES	FEMALES						MALES and FEMALES
125	633,390	25,814	18,106	13,368	781	3,858	3,955	3,793	24,642	10,806	18,457	28,597	47,054

[Tables to p. 434]

I) COTTON ^a	Number of factories	Number of spindles	POWER- LOOMS	GIGS	POWER- LOOM WEAVERS	POWER		CHILDREN UNDER 13		MALES BETWEEN 13 AND 18	FEMALES ABOVE 13	MALES ABOVE 18	TOTAL NUMBERS EMPLOYED		
						STEAM	WATER	MALES	FEMALES				MALES	FEMALES	FEMALES
a) SPINNING AND WEAVING	671	13,274,346	235,268		99,504	143,947	3,823	11,289	9,224	19,699	115,117	60,248	91,236	124,341	215,577
b) SPINNING ONLY	1,079	15,077,299				99,976	4,883	8,661	6,212	13,003	54,851	32,465	54,129	61,063	115,192
c) WEAVING ONLY	722		131,554		49,182	15,240	406	1,623	1,564	4,648	36,794	18,531	24,802	38,358	63,160
d) Total	2,715	28,352,125	368,125		149,539	263,136	9,825	21,774	17,382	38,210	216,512	113,720	173,704	233,894	407,598
II) WOOLLEN ^b															
a) SPINNING AND WEAVING	440	1,086,352	19,277	807	15,009	14,313	2,759	1,913	1,815	4,799	21,354	16,969	23,681	23,169	46,850
b) SPINNING ONLY	729	760,498		258		7,690	3,307	1,184	705	3,014	5,465	8,531	12,729	6,170	18,899
c) WEAVING ONLY	34		1,067	26	826	268	26	36	37	98	829	409	543	866	1,409
d) Total	1,456	1,846,850	20,344	2,066	15,835	25,233	6,675	3,333	2,598	9,811	29,613	30,954	44,098	32,211	76,309

^a *Factories. Return to an Address of the Honourable the House of Commons, dated 24 April 1861, pp. 2-3; cf. this volume, pp. 425-26.—Ed.*

^b *Cf. this volume, pp. 426, 429.—Ed.*

[Tables to p. 434]

III) *WORSTED*^a

a)	<i>SPINNING AND WEAVING</i>	125	633,390	25,814	18,106	13,368	781	3,858	3,955	3,793	24,642	10,806	18,457	28,597	47,054
b)	<i>SPINNING ONLY</i>	206	612,136			8,958	786	2,344	2,932	1,946	11,437	3,201	7,491	14,369	21,860
c)	<i>WEAVING ONLY</i>	157		17,154	10,630	2,421	84	66	19	618	9,238	3,141	3,825	9,257	13,082
d)	<i>Total</i>	<i>SPINDLES</i>	<i>POWER- LOOMS</i>	<i>WEAVERS</i>	<i>STEAM</i>	<i>WATER</i>	<i>CHILDREN MALES</i>	<i>UNDER 13 FEMALES</i>	<i>MALES between 13 and 18</i>	<i>FEMALES ABOVE 13</i>	<i>MALES ABOVE 18</i>	<i>TOTAL MALES</i>	<i>FEMALES</i>	<i>MALES AND FEMALES</i>	
		512	1,245,526	42,968	28,736	25,426	1,667	6,268	6,906	6,424	45,674	17,700	30,392	52,580	82,972

[XIX-1190] IV) *FLAX*^b

	<i>FACTORIES</i>	<i>Number of spindles</i>	<i>POWER- LOOMS</i>	<i>WEAVERS</i>	<i>MOVING STEAM</i>	<i>POWER WATER</i>	<i>CHILDREN MALES</i>	<i>UNDER 13 FEMALES</i>	<i>MALES BETWEEN 13 AND 18</i>	<i>FEMALES ABOVE 13</i>	<i>MALES ABOVE 18</i>	<i>MALES</i>	<i>FEMALES</i>	<i>TOTAL MALES and FEMALES</i>	
a)	<i>SPINNING AND WEAVING</i>	14	42,080	766	466	1,707	100	299	441	294	2,456	701	1,294	2,897	4,191
b)	<i>SPINNING</i>	89	302,228			6,300	839	582	649	1,003	9,618	2,353	3,938	10,267	14,205
c)	<i>WEAVING</i>	27		1,394	1,062	441	37	5	2	63	1,140	544	612	1,142	1,754
d)	<i>TOTAL</i>	136	344,308	2,160	1,528	8,505	976	886	1,108	1,383	13,277	3,651	5,920	14,385	20,305

^a *Factories. Return to an Address...*, p. 6; cf. this volume, p. 429.— *Ed.*^b *Ibid.*, p. 7.— *Ed.*

V)	HEMP FACTORIES ^a												
a)	SPINNING AND WEAVING												
	1	14	1	1	6		2	3	1	3	3	6	
b)	SPINNING												
	2	250			33		31	12	13	44	12	56	
c)	TOTAL												
	3	264	1	1	39		33	15	14	47	15	62	
VI)	JUTE FACTORIES ^a												
a)	SPINNING AND WEAVING												
		CARET.	Ditto			WEAVING							
b)	SPINNING												
	3	620			50		5	73	13	18	73	91	
c)	TOTAL												
	4	620			62		6	84	17	23	84	107 ²¹⁴	

[XIX-1191] VII) SILK FACTORIES IN ENGLAND^b

a)	FACTORIES	SPINDLES	POWER- LOOMS	WEAVERS	MOVING POWER		CHILDREN		CHILDREN BETWEEN 11 and 13 MALES FEMALE	MALES between 13 and 18	FEMALES OVER 13	MALES OVER 18	MALES	TOTAL		
					STEAM	WATER	UNDER 11 YEARS MALES FEMALE	MALES						FEMALES	FEMALES	MALES AND FEMALES
	49	254,426	2,965	2,201	903	109	71	171	193	589	444	6,224	1,859	2,572	6,984	9,556
b)	SPINNING															
	244	1,051,484			3,760	688	589	832	1,146	2,644	2,043	16,079	4,167	7,945	19,555	27,500

^a *Factories. Return to an Address...*, p. 8.—*Ed.*^b *Ibid.*, pp. 9-10.—*Ed.*

[Tables to p. 434]

c)	WEAVING 422		7,670	5,007	996	28	20	38			584	7,425	3,690	4,294	7,463	11,757
d)	TOTAL 761	1,305,910	10,635	7,208	5,916	834	702	1,130	1,418	3,543	3,185	31,217	9,996	15,301	35,890	51,191

[XIX-1190] VIII) JUTE FACTORIES IN SCOTLAND^a

a)	SPINNING AND WEAVING 12	16,680	497	445	981	40	[Children under 13 Males Females]		24	54	345	2,248	957	1,326	2,302	3,628
b)	SPINNING 13	13,858			736	20					267	1,236	227	494	1,236	1,730
c)	WEAVING 2		57	39	20						1	50	9	10	50	60
	TOTAL 27	30,538	554	484	1,737	60			24	54	613	3,534	1,193	1,830	3,588	5,418

[XIX-1190]

IX) FLAX FACTORIES IN IRELAND^b

a)	SPINNING AND WEAVING 19	217,064	2,491	1,868	4,471	383			34	186	1,488	9,423	2,187	3,709	9,609	13,318
b)	SPINNING 60	375,917			5,751	1,796			192	256	1,997	11,627	3,303	5,492	11,883	17,375
c)	WEAVING 15		2,175	1,446	460	141					208	1,825	384	592	1,825	2,417
d)	TOTAL 100	592,981	4,666	3,314	10,710	2,384			226	442	3,761	23,130	5,966	9,953	23,572	33,525

^a *Ibid.*, p. 12.—*Ed.*

^b *Ibid.*, p. 19.—*Ed.*

[Continued from p. 426]

headings arises from the inclusion in the total of FINISHING and DRESSING FACTORIES or factories engaged in other special tasks which do not fall under one of the general categories. The list only covers England and Wales (1861). HOSIERY FACTORIES and LACE MANUFACTURES are not included here. [See tables on pp. 430-33.]

First of all, then:

1) COTTON. The number of combined factories is 671 here. The number of spinning alone is 1,079, of weaving alone is 722, and $1,079+722=1,801$, hence the proportion of the first type is almost $\frac{1}{3}$ already. The combined factories alone employ 215,577 persons; the two other types together employ $115,192+63,160=178,352$. Hence, although they amount to less than $\frac{1}{3}$ of the others, the combined factories employ 37,225 more persons.

Furthermore, there are ON THE AVERAGE for 1 combined factory 19,782 spindles (and $\frac{624}{671}$); 350 and $\frac{418}{671}$ POWERLOOMS; and 220 (and $\frac{150}{671}$) POWER. For 1 WEAVER there are 2 and $\frac{36,260}{99,504}$ POWERLOOMS. The number of spinners is not indicated; they are instead lumped together with persons employed in the OFFICES, WAREHOUSES and otherwise. But we shall see this when dealing with the children.

[XIX-1192]²¹⁵ For 1 combined factory there are: spindles, 19,782; POWERLOOMS, 350; POWER, 220; proportion of weavers to POWERLOOMS, 1 to $\frac{2^{36,260}}{99,504}$, WEAVERS per factory over 148. Number of persons per factory: over 321.

The AVERAGE for 1 SPINNING factory, in contrast, is: number of spindles, 13,973; POWER, 97; number of persons per factory, 106; proportion of persons to spindles, 1 person to ABOUT 130 spindles.

AVERAGE for 1 WEAVING factory: POWERLOOMS, 182; POWER, 22; proportion of POWER to persons, [$\frac{4^{576}}{15,646}$].

According to the proportion which exists in the SPINNING only COTTON MILL, group I a) (SPINNING AND WEAVING) would have to employ 102,110 persons for its 13,274,346 spindles. For weaving, according to the proportion in the WEAVING only CONCERNS I c), [group I a)] would have to employ 88,115 persons for its 235,268 POWERLOOMS. Thus somewhat more than 190,225 persons altogether. But it employs 215,577.

In the case of I c) there is 1 weaver for 2.67 POWERLOOMS. In the case of I a) 1 weaver for 2.36. Thus fewer weavers are needed in case I c), the weaving only factories, than in I a) (TO A SMALL FRACTION).

In I b) the following relationship holds between the number of spindles and the POWER: 143.7 SPINDLES to 1 POWER. In I c) there are ... 8.4 POWERLOOMS to 1 POWER.

According to the proportion found in I b), I a) ought to employ a POWER of 92,375.4 for its SPINDLES. And according to the proportion in I c) it ought to employ 28,008 for its LOOMS. But it employs much more power than this.

In example I there is no saving in workers or POWER to be seen, nor is there any relative increase in the number of SPINDLES and LOOMS. Admittedly, to make a complete comparison one ought in all 3 CASES to have the *product* of I.

[XIX-1193] In the case of I b), the total of 115,192 persons includes 14,873 children under 13, 13,003 MALES BETWEEN 13 and 18, and 54,851 FEMALES ABOVE 13. There appear to be somewhat more children and women employed altogether in the case of the combined factories I a). We now want to turn to the other category, where there is perhaps SOMETHING ELSE to see. With I we only see that there is a growth in concentration; the AVERAGE combined factory sets in motion more POWER, more SPINDLES, more LOOMS and more PEOPLE than the non-combined factories I b) and I c).

Let us apply ourselves to table II) WOOLLEN FACTORIES.^a

Here the concentration is much more significant than under I, in COTTON, which is due to the fact that spinning and weaving mills are not so large as COTTON manufacturing ones.

The number of combined FACTORIES is 440, that of non-combined factories is 763. The proportion of combined to non-combined is 1:1.7, more than a half. II a) employs 26,542 more PEOPLE than II b) and II c), which employ together only 20,308: hence it employs more than twice the number. It employs 325,854 more SPINDLES, 18,210 more LOOMS, and 523 more GIGS; furthermore, it employs 5,781 more POWER.

There are for 1 factory (on the AVERAGE):

	SPINDLES	LOOMS	GIGS	POWER	PEOPLE
II a)	2,468.9	43.8	1.8	38.8	106.4
II b)	1,043.2		0.3	15	25.9
II c)		31.3	0.7	8.6	41.4

The ratio between PEOPLE and POWER cannot of course be seen from these figures, since the AVERAGE does not apply to any particular factory.

According to the proportions in II b), II a) would have to employ POWER of 35.5 for spindles. (We are leaving the GIGS out of

^a Here Marx repeats the corresponding table, given on p. 430 of this volume. He omits the line containing the totals.—Ed.

consideration in all 3 CASES.) It also needs a further 12 for its LOOMS, hence 47.5 altogether. But it only employs a POWER of 38.8, 8.6 less. There is therefore a saving, a more economical or more intensive employment of POWER. In II b) there is 1 person for every 40.2 spindles, or for 760,498 spindles+258 GIGS=760,756 there are 18,899 PEOPLE. Thus 40.2. In II c) there are PEOPLE TO THE AMOUNT OF 1,409 for 1,067 LOOMS and 26 GIGS=1,093. II a), on the other hand, employs 20,084 POWERLOOMS and GIGS. This is 18.3 times more. If the proportion in II b) were followed, II a) would have to employ 27,023 PEOPLE for its SPINDLES; and if the proportion of II c) were followed for its LOOMS and GIGS it would have to employ somewhat over 25,784; taken together this is 52,807. But it only employs 46,850, thus 5,957 less. There is therefore a saving in workers relative to [XIX-1194] the MASS OF WORKING MACHINERY PUT IN MOTION.

Out of its total of 18,899 PEOPLE, II b) employs 1,184 MALES and 705 [females] under 13 years old=1,889, hence $\frac{1}{10}$ plus a fraction too small to be worth mentioning. 3,014, or somewhat under $\frac{1}{6}$, or more precisely the 6.2th part, or $\frac{1}{62/10} = \frac{10}{62}$ of the total number of people employed are youths BETWEEN 13 and 18 years old. It employs 5,465 FEMALES of over 13, hence not quite $\frac{1}{3}$ or more precisely the 3.4th part = $\frac{1}{34/10} = \frac{10}{34} = \frac{5}{17}$. It employs 8,531 MALES of over 18, hence less than $\frac{1}{2}$, or more precisely 2.2 or $\frac{1}{22/10} = \frac{10}{22} = \frac{5}{11}$. The total number of women it employs is 6,170, hence less than $\frac{1}{3}$, or more precisely the 3.06th part. And it employs 12,729 men; somewhat more than $\frac{2}{3}$, more precisely the 1.4th part or $\frac{1}{14/10} = \frac{10}{14} = \frac{5}{7}$. So we now have the proportion for II b).

II b) The proportional share of the different categories in the WHOLE PEOPLE EMPLOYED:

Children under 13	Youths between 13 and 18	FEMALES over 13	MALES over 18	TOTAL OF FEMALES	TOTAL OF MALES
ABOUT $\frac{1}{10}$	6.2 or $\frac{5}{31}$ somewhat under $\frac{1}{6}$	3.4 or $\frac{5}{17}$ not quite $\frac{1}{3}$	2.2= $\frac{5}{11}$ under $\frac{1}{2}$	3.06 under $\frac{1}{3}$	1.4= $\frac{5}{7}$ over $\frac{2}{3}$

If we now pass to II c), we find 826 weavers to 1,067 LOOMS, or 1 weaver to 1.2 LOOMS. Further, 73 children under 13 out of

1,409=the 19.3th part, or less than $\frac{1}{19}$. Further, 98 youths between 13 and 18, hence the 14.3th part of the whole, less than $\frac{1}{14}$. Further, 829 FEMALES over 13. Hence 1.7 or $\frac{10}{17}$, or over $\frac{1}{2}$. 409 men over 18 or the 3.4th part= $\frac{5}{17}$, less than $\frac{1}{3}$. Women altogether account for 866, or the 1.7th^a part, or $\frac{10}{17}$, less than $\frac{2}{3}$. Finally men=543 or not quite $2.5=\frac{10}{25}=\frac{2}{5}$.

The proportion for II c):

Number of weavers to POWER-LOOMS	Children under 13	Youths of 13-18	FEMALES over 13	Men over 18	TOTAL OF FEMALES	TOTAL OF MALES
1 to 1.2	19.3 under $\frac{1}{19}$	14.3 under $\frac{1}{14}$	1.7 or $\frac{10}{17}$ over $\frac{1}{2}$	3.4 or $\frac{5}{17}$ under $\frac{1}{3}$	1.7 under $\frac{2}{3}$	ABOUT 2.5 or $\frac{2}{5}$ but not quite.

If we now pass to II a) we find 15,009 weavers to 19,277 LOOMS. Hence 1 weaver to 1.2 POWERLOOMS. 3,728 children under 13. Divided into 46,850, this is 12.5, not quite $\frac{1}{12}$; $\frac{10}{125}=\frac{2}{25}$. 4,799 youths between 13 and 18=9.5,^b less than $\frac{1}{9}$ or $\frac{10}{95}$. 21,354 FEMALES ABOVE 13 makes 2.1, less than $\frac{1}{2}$ or $\frac{10}{21}$. 16,969 MALES over 18. Makes less than 2.8. MALES altogether: 1.9. [XIX-1195] FEMALES: the same.

Hence the proportion for II a):

Weavers per LOOM	Children under 13	Youths of 13-18	Women over 13	MALES over 18	MALES and FEMALES
1 to 1.2	under $\frac{1}{12}$	under $\frac{1}{9}$	under $\frac{1}{2}$ or $\frac{10}{21}$	less than 2.8 or $\frac{10}{28}$	are roughly evenly divided. Somewhat more MALES.

The number of children under 13 and youths between 13 and 18 has fallen in comparison with II b). This is to be explained from the introduction of machinery which makes the children in part superfluous, as we can see from the *FACTORY INSPECTORS' REPORTS*; an arrangement which originates from the fact that the MANUFACTURERS found it vexing to have TO EMPLOY TWO SETS OF SO-CALLED HALF-TIMES. But the number of FEMALES over 13 years old has grown almost from $\frac{1}{3}$ to $\frac{1}{2}$, and thus the overall ratio of women to men has also grown, in comparison with II b). If, however, we make a comparison with II c), it is difficult to determine the ratio, since in

^a The exact figure is 1.62. Marx put 1.6, then changed it to 1.7, and used the latter in the subsequent calculations.—Ed.

^b The exact figure is 9.7. Marx, however, used 9.5 in the subsequent calculations.—Ed.

weaving the female element predominates still more over the male here.

Let us now pass to III) *WORSTED FACTORIES*.^a

The number of combined factories is 125, that of the others is 363, hence less than $\frac{1}{3}$; but the number of PEOPLE employed in the combined factories is larger by 12,112: 21,254 more SPINDLES are employed, 8,660 more POWERLOOMS, and 1,900 more POWER.

There are for 1 AVERAGE factory:

	SPINDLES	LOOMS	POWER	PEOPLE
III a)	5,067 ³ / ₂₅	206.5	113 ²⁴ / ₁₂₅	376 ⁵⁴ / ₁₂₅
III b)	2,971 ⁵⁵ / ₁₀₃		47 ³¹ / ₁₀₃	106 ¹² / ₁₀₃
III c)		109 ⁴¹ / ₁₅₇	15 ¹⁵⁰ / ₁₅₇	83 ⁵¹ / ₁₅₇

We shall leave aside the fractions, even though this makes the calculation merely approximate.

III b): 28(³/₁₀₆) spindles to 1 worker. III c): 1²⁶/₈₃ POWERLOOMS to 1 worker.

There appears to be NO SAVING OF LABOUR in this case.

[XIX-1196] VII) *SILK FACTORIES*.^b

Large-scale industrial production of silk is relatively new in England (compared with wool and cotton, similarly with flax in Scotland, Ireland, etc.), the number of factories in this branch is therefore relatively large, and their size in contrast is RELATIVELY SMALL. Hence here the combined factories also constitute a less significant proportion than in the other cases.^c

The number of combined factories is 49, that of the others is 666; hence the former are ABOUT $\frac{2}{27}$ of the total number; but the number of spindles employed by these $\frac{2}{27}$ is almost $\frac{1}{4}$ of those employed by the 244 spinning factories, and the number of LOOMS EMPLOYED by them is over $\frac{1}{3}$ of those employed by the 422 weaving factories, etc. The more precise ratio emerges from the following calculation:

There are for 1 AVERAGE factory:

	SPINDLES	LOOMS	POWER	PEOPLE
VII a)	5,192 ¹⁸ / ₄₉	60 ²⁵ / ₄₉	20 ³² / ₄₉	195 ¹ / ₄₉
VII b)	4,309 ²² / ₆₁		18 ¹⁴ / ₆₁	112 ⁴³ / ₆₁
VII c)		18 ³⁷ / ₂₁₁	2 ⁹⁰ / ₂₁₁	27 ³⁶³ / ₄₂₂

^a Here Marx repeats the corresponding table, given on p. 431 of this volume. He omits the line containing the totals.— *Ed.*

^b See this volume, pp. 432-33.— *Ed.*

^c Here Marx repeats Table VII) *Silk Factories*, given on pp. 432-33 of this volume. He omits the line containing the totals.— *Ed.*

The ratio between POWER, PEOPLE, and quantity of machinery, as it appears in these averages, is absolutely imaginary; they are only intended to demonstrate concentration. On the other hand, however, we once again see here the undeniable FACT //and here it is still more significant than before// that there is ECONOMY OF POWER in the combined factories, in certain BRANCHES.

We now give some further examples of flax and jute factories in Ireland and Scotland.^a [See table on p. 440.]

24 combined; but 125 others. Hence less than $\frac{1}{5}$ of the latter, and ABOUT $\frac{1}{6}$ of the total number.

The more precise ratios emerge from the following table:

ON AN AVERAGE, each factory has:

	SPINDLES	LOOMS	POWER	PEOPLE
X a)	3,413 $\frac{3}{4}$	91 $\frac{5}{8}$	202 $\frac{7}{24}$	452 $\frac{11}{24}$
X b)	2,350 $\frac{55}{84}$		78 $\frac{27}{42}$	178 $\frac{17}{84}$
X c)		140 $\frac{27}{41}$	47 $\frac{39}{41}$	182 $\frac{28}{41}$

We come now to VIII) *JUTE FACTORIES. SCOTLAND.*

This is an entirely new kind of factory. First emerged after the Russo-British War.²¹⁶ Not significant in England.^b

Total number of FACTORIES 27. Combined factories 12, almost half. Employ more SPINDLES and LOOMS than the rest put together.

ON AN AVERAGE, each factory has:

	SPINDLES	LOOMS	POWER	PEOPLE
a)	1,390	41 $\frac{5}{12}$	85 $\frac{1}{12}$	302 $\frac{1}{3}$
b)	1,066		58 $\frac{2}{13}$	133 $\frac{1}{13}$
c)		28 $\frac{1}{2}$	10	30

[XIX-1198] Finally: IX) *FLAX FACTORIES. IRELAND.*^b

Altogether 94 factories, of which 19 are COMBINED.

There are for 1 AVERAGE factory:

	SPINDLES	LOOMS	POWER	PEOPLE
a)	11,424 $\frac{8}{19}$	131 $\frac{2}{19}$	255 $\frac{9}{19}$	700 $\frac{18}{19}$
b)	6,265 $\frac{17}{60}$		125 $\frac{47}{60}$	289 $\frac{35}{60}$
c)		145	40 $\frac{1}{15}$	161 $\frac{2}{15}$

Manufacture emerges from handicrafts by a double route:

1) *Simple cooperation.* The concentration in a single room of many handicraftsmen all doing the same thing, and many

^a See *Factories. Return to an Address...*—Ed.

^b Here Marx repeats the corresponding table, given on p. 433 of this volume. He omits the line containing the totals.—Ed.

[Table to p. 439]

[XIX-1197] X) *FLAX FACTORIES. SCOTLAND* (1861)

FACTORIES	SPINDLES	POWER- LOOMS	POWER- LOOM WEAV- ERS	AMOUNT OF POWER		CHILDREN UNDER 13		MALES between 13 and 18	FEMALES ABOVE 13	MALES ABOVE 18	Males	TOTAL OF PEOPLE	
				STEAM	WATER	MALES	FEMALES					FEMALES	MALES and FEMALES
a) <i>SPINNING and WEAVING</i> 24	81,930	2,199	2,061	4,679	176	33	111	1,017	7,879	1,855	2,905	7,990	10,859
b) <i>SPINNING</i> 84	197,455			5,830	776	271	454	1,552	10,318	2,374	4,197	10,772	14,969
c) <i>WEAVING</i> 41		5,767	3,786	1,936	30		8	241	5,894	1,347	1,588	5,902	7,490

handicraft tools. This is the characteristic feature of the old weaving manufacture and the further preparation of cloth. Almost no division of labour at all here. At most for certain auxiliary operations, some of them preparatory, some FINISHING. The main economy here is: the communal use of the general conditions of labour, such as the building, heating, etc. The overall supervision of the manufacturer, hence the element which is peculiar to capitalist production in general.

Ure says in *Philosophie des manufactures*, Vol. II (pp. 83-84)^a:

"It deserves to be remarked, moreover, that handworking is more or less discontinuous from the caprice of the operative, and therefore *never gives an average weekly or annual product* at all comparable to that of a like machine equably driven by power. For this reason *hand-weavers* very seldom turn off in a week much more than one-half of what their loom could produce if kept continuously in action for 12 or 14 hours a day, at the rate which the weaver in his working paroxysms impels it"^b [A. Ure, *The Philosophy of Manufactures...*, London, 1835, p. 333].

The mechanical workshop of course enjoys this advantage as much over the system of manufacture as it does over the system of handicrafts. In the mechanical workshop the motion and speed of the machine (PRIME MOTOR) rules over human labour, in manufacture and handicrafts the reverse is the case. But it also applies to manufacture in contrast to handicrafts, to a lesser degree. In the latter, the handicraftsman is MORE OR LESS a human being who works; in the former he is a worker who as such and *qua* worker belongs to someone else, who solicits his aid merely in his quality as a machine for working.

[XIX-1199] 2) *The unification into a single factory of crafts divided into many independent branches.* The division is present in advance here, but every part of the work is carried on as an independent handicraft. The first thing that happens now is the annihilation of this isolation and independence. The difference is summed up in the fact that the particular form of labour no longer produces the product as a *particular commodity*, but merely as an integral part of a *commodity*. The separate product ceases to be a commodity as such. Once this unification of what was previously divided has taken place, SUBDIVISION develops further on the basis of this spontaneously evolved manufacture, which found its components already divided and SELF ACTING. To this combination of previously dispersed handicrafts, found in manufacture, there corresponds, within large-scale industry, the combination of factories, one of

^a Marx presumably quotes from the Paris edition of 1836.—*Ed.*

^b Marx quotes in French.—*Ed.*

which produces a semi-manufactured object, while the other uses it as its raw material. This is how it is with spinning and weaving. The prerequisite for this was that both branches had already been separately brought under the system of machine production.

Just as one should not think of sudden changes and sharply delineated periods in considering the succession of the different geological formations, so also in the case of the creation of the different economic formations of society. In the womb of the handicrafts, manufacture develops in its initial stages and even machinery is employed here and there, in individual spheres and for individual processes. The latter point is even truer for the actual period of manufacture, in which water and wind (or even human and animal power as mere *remplaçants*^a for water and wind) are employed for individual processes. But these are isolated cases and do not constitute the character of the ruling period, do not form its *pivot*, as Fourier says.^b The greatest inventions—gunpowder, the compass, printing—belong to the handicraft period, as also does the *clock*, one of the most remarkable automata; just as the most brilliant and revolutionary discoveries in astronomy, those of Copernicus and Kepler, belong to a time when all mechanical aids to observation were in their infancy. Similarly, the construction of the spinning machine and the steam engine rested on the handicrafts and manufacture which built them; they also rested on the science of mechanics, developed within this period, etc.

But the *general law* which is valid throughout, is that the material possibility of the later form is created in the earlier form; both the technological conditions and the economic structure of the workshop which corresponds to them. Machine labour is directly called into existence as a revolutionising element by the excess of needs over the possibility of satisfying them with the old means of production. But this excess of demand is itself given by the discoveries made still on the handicraft basis, by the colonial system founded under the domination of manufacture, and by the world market relatively firmly established by the colonial system.^c Once the revolution in the productive forces has been achieved—which is displayed in technological terms—a revolution also starts in the relations of production.

In so far as machines are employed in manufacture, they are,

^a Substitutes.—*Ed.*

^b Ch. Fourier, *Théorie de l'unité universelle*. In: *Œuvres complètes*, 10th ed., Vol. 3, Paris, 1841, pp. 140, 171.—*Ed.*

^c Cf. present edition, Vol. 28, pp. 335-36.—*Ed.*

correspondingly, produced either in the handicraft manner or on the basis of the division of labour applied in manufacture. As soon as machine production becomes dominant, its means of production—the machinery and tools employed by it—must themselves be produced by machines.

[XIX-1200] Except where animals can be employed purely mechanically, as with turning a mill, their employment is entirely dependent on their voluntary movement, and the direction of their will by the human will, a principle which has nothing in common with machine production. Moreover, they can only be employed as POWER in manufacture TO A VERY SMALL DEGREE, because their employment on a mass scale would take up tremendous space.

Mr. John C. Morton, AT THE SOCIETY OF ARTS (January 1860), read a paper on the FORCES USED IN AGRICULTURE,²¹⁷ dealing particularly with the displacement of HORSEPOWER by STEAMPOWER, and referring to the advantages of machinery, where animal (as also human) power is displaced by mechanical power, which is cheaper, and can act more uniformly over a greater period of time:

*“The forces referred to are ... steam power, horsepower, and manual labour... Purely mechanical power, supplied by the steam engine, may be more extensively used with every improvement of the land which tends to give uniformity to its condition... Force derived from horses, required where crooked hedge-rows, and other obstacles, prevent uniform action, and which constantly diminishes... In operations requiring more exercise of the will, but less actual power, the only competent force is that directed from moment to moment by the human mind—manual labour...”

Mr. Morton reduces these forces to

“horsepower” (as used in reference to steam engines), “i.e. the unity assumed as equal to pull or lift 33,000 lbs one foot per minute. By calculations given, the cost of steam power is estimated at 3d. per hour, while the cost of horse labour is 5½d. per horsepower per hour, and the steam power can be continued for much more lengthened periods than the horse labour. So that the force supplied by steam ‘horsepower’ at 3d. per hour, is nearly twice as great as that supplied by actual horsepower” * //since the horse can only be employed for 8 hours in this manner!// * “at 5½d. per hour. And where steam power can be used, the quality of the work performed by its aid” * //on account of its uniformity of motion// * “is superior to that done by horsepower. This applies to threshing,^a chaff-cutting,^b grinding and [the] like” * (similarly sowing, mowing) * “and seems equally applicable to steam-ploughing... By comparing the mere force of manual labour with the two other forces, it is found that to do the work of the steam engine 66 men would be required at 15s. per hour, and to do the work of the horsepower 32 men would be required at 8s. per hour. Competition of manual labour as a force, with steam or

^a Marx adds the German term in brackets.—Ed.

^b Marx gives in brackets the noun “chaff-cutter”, its German equivalent and the translation of the word “chaff”.—Ed.

horsepower, is therefore obviously out of the question... By steam power at least 3 out of every 7 horses on arable land may be dispensed with all the year, at a cost not exceeding the cost of these horses during the 3 or 4 months, when alone they are really needed on the land."*

One may see from the above *firstly* in a sphere where STEAM POWER, HORSEPOWER and MANUAL LABOUR COMPETE IN AGRICULTURE—THEIR RELATIVE VALUES, AS TO POWER AND ECONOMY; 2) that a plough is not a machine. Leaving aside the older form of the plough, where the farmer does more work behind the plough than the horse or the ox in front of the plough, the employment of STEAM presupposes UNIFORMITY of the SOIL, just as a locomotive presupposes rails instead of a road. These conditions are part and parcel of the [XIX-1201] employment of the machine, i.e. A WORKING MECHANISM ABLE TO RECEIVE ITS MOVING FORCE FROM A MERELY MECHANICAL FORCE.

The development of the mechanical workshop into a system is straight away made necessary in spinning by the fact that the raw material in ITS PREPARATORY PHASES MUST BE MECHANICALLY PREPARED, IN ORDER TO BE ABLE TO BE WORKED UPON BY MACHINERY. And these PREPARATORY PROCESSES for their part require relatively much more ASSISTANCE OF MANUAL LABOUR, IF CARRIED ON ON A SMALL SCALE, INSTEAD OF A LARGE ONE. The system therefore requires for its part once again the combination or cooperation OF A GREAT LOT OF WORKING MACHINES WHICH ARE FED BY THE PREPARATORY PROCESSES.

Nothing could be more incorrect than to conceive the medieval system of corporations and guilds, in which the division of labour amongst particular HANDICRAFTS forms at once the basis of a social and political organisation, as something "unfree". It was the form in which labour emancipated itself from landed property, and definitely the period in which labour stood at its highest point, socially and politically. In order to understand its real character, one must study German history in particular, since in Germany, unlike France, royal power did not conspire with the emerging burgher estate against the feudal elements. One would then find that the system of corporations and guilds, constantly suffering setbacks in the struggle against imperial and feudal power, constantly reasserts itself afresh against it. Only when the material basis—the technological basis of organisation—had ceased to be dominant, when it had therefore lost its revolutionary and ASCENDING CHARACTER, when it had ceased to be appropriate to the epoch and entered into conflict, partly with manufacture, partly, later on, with large-scale industry, did it start to be protected, as a *reactionary* element, by reactionary governments and the estates in alliance with them.

Saving and gain of raw material by use of machinery. In milling. In sawing, e.g., the machine (in fact a colossal razor) which cuts, or shaves, the VENEER,^a as compared both with the earlier cylindrical sawing machine, in which a number of saws were inserted, and with the handsaw, and still more with the axe and the knife.

COTTON GIN.

The most imposing example is the reclamation of cultivable land by hydraulic machines.

BOAT MAKING MACHINES, from the boats carried by steamships and down to CUTTERS and the smallest river boats, for crossing from one side to the other. These were previously made in the YARDS, in handicraft fashion, with little division of labour and with machinery used at most for planing. Now made entirely by automatic machinery, first in America. Now carried on on a large scale by a company near London.

We now proceed further with the English quotation on p. 1185.^b

As soon as we are to be able not only to extend the dimensions of machines at will, but also to develop them into a system of machinery, a driving force—and PRIME MOVER—applicable at any level must be available. Hence no development of machinery was possible without STEAM. The STEAM ENGINE WAS IN FACT invented before the industrial revolution. Imperfect. Now along with its INDUSTRIAL NECESSITY its form is also discovered. The elements of the machine were present before Watt gave it the form industrially applicable to manufacture.

[XIX-1202] “*Steam engine*: a machine which is able to bring about a mechanical effect through the action of water steam. The first idea for this [was put forward] in the second half of the 17th century. To bring about movement by using steam it was necessary not only to produce the steam pressure but to remove it afterwards and to be able to condense the steam.

“*Papin* invented the *safety valve* in 1680; later he also arrived at the idea of making the steam act in a cylinder on a kind of piston. He covered the base of the cylinder with a layer of water, converted it into steam by placing the cylinder over heat, and thus drove the piston to the top. By taking away the heat, or removing the cylinder from the heat, he effected a condensation of the steam, so that the atmospheric pressure acted on the piston of the cylinder, which was open above, thereby forcing it down. Papin published experiments of this nature in 1690 in the *Acta Lipsiensia*.²¹⁸

“*Savery*, an English captain, came upon the same idea at ABOUT THE SAME TIME, and had already actually constructed several machines when in 1696 he published a description of them. The principle of Savery’s machine differed from that of Papin’s in that he did not use a piston to transmit the effect of the steam, and he

^a Marx adds the German term in brackets.—*Ed.*

^b See this volume, pp. 421-22.—*Ed.*

was also able to accomplish the *condensation of the steam* much more conveniently and more quickly. His achievement was the building of the first large-scale *steam engine*. Savery later made use of Papin's safety valve. Savery's machine was employed in *raising water*. It consumed an extraordinary quantity of fuel, and was difficult to construct in very large dimensions. Water could not be raised very far with it. Much effort was put into finding an improvement, in particular in trying to apply to it Papin's first ideas of a piston-driven machine. It was 2 Englishmen who first succeeded *completely* in this endeavour,

"*Thomas Newcomen*, blacksmith, and

"*John Cawley*, glazier, and they should be considered the first to introduce the piston-driven steam engine. Since Savery, thanks to his patent, possessed the sole right to create a vacuum by the condensation of steam, Newcomen and Cawley entered into association with him, by taking out a patent in 1705, in the names of all 3, 'to condense steam directed *under* the piston, and to bring about an alternating movement through its connection with a lever'. The construction of this 'atmospheric' machine, later named after Newcomen alone, not only offered the advantage that, if one wanted to raise water with it, the steam did not come into contact with the water at all, but also that it provided at the same time the *possibility of bringing about any kind of movement*" [A. Ure, *Technisches Wörterbuch...*, pp. 423-26].²¹⁹

This application of MECHANICAL POWER took place where, as with wind and water mills in manufacture, GREAT EXERTION OF FORCE was necessary (stamping, turning, raising) and where in fact human labour acted as an automatic PRIME MOTOR creating its own power, whereas the implement of labour was manipulated not with the hand but was directly connected with the transmission mechanism, the shaft, crank, etc.

"*Newcomen* later improved the machine by changing the method of obtaining condensation: the cold water, instead of being poured onto the outside of the cylinder, was sprayed into it.

"The *taps and the steam distributor* initially had to be operated by hand, until a boy called *Humphry Potter*, who was employed to attend a Newcomen engine, had the idea of connecting the handles of the taps and distributors to the beam (with strings) and letting the machine operate them itself.

[XIX-1203] "The *Newcomen* engine was still far from perfect, a particular disadvantage being the condensation of water in the cylinder of the engine, which resulted in a considerable loss of heat; while the cylinder itself never became completely cool. All attempts to remedy this basic deficiency were fruitless, and the construction of the steam engine remained the same *for nearly 70 years*. Then *Watt* came onto the scene.

"*Watt's first engine* was one in which the steam produced only the downstroke of the piston, i.e. a *single action engine*. The upstroke was produced, once the piston had reached the bottom of the cylinder, by closing the steam inlet and letting the steam previously introduced flow over and under the piston, the pressure on the two sides thus being neutralised. A counterweight attached at the other end of the beam, together with the pumping rods installed there for raising the water, could therefore easily effect the ascent of the piston... Useful as the *single action* Watt engine still is for *raising water* and *salt-springs*, it is well-nigh useless for accomplishing any other mechanical work" [ibid., pp. 426-28, 430].

Thus the first single action *Watt engine* was in fact only an improved version of the steam engine, not as a GENERAL PRIME MOTOR, but in the original special function it had in the epoch of manufacture, that of a machine for pumping water.

"Most industrial applications make it necessary to convert the linear motion of a piston into rotary motion; with the single action engine this is admittedly possible, but if the motion produced is to be highly uniform, this can only be achieved if an inert object of tremendous weight (a flywheel) is set in rotary movement. But the engine has to waste a tremendous amount of power to move such an object; this power could otherwise have been employed usefully, not to mention the resulting increase in wear and tear on pivots and bearings.

"These circumstances led Watt to invent the *double action steam engine*. In this case *the steam produces both the upstroke and the downstroke of the piston*, the counterweight becomes entirely unnecessary, and the flywheel, which has to be attached to ensure uniform motion, can be much lighter. In 1782 Watt took out a patent for the double action engine, and from this time onwards the steam engine emerges as *useful for all branches of industry*.

"Improvements subsequent to Watt in the *double action steam engine* for the most part concerned subsidiary matters. In particular, it was sought to construct the engine in such a way that *it took up as little space as possible*. It was for this reason in particular that attempts were made to get rid of the beam, and connect the radius bar of the crank *directly* with the piston rod... Engines which operate purely through expansion, without condensation, air and cold-water pumps, are *Woolf engines*" [pp. 430, 432, 435-36, 441].

A steam engine therefore requires the following elements:

1) A *boiler*, with its appliances for firing, stoking, etc.

[XIX-1204] 2) A *steam cylinder*, with piston, piston-rod and stuffing box.

3) A *regulating appliance* (valve), both on the inside and the outside,
and

4) in condensation engines—a *condenser*, with an *air and water pump*.

The steam engine as a product of the period of manufacture. Here not as a GENERAL PRIME MOTOR but only for a particular purpose, *the raising of water*. Moreover, not originally automatic, since the opening and closing of the taps, partly to introduce water into the boiler, partly to cool down the cylinder and condense the steam, as also the opening and closing of the steam distributor at the end of the pipe connecting the boiler to the cylinder (the end facing the boiler), was originally done by hand. Nor was it an engine worked purely by steam, but rather an engine in which *atmospheric pressure* was essential. (The cylinder was above; Watt was first to make it enclosed. In his first engine, however, there was still a *counterweight*, attached to the other end of the beam, the one facing the pump, which actually produced the upstroke through its *weight*.)

Atmospheric pressure was essential because, after the steam was condensed through the spraying of cold water on the cylinder, a semi-vacuum arose inside. Watt's first engine was itself merely an improved version of the steam engines used for raising water in the period of manufacture. Only with his 2nd engine, the *double action* engine, was he able to transform it into a GENERAL PRIME MOTOR for industry as a whole.

Railways.

Here too the beginning belongs to the period of manufacture.

"The oldest rails were made of wood, and rails of this type are said to have been in use already 200 years ago in *quarries and mines* in England and Germany. The discovery that a horse could pull more than 4 times as much on rails as on ordinary roads led in 1738 to the construction of the first line with cast iron rails for the general purposes of *transport*. The first railways used nothing but horses for transport. The first idea of employing steam engines to move vehicles on wheels came from *Dr. Robinson of Glasgow* in 1759. In 1761 *Watt* pursued the idea, and after him in 1786 the brilliant *Oliver Evans* in North America. But it was only in 1802 that the Englishmen *Trevithick* and *Vivian* constructed the first steam locomotive, which was able to pull a load of 10 tons along a railway line at a speed of 5 English miles per hour. All kinds of experiments. A theoretical prejudice that the friction of the wheels on a smooth rail would not be sufficient to prevent a mere sliding of the wheels, their rotation on the spot, making it impossible to pull heavy loads. In 1814 *Stephenson* constructed the first genuinely serviceable steam locomotive for the *Stockton and Darlington Railway*. These locomotives were only for *transporting freight*. In October 1829 *Stephenson's locomotive* won the prize at a competition on the *Liverpool and Manchester Railway*. Condition: it had to pull a weight 3 times its own at a speed of 10 English miles an hour. In 1839, on the same line, the 13-ton locomotive *St. George* pulled a load of 135½ tons at an average speed of 21¼ English miles per hour" [ibid., pp. 545, 567-69].

"1851 GREAT WESTERN RAILWAY COMPANY: such ENGINES have been CONSTRUCTED for it since 1847. It pulls * a passenger train of 120 tons, at [an] average speed of 60 miles per hour. The evaporation of the boiler, when in full work, is equal to 1,000 horsepower, of 33,000 lbs per horse—the effective power, as measured by a dynamometer,* is *equal to 743 horsepower. The weight of the engine [XIX-1205] empty is 31 tons; coke and water, 4 tons—engine in working order, 35 tons.

"Long after the extended use of the steam engine by the miner, the manufacturer, and the navigator, it was still to be applied to the purposes of locomotion on land" * [The Industry of Nations, Part II, pp. 83, 86, 88].

The first *steamboat*, produced by *Fulton* (and *Livingstone*), was *The Clermont*, begun in New York in 1806. It was launched in 1807. (First voyage from New York to Albany.) (145 MILES at 5 MILES PER HOUR.) [J. D. Tuckett, *A History of the Past and Present State of the Labouring Population...*, p. 277.]

//Further comments on railways:

"RAILWAYS, AS A MODE OF COMMUNICATION BETWEEN DISTANT PLACES, were projected in England before any artificial canals. The RAILS were first made of * wood, [and] were laid down to facilitate the transport of coal from the collieries at Newcastle; and in some other parts, long pieces of timber were laid in the ruts of

the roads, to prevent them from becoming impassable.* Until within a very few years, *railroads have been considered as supplementary to canals, to be employed in short distances, or where the nature of the ground precluded the application of inland navigation...* It is now about 50 or 60 years since IRON RAILS were GRADUALLY SUBSTITUTED FOR WOOD IN RAILROADS" (this was written in 1846)... * "Railroads were only considered fit for heavy goods, [such] as coal, iron, or stone. The locomotive engine, for drawing carriages on railroads, was not thought of,* though Watt, *in his patent, describes a scheme for which he formed a steam carriage, but he never carried it into practice. Murdock, his pupil, an engineer, when connected with Boulton and Watt,* was the first *who actually constructed a steam carriage in this country, [in] 1782... The first practical application* of the *steam engine to the propulsion of carriages [was] effected* by *Trevithick and Vivian, who patented their invention [in] 1812...* They *constructed an ingenious steam carriage for common roads and exhibited it in London; but the generally defective state of the roads caused the patentees to abandon this application of their invention...* The railways *gradually extended their operations upon the collieries in the North of England.* Great advantage of this... On the 15th of September 1830 the RAILWAY (between Manchester and Liverpool) was OPENED BY THE PASSAGE OF 8 LOCOMOTIVE ENGINES, ALL BUILT by Stephenson and Co.; to these were connected 28 CARRIAGES. In 1836 THE FIRST RAILWAY MANIA; overtopped in 1843-48" [J. D. Tuckett, op. cit., Vol. 1, pp. 282-84, 287.]/

"Then Henry Bell, a Scotchman, FOR MANY YEARS A HOUSE CARPENTER, established the first regular English steamship passage in January 1812, between Glasgow and Helensburgh (A WATERING PLACE ON THE Clyde). This Bell was ruined; *reduced to indigence.²²⁰ David Napier contrived at length a new and superior mode of construction. [In] 1818 he established the Rob Roy,* of about 90 TONS, between Greenock and Belfast. Before 1818 *steamboats but rarely ventured beyond the precincts of the river and coasts of the Friths, and there only in fine weather" [ibid., pp. 278-81]. "About 1836-37 the project of crossing the Atlantic first started. The Sirius the first steam vessel which [XIX-1206] performed it. Government assistance was found necessary. Cunard (a Canadian) first obtained a grant from the British Government for a line of Post Office steamers between Liverpool and Boston. Government assistance* with the lines progressively set up after that.²²¹

"West India Company; Pacific Company; Cape Screw Steam Packet Ship Co.; Peninsular and Oriental Company; East India Company, for the line between Suez and Bombay" [The Industry of Nations, Part II, pp. 79-80].

Now back to p. 1185.^a

The great extent to which the WORKING MACHINE differs from the actual body of the machinery is also shown in its manufacture, in that the two things fall under different branches of industry.

"Accordingly, in machinery for spinning and its preparatory processes, for weaving of all kinds, and for papermaking, there are a variety of such working tools, as, for example, spindles and flyers, fluted rollers, heckles, and all the varieties of card clothing, weavers' reels and shuttles, the wirecloth used by papermakers, etc., the making of each of which articles constitutes a distinct branch, and is carried on by a different sort of workmen from those who make the machines. For the machine-makers usually purchase these parts from their proper makers, when they fit up their machines for sale. There are INGENIOUS MACHINES (and even *automatic) used for making

^a See this volume, pp. 421-22. The quotation further below continues the extract on the working machine given on p. 422 of this volume.—Ed.

these working parts or tools of the machine—such as the card-setting engine, for making cardcloth for cotton, etc., and the automatic bobbin-making engine. There are also several very clever machines for making the *healds* for weavers' looms, and automaton engines for making the dents employed in weaving. Generally, however, these parts of machines require manual labour trained up for this kind of work exclusively"* [*The Industry of Nations*, Part II, pp. 222-23].

"Among *CONSTRUCTING ENGINES* there is **Nasmyth's steam hammer*, [which is] capable of smiting a block of granite into powder, and as capable of breaking a nutshell without injury to the kernel. Patent for it taken* [out in] 1842. Used in *LARGE ENGINEERING ESTABLISHMENTS*, some of which have 3-4 of these hammers, of 30, 15, 5 CWT., etc., *FOR DIFFERENT KINDS OF WORK*; the *steam hammer requires for itself the attendance of *one person only*. The most gigantic machine of the kind at Messrs. Mare's large works: hammer of 6 tons weight, with a stroke of 6 feet.* This *GREAT HAMMER* is called '*Thor*'. Forges *a paddle wheel shaft for a pair of marine engines of 16 1/2 tons, 27 feet 9 inches in length.* With the *aid of a powerful crane,^a the welding^a and forging of this large mass is rendered as simple and easy as that of a horseshoe in the hands of a country smith.* In the *EXHIBITION* of 1851 there was a hammer of this kind, with an *ANVIL* weighing 8.*tons; the hammer itself [weighs] 1 1/2 tons, [and is] suspended from the piston rod^a; the piston, which works in the cylinder, placed at the top of the machine, [is] 16 inches [in] diameter, and the extreme *fall of the hammer* (in steam engines called [the] *stroke*) is equal to 42 inches; the pressure of steam usually employed being equal to 40 lb. on the square inch. The hammer being on the self-acting principle, every degree of blow, from that of merely cracking an eggshell to that of a dead pressure of 500 tons, is attainable. By admitting the steam under the piston, the hammer is elevated to the desired height, and by its own gravity the hammer falls; but the fall may be instantly eased, if desirable, by the admission of steam, according to the particular kind of blow required. In ordinary works, as many as 70 blows are given in a minute.* Used in **iron shipbuilding establishments, anchormakers, large engine builders, and at the principal railway manufacturing establishments*; the making up of iron, either from scraps, old rails, hoops,^a or from the pile is also effected by means of this hammer" [ibid., pp. 223-26].^b

[XIX-1207] "Before the introduction of this adjunct to the smithy, the forging of large marine engine shafts was not only a tedious, but an uncertain process; and many an accident which has occurred to the ocean steamers to be traced to the imperfect forging of iron; for, without blows of sufficient energy, it is impossible to expel the *scoria*^a from between the bundles of iron rods, which, as in the United States, they attempted to weld together to form their main shafts"* [p. 226].

"Apart from this *formidable kind of work, [they are] employed in the stamping out of dish covers, and the moulding and forming of silver plate.* In his patent of 1784, *TAKEN OUT* in April, *Watt* already has in mind this kind of application for the *steam engine. He alludes to a probable mode of applying the piston-rod of a steam engine, in connexion with a heavy hammer or stamper, for forging iron and other metals*" [p. 227].^b

This is the greatness of Watt, that in a patent *TAKEN OUT* in April 1784 he foresees all possible applications for the *STEAM ENGINE*, and puts them forward as possibilities, for locomotion, for the forging of metals, etc.

^a Marx adds the German term in brackets.—*Ed.*

^b Marx quotes with minor alterations.—*Ed.*

*“A still more powerful hammer for some ironworks at *Dowlais*. Hammer of 6 tons weight, [a] clear fall of 7 feet perpendicular, anvil 36 tons in one solid mass. Under such control as to be made to drive a nail into soft wood, with a succession of most delicate taps. This monster hammer employed for giving some 6 or 8 tremendous blows to the masses of iron called ‘blooms’, from which the railway bars are rolled, so as to weld them into one solid mass before they are drawn out. This invention also invented for *driving piles*” [pp. 227-28].

“Ordinarily the instrument used for *forging* is what is called a *tilt-hammer*. Heavy mass of metal, weighing 3 to 4 tons, the head of which is placed upon the anvil, which is sunk in the ground, while the shank^a rests upon pivots, in a strong frame. In order to lift this hammer, a large wheel is arranged near the head, upon the circumference of which projecting pieces or *cogs*^a are placed. As this wheel revolves, the cogs catch one after another under the head of the hammer, lift it up a certain distance, and then release it, when it falls on the object placed on the anvil. Its force is merely that acquired by its own weight, to which is superadded the impetus of its fall. But the height to which such a hammer can be raised is *very limited*, and in real power it is far inferior to Nasmyth’s hammer. The moving power of the tilt hammer may be steam, applied through the medium of pulleys and shafting, or water power from a waterwheel, used in the same way” [pp. 228-29].

“These [are] *forging machines*. *Ryder’s patent forging machine*,* in which 5 or more hammers act at once, rising and falling 700 *times in a minute; chiefly used for forging *mule and throstle spindles* for cotton machinery, screw-bolts, files.*^a This machine is *smaller* and more complicated. It has a HIGH VELOCITY together with a POWERFUL STROKE (on a MUCH SMALLER SCALE than the above)” [pp. 229-31].^b

“*RIVETING MACHINERY*.^c IN BOTH” (this and the previous *machine) “iron in the heated state is the material commonly operated upon. The forging engine reduces the metal into form, and moulds it at the will of the worker; the riveting engine [XIX-1208] simply crushes up a red-hot bolt, and so clasps two iron plates inseparably together.

“The first application of machinery to riveting iron plates was introduced by Mr. *Fairbairn* of Manchester.* He himself says: *‘The invention of the riveting machine originated in a turn-out of the boilermakers in the employ of this firm about 15 years ago. On that occasion the attempt was made to rivet two plates together by compressing the red-hot rivets in the ordinary punching-press. The success of this experiment immediately led to the construction of the original machine, in which the movable die was forced upon the rivet by a powerful lever, acted upon by a cam. A short experience proved the original machine inadequate to the numerous requirements of the boilermakers’ trade, and the present form was therefore adopted about 8 years since.’ This machine is in a portable form, and can be moved on rails.* Through this machine 12 times the QUANTITY IS DONE IN THE SAME TIME and *one man’s labour saved. The riveting is done without noise” [pp. 231-34].

“It may be safely stated that but for this machine the construction of the tubular^a iron bridges would have been almost impracticable. The invention of this machine, like that of several others used in manufactures, as the result of a ‘turn-out’ on the part of the operatives, only gives additional testimony to the folly

^a Marx adds the German term(s) in brackets.—*Ed.*

^b Marx quotes with minor alterations.—*Ed.*

^c Marx adds the verb “rivet” and three corresponding German synonyms in brackets.—*Ed.*

of such proceedings. The object of introducing the rivets into these holes while red-hot (the tubes of the great bridges) is to secure the subsequent powerful contraction of the metal in cooling by which the plates are bound together with the most powerful force" * [p. 234].

This is a very pretty line of reasoning about STRIKES. Machinery is favourable to the workers when the manufacturer introduces it without their participation, but unfavourable when PUSHED ON BY THEM. On the other hand, it is precisely as a result of the TURN-OUTS that such significant machines as the SELFACITOR, or Fairbairn's RIVETING MACHINE (without which TUBULAR IRON BRIDGES ARE ALMOST IMPRACTICABLE), etc., have been introduced. So this is good, the more so because the introduction of machinery is in general good for the worker. But when STRIKES are in question, machinery is presented as bad for the worker. He should not accelerate his fate.

"Another *stationary* RIVETING MACHINE of *Mr. Garforth at Manchester puts in 360 rivets per hour, with the attendance of 1 man and 3 boys. In this engine the force for driving up the rivet is entirely obtained from the thrust of a piston-rod, impelled forward by high-pressure steam" * [pp. 234-35].^a

"PUNCHING MACHINE,^b for PERFORATING. The one in *Woolwich Dockyard [is] quite self-acting. The pressure necessary to penetrate an iron plate .08 of an inch in thickness by a punch half an inch in diameter, requires a power of 6,025 pounds, and through one of .24 inch in thickness it demands a force of 17,100 pounds" [pp. 236-37].

"The *shearing engine* is generally connected with the punching engine, and is placed at the opposite side to the punch, or above it, as may be most convenient. The shearing portion is a flat bar of steel, brought to a cutting edge, and acting against a similar edge on the bed of the recess, somewhat like a *pair of scissors*. It is a wonderful spectacle to enter one of the large machine-shops at Manchester, and to behold a row of these monster engines at work. To hear the clanging of the metal as hole after hole is made in it; to see it cut like a sheet of paper, and shaped into its required figure; and to feel the solid ground trembling under the effects of these cyclopean instruments... The punching and the shearing engine are to the machine-maker what the scissor is to the tailor, and the auger^c [XIX-1209] to the carpenter. They are the rudimentary constructing instruments, and are among the most indispensable furniture of the iron factory" * [p. 237].

These, therefore, are the PRINCIPAL CYCLOPEAN CONSTRUCTING INSTRUMENTS.

Leaving aside this enormous POWER, machine construction makes necessary the greatest mathematical precision of the individual parts and the production of these *en masse*, involving the employment of WORKING MACHINERY on a large scale.

^a Marx quotes with minor alterations.— *Ed.*

^b Marx adds, in brackets, the noun "punch" and three German terms corresponding to it, and the verb "punch" with two variant German translations.— *Ed.*

^c Marx adds the German term in brackets.— *Ed.*

** Application of self-acting machinery to the construction of more refined machines.**

*“The almost mathematical accuracy and precision with which the *forms of the various details*, whether of the most delicate, of most ponderous machines are executed, is highly deserving of notice. To produce *pieces of machinery* so perfect by manual dexterity and labour”* (and the clock?) *“were hardly possible; and if possible, would entail so great an expense, that neither in quantity nor price could we by any increase of machinery and skilled population have kept pace with the demand which has followed upon the increased perfection and facilities of production realised by improved mechanism.

“Only 60 years ago, nearly every part of a machine had to be made and finished to its required *form by mere manual labour*; i.e. we were entirely dependent on the dexterity of the hand and the correctness of the eye of the workman, for accuracy and precision in the execution of the parts of machinery. With the advances of the mechanical processes of manufacture invented by Watt, Arkwright, Crompton, Brunel, Didot and Jacquard, a *sudden demand for machinery of unwonted accuracy* arose, while the *number of skilled workmen then existing* were neither sufficiently numerous nor skilful to meet the wants of the times. *Mr. Henry Maudslay*, about 40 years ago” (about* 1810 or 1814) *“introduced the *slide principle* into the tools and machines employed in the production of machinery; and, but for the introduction of this principle, we never could have attained to the advanced stage in machine-making in which we now are (the slide^a).

“The principle here alluded to is embodied in a *mechanical contrivance* which has been substituted for the human hand for *holding, applying and directing the motion of a cutting-tool to the surface of the work to be cut*, by which we are enabled to *constrain the edge of the tool to move along or across the surface of the object*, with such absolute precision, that with almost no expenditure of muscular exertion, a workman is enabled to produce any of the elementary geometrical forms—lines, planes, circles, cylinders, cones and spheres—with a degree of ease, accuracy, and rapidity, that no amount of experience could have imparted to the hand of the most expert workman. The slide principle is embodied in the *slide-rest*, now become a part of every lathe, and applied in a modified form in the boring mill, the planing machine, the slotting engine, the drilling machine, etc. 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*. Its introduction went at once to perfect all machinery, to cheapen it, and to stimulate invention and improvement. *Soon after its introduction the slide-rest was made self-acting*, that is, its motion along or across the surface to which the tool it held was applied were rendered independent of the attention of the workman in charge of it”* [pp. 238-39].

The *SLIDE-REST* therefore represents the *human hand* in general.

*“*Boring engine*, by which the cylinders of steam engines, hydraulic presses, etc., are cut out and smoothed on the inside. In these machines, the cylinder to be bored is firmly secured upon a frame prepared to receive it, and the cutting instruments are gradually advanced by a screw into its interior; the cutting tools revolve as they enter, and remove portions of the metal gradually until the whole cylinder is bored. In the best arrangements of these machines the [XIX-1210]

^a Marx gives both the English and the German term.—*Ed.*

advance of the boring tool is entirely automatic. The boring machine may be in general terms described as a contrivance for *working a bore or tool, which, by a rotary motion on its axis, cuts out a hollow cylinder* in any substance it is applied to.

"The cylinders of steam engines and those of hydraulic presses require to be bored with extreme accuracy and care, since any inequality in the diameter of the cylinder would certainly cause *great leakage* when a *high pressure* was applied to the piston working in it. It is only by the aid of this engine that our prime movers are obtained; for it may be safely stated, that the manufacture of a steam engine of any working dimensions could not be accomplished without the assistance of the boring engine. It is also applied for other machines, such as pumps, etc." [pp. 239-41].

The lathe.^a

"Scarcely any part of a machine exists to which the use of the lathe has not been in some way or other necessary. It is an instrument of universal value"* [p. 241].^b

"The CONSTRUCTION of the *SIMPLE FOOT-LATHE* is essentially also that of a machine driven by steam. *The only part absent is the axle and the flywheel, for this part is not here necessary, since the rotary motion is communicated from a shaft by means of a band, and this shaft is actuated by the steam engine. In heavy works, however, and indeed in all power lathes of any value, the *self-acting principle* is introduced, and adjustments are made to accomplish that object. The use of the lathe in manufacturing work is necessarily confined, as a general rule, to the production of *cylindrical bodies, or for giving a round form to particular parts of machines*" [pp. 241-43].

Shaping machine (slotting engine). (Much more modern introduction than the lathe.)

"The principle on which this engine works is simply that of a vertical *chisel*,^a moving up and down, and cutting through the metal as it descends. By an ingenious arrangement of cogs the bed is capable of being moved in concert with the rest of the machine, and thus continually presents a fresh surface for the tool to act against. It is a most interesting sight to observe these iron workmen chiselling their obdurate work into shape, without any sort of human assistance. It will be easily understood that any machine capable of cutting down in a vertical direction can be applied for giving a definite form to a block of metal. Any angular figure can be produced by this engine under the control of the workman, in whose hands it becomes, in fact, a powerful knife, cutting out just as he sees fit" [pp. 244-45].^b

"*Planing machine.*^a An iron carpenter, for all that the latter effects upon wood with his planes, *the machine accomplishes by means of its tools*, Precision and Power. By it the most accurate plane surfaces may be produced, for the machine is incapable of giving out incorrect work, and these surfaces are, consequently, far superior to those obtained formerly by the *file* of the skilful workman. In the best work done by hand, some slight deviation from absolute rectilinear motion is always observable. It differs from the shaping machine in this, that the work is cut by being carried against a stationary cutting tool. *The tool*, it is true, *is capable of lateral and vertical movements*, but this is merely so as to present to it a fresh part of the work, as * [XIX-1211] in the *sliding rest* of the *lathe. The object intended to be planed, is firmly secured to the bed of the machine, and this being capable of a

^a Marx adds the German term in brackets.—*Ed.*

^b Marx quotes with minor alterations.—*Ed.*

to-and-fro motion, is set going. A cutting tool is arranged in a strong frame across the length of the engine, and the carrying forward of the bed of the machine with the work on it, brings the latter in contact with the tool, which planes, or rather ploughs along its surface, scraping up a shaving of iron as the work passes beneath it" [pp. 245-47].

"*Drilling machine.*^a A vertical lathe, with this exception, that the work is stationary, while the tool revolves" [p. 247].

"*Measuring machine.** One of them is adapted to measuring to the 10,000TH of an inch and the other to the 1,000,000TH PART OF AN INCH" [p. 248].

*"*These are machines chiefly of the present [19th] century;** with the exception of the last one mentioned they are *all used for reducing iron* (and copper) *to shape" [p. 249].

"The *machinery used for wood-work is not less ingenious.* It is chiefly of American origin. In that country machinery for working in wood is even more largely employed than with us, and these machines find their way into workshops of a smaller character. Much greater value of manual labour in that country ... as little work as possible is done by hand ... more attention paid to economy of time and labour, and to production of rapid results with the least possible expenditure, than to great durability and finish. [Where] natural obstacles [are] to be contended with by a scattered population, not elegance of workmanship, but boldness of design"* [pp. 249-50].

The *pump* is a machine which employs STEAM POWER alone, instead of human POWER. One milliard tons (1,000 million tons) of water were pumped out of the Lake of Harlem in 1836-37 in this way, using colossal steam engines, CONNECTED TO THE PISTONS^b OF 11 PUMPS* [pp. 250-54].

//"*Before 1836 the Dutch *used to drain their low-lying country by machinery principally moved by wind-power. 12,000 windmills, with an aggregate power of 60,000 horses*" * (thus 5 [horse] POWER PER MILL) (this shows the * small dimensions upon which wind-power to be used), "are required to prevent $\frac{2}{3}$ of the Kingdom of Holland from relapsing to the state of morass and lake from which it has been rescued. A few small steam engines were also used*" [p. 253].//

*"*In England, drainage* [is] extensively carried on by aid of the steam engine, and especially by Mr. Gurney. Not less than 680,000 acres, once in a state of morass //the fens of Lincolnshire and Cambridgeshire//, are now rich in corn and cattle. The machinery used by Mr. Gurney for raising the water has been in all cases a series of scoop^a-wheels.* They somewhat resemble the undershot waterwheel; but instead of being turned by the impulse of the water *they [are used to] lift it, and are moved by steam power. The quantity discharged by the 80 horse engine is nearly 5 tons of water in a second, or about 16,200 tons of water in an hour" [pp. 254-55].

[XIX-1212] "*Centrifugal pumps.* (Appold's machine, 1851 Exhibition. Used*

*) *"*A more striking example of the use of the common pump could scarcely be selected. This colossal apparatus differs in no essential respect as regards the pumping machinery from ordinary lift pumps*"* [p. 254].

^a Marx adds the German term in brackets.—Ed.

^b Marx wrote "piston-rod" over this word, without putting any insertion mark.—Ed.

earlier in AMERICA and *France.) The ordinary pump only yields in its best form 45% of work, the remainder of the motive power employed in it being lost through its defective arrangements. Some of the worst kinds of pumps yield only 18% of work, and thus absorb 72% in overcoming the resistance, frictions, etc. Appold's pump makes 600 revolutions per minute, and, at that rate, does an average duty of 70% on the power employed"* [pp. 255, 257, 259].

There are various other CENTRIFUGAL PUMPS [pp. 260-63].

Washing and drying machine [p. 266].

*"For various purposes in the arts a *current of air in rapid motion* is required.* E.g. *the whole series of foundry operations, steel-grinding, lace-gassing, warp-drying, etc. In all these procedures a blast of air is absolutely needed.

"The *common bellows* is constructed upon very faulty principles, and is of course wholly unfit for the wants of the manufacturer. One of its chief defects lies in *the interruption of its action*, by reason of which it is not capable of giving out a regular and continuous stream of air. To effect this a new adjustment of its parts is necessary. The *nozzle*^a must communicate with a *second chamber*, in which the air can accumulate under pressure, and the pumping part of the bellows, its lower part, must throw the air into the *reservoir*, and not, as in the common bellows, directly through the nozzle.

"*The smith's bellows is a better machine.* Here there is a reservoir for the air; and the current is continuous and not intermittent. By *connecting* the arm acting on the blacksmith's bellows with the crank^a of a steam engine or waterwheel a *power air pump of a simple kind is formed*; and this sort of machine is often employed where a better one cannot be procured. The *volume of air*, however, which it is capable of giving out is very small, and cannot be made to receive *any high degree of velocity*. The pressure, however, up to which the reservoir can be loaded by weights is an advantage, since a small but very powerful jet of air can thus be procured.

"*Air machines* can, in fact, be arranged under the same head as hydraulic machines. Some are constructed upon the pumping principle, and others on the centrifugal. Bellows belong to the class of pumping machines. For small forges, as in machine shops for the smaller parts of machines, an improved kind of smith's bellows is constructed. *Enfer's apparatus* a great improvement upon the blacksmith's bellows.

"As it is found in hydraulics that a pump is the only engine which can be satisfactorily used for driving out water at a high pressure, and that centrifugal engines are only fit for low lifts and large quantities; so in this case, the centrifugal air engine is little adapted to the wants of the forge, where a *compact and powerful blast* is needed more than a *broad current* of air"* [pp. 272-74].

*The *blowing fan* (driven also by steam power). //The fan, moved by a handle,^a and used on a small scale, an exact type of it.//*

*"In iron foundries of [XIX-1213] continual employment. Air is drawn in at the openings round the axis of the machine, it then passes along the vanes,^a and is driven off at their tips^a into the tube connected with the apparatus" [pp. 274-76].

"*Air pump*. Philosophical instrument²¹³; but of primary consequence in the construction of the low-pressure steam engine, for keeping up the vacuum of the

^a Marx adds the German term(s) in brackets.—Ed.

condensing chamber, in the manufacture of sugar, etc. On the great scale applied in *seasoning wood*. The timber is placed in a large vessel of iron half-filled with the seasoning solution, the whole is then hermetically secured, and the air is exhausted by the *air pump* driven by a steam engine. A vacuum having thus been obtained, and the *air removed from the cells of the wood*, air is readmitted into the chamber, and *by its pressure on the surface*, the *liquid* is driven into the wood, thoroughly penetrating every interstice" * [pp. 276-77].

Corn mills.

* "It is found that the great friction and pressure necessary to reduce corn to powder heats it so much as to render it very liable to undergo decomposition, and the only method of preventing this is by introducing a current of air between the stones, and thus keeping the flour cool.

"One of the most magnificent flour mills in the Royal Dock-yard at Plymouth. The building is 240 feet long, and 70 feet in height. In the centre 2 steam engines of 45 horsepower, on each side 12 pairs of stones, each performing 123 revolutions in a minute, and grinding 5 bushels of corn per hour, so that when the mill is in full work, 120 bushels of corn are ground in that time, and the flour is dressed by 8 machines. The corn is laid on the upper floor, and then is conducted by spouts, first to screening machines, or cylindrical sieves, arranged somewhat like an Archimedean screw. It is admitted at one end, and being cleaned of sand and dust in its passage, falls into a hopper,^a from which it passes by spouts to the mill stones.* Then it is *purified of bran. The machines usually employed consist of a kind of cylinder made of *wirecloth*. The flour is passed into this, and is brushed through the meshes of the cloth by brushes. The flour is sometimes driven through the meshes of the cloth by fans, [which are] made to revolve very rapidly, and thus blow it through. The wirecloth [is] extremely fine in its texture. [At the] 1851 (Exhibition) [there were] specimens* with 22,500 *holes in a square inch. A length of more than 3,900 feet did not exceed one ounce in weight" [pp. 278-79].^b

"*Philosophical instruments*: at first of the rudest and simplest construction. The insensitiveness of a chemist's balance, the defective construction of a lens, the incorrect graduation of a thermometer, or the faulty subdivision of the circle of a transit instrument, vitiate all researches in which they are employed.* The ACCURACY OF THE PHILOSOPHICAL INSTRUMENTS is therefore OF THE HIGHEST VALUE FOR SCIENTIFIC ADVANCE. Conversely, the *STEAM ENGINE and the [electric] telegraph*" (clocks too for the most part) "are INVENTIONS ORIGINATING ENTIRELY IN PHYSICAL SCIENCE... The old MICROSCOPE and telescope only gave FAULTY IMPRESSIONS" [pp. 288-90].^b

LIGHT. 1851 death of Daguerre [p. 291].

[XIX-1214]* *Electromagnetism*.

"The iron is rendered magnetic by transmitting the voltaic electricity through the bundle of copper wire with which it is enveloped.

"Professor *Oersted* first discovered that a *magnetic needle* placed within the influence of a *current of electricity* circulating through a coil of wire, has immediately a tendency to *deflect*, or turn aside, communicated to it. In this consists the

[Continued on p. 462]

^a Marx adds the German term in brackets.—*Ed.*

^b Marx quotes with minor alterations.—*Ed.*

[Tables to p. 462]

Proportions of Children, Men and Women Employed in the FACTORIES Proper of the UNITED KINGDOM^a

[XIX-1215] I) COTTON

NUMBER [of] FACTORIES	CHILDREN UNDER 13		MALES BETWEEN 13 and 18	FEMALES ABOVE 13	MALES ABOVE 18	MALES	TOTAL	
	MALES	FEMALES					FEMALES	MALES and FEMALES
a) <i>England and Wales</i> 2,715	21,774	17,382	38,210	216,512	113,720	173,704	233,894	407,598
b) <i>Scotland</i> 163	307	325	2,661	32,884	5,060	8,028	33,209	41,237
c) <i>Ireland</i> 9			336	1,910	488	824	1,910	2,734
d) <i>TOTAL</i> 2,887	22,081	17,707	41,207	251,306	119,268	182,556	269,013	451,569
II) WOOLLEN								
a) <i>England and Wales</i> 1,456	3,333	2,598	9,811	29,613	30,954	44,098	32,211	76,309
b) <i>Scotland</i> 184	29	9	1,327	4,592	3,855	5,211	4,601	9,812
c) <i>Ireland</i> 39			75	417	370	445	417	862
d) <i>TOTAL</i> 1,679	3,362	2,607	11,213	34,622	35,179	49,754	37,229	86,983
III) WORSTED								
a) <i>England and Wales</i> 512	6,268	6,906	6,424	45,674	17,700	30,392	52,580	82,972

^a The following tables (pp. 458-62) are based on *Factories. Return to an Address of the Honourable the House of Commons, dated 24 April 1861*. See this volume, pp. 425-40.—*Ed.*

[Tables to p. 462]

b) <i>Scotland</i>									
17			178	1,839	895	1,073	1,843	2,916	
c) <i>Ireland</i>									
3			12	139	24	36	139	175	
d) <i>TOTAL</i>									
532	6,268	6,910	6,614	47,652	18,619	31,501	54,562	86,063	

[XIX-1216] IV) *FLAX*

FACTORIES

	CHILDREN MALES	UNDER 13 FEMALES	MALES between 13 and 18	FEMALES ABOVE 13	MALES ABOVE 18	MALES	TOTAL FEMALES	MALES AND FEMALES
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a) <i>England</i>								
136	886	1,108	1,383	13,277	3,651	5,920	14,385	20,305
b) <i>SCOTLAND</i>								
163	304	573	2,833	24,283	5,606	8,743	24,856	33,599
c) <i>IRELAND</i>								
100	226	442	3,761	23,130	5,966	9,953	23,572	33,525
d) <i>TOTAL</i>								
399	1,416	2,123	7,977	60,690	15,223	24,616	62,813	87,429

V) *HEMP*

a) <i>England</i>								
3			33	15	14	47	15	62
b) <i>SCOTLAND</i>								
2			15	487	43	58	487	545
c) <i>IRELAND</i>								
VACATE								
d) <i>TOTAL</i>								
5			48	502	57	105	502	607

Division of Labour and Mechanical Workshop

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[Tables to p. 462]

VI) JUTE

[FACTORIES

	CHILDREN MALES	UNDER 13 FEMALES	MALES between 13 and 18	FEMALES ABOVE 13	MALES ABOVE 18	MALES	TOTAL FEMALES	MALES AND FEMALES]
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a) *England*
4

6 84 17 23 84 107

b) *SCOTLAND*
27

24 54 613 3,534 1,193 1,830 3,588 5,418

c) *IRELAND*
5

10 17 10 229 176 196 246 442

d) *TOTAL*
3631^a 71 629 3,847 1,386 2,049 3,918 5,967

VII) SILK

FACTORIES

	UNDER 11 YEARS		BETWEEN 11 AND 13							
	MALES	FEMALES	MALES	FEMALES						

a) *England*
761

702 1,130 1,418 3,543 3,185 31,217 9,996 15,301 35,890 51,191

b) *SCOTLAND*
8

17 176 26 735 150 193 911 1,104

c) *IRELAND*
2

7 21 13 77 16 36 98 134

d) *TOTAL*
771

702 1,130 1,442 3,740 3,224 32,029 10,162 15,530 36,899 52,429

^a The source has: 34.—Ed.

[XIX-1217] VIII) *HOSIERY FACTORIES* (driven partly by hand, partly by power)

FACTORIES	CHILDREN UNDER 13 YEARS	MALES BETWEEN 13 and 18	FEMALES ABOVE 13 YEARS	MALES ABOVE 18	MALES	TOTAL FEMALES	MALES and FEMALES
a) <i>England</i> 65	VACATE	411	2,108	1,544	1,955	2,108	4,063
b) <i>SCOTLAND</i> 4	0	9	217	198	207	217	424
c) <i>IRELAND</i>	0						
d) <i>TOTAL</i> 69	0	420	2,325	1,742	2,162	2,325	4,487

GENERAL SUMMARY

FACTORIES	SPINDLES	POWER LOOMS	POWER- LOOM WEAVERS	AMOUNT OF POWER STEAM	WATER	CHILDREN MALES	UNDER 13 FEMALES	MALES BETWEEN 13 and 18	FEMALES over 13	MALES ABOVE 18
England and Wales 5,652	33,095,603	444,233	202,847	328,747	20,003	34,381	32,667	59,463	338,500	177,596
SCOTLAND 568	2,615,220	40,073	23,294	34,609	5,960	681	1,141	7,662	68,571	17,000
IRELAND 158	739,205	6,560	4,423	11,938	3,376	243	480	4,207	25,902	7,040
UNITED KINGDOM 6,378	36,450,028	490,866	230,564	375,294	29,339	35,305	34,288	71,332	432,973	201,636

principle of the ordinary form of electric telegraph used in this country.* Oersted also discovered *the *magnetism* induced in a soft bar of iron by the circulation round it of an electric current. Thus by making and unmaking the magnet a series of signals can be transmitted to any distance. Telegraphs in the United States on this principle** [pp. 328-29].

[See tables on pp. 458-61.]

	MALES	TOTAL FEMALES	MALES AND FEMALES
England and Wales	271,440	371,167	642,607
SCOTLAND	25,343	69,712	95,055
IRELAND	11,490	26,382	37,872
UNITED KINGDOM	308,273	467,261	775,534

FEMALES ABOUT $\frac{10}{16} = \frac{5}{8}$ of the total, and MALES = $\frac{3}{8}$. The number of males is smaller if 5 are deducted per each of the 6,378 factories to account for MALES not actually in the factories. 31,890 males should therefore be deducted, say 30,000.

[XIX-1218] The number of children under 13 comes to 69,593, nearly $\frac{1}{11}$ of the total. The total number of children cannot be given, since with the males all those between 13 and 18 are lumped together, with the FEMALES all those over 13.

The number of MALES over 18 only comes to 201,636, of whom over 31,000 must be deducted; say 31,000. There remain 170,636.

If we take the number as given in the statistics, the proportion of males over 18 = ABOUT $\frac{5}{19}$, less than $\frac{1}{3}$.

If we take the number after deduction of the 31,000, the number of males over 18 = ABOUT the 4.5th part, or less than $\frac{1}{4}$.

There are 230,564 WEAVERS to 490,866 LOOMS. Approximately 2.1 LOOMS to 1 WEAVER.

The proportion of SPINDLES to workers is more difficult to calculate. Firstly we must deduct the workers employed on the LOOMS. Secondly those employed outside the factory, and those not engaged in direct factory labour. Thus the ENGINEERS, stokers, MECHANICS, etc., must also be reckoned here. And there are at least 8 to be deducted per AVERAGE factory. Removing the weavers leaves 544,970. And removing 8 per factory over 6,378 factories leaves 493,874. But now there are the additional difficulties 1) that we do not know how many are otherwise employed in the weaving industry; and 2) that the GIGS (only in the WOOLLEN INDUSTRY) are not separately listed.

But the total number of GIGS is only 2,163. They can therefore

1861: MALES 15,530; FEMALES 36,899=1:2.3 $/(1:2^3/10=1:2^{30}/100)//$

1835: MALES 9,969 20,438=1:2.05 $/(1:2^5/100)//$

1861: in 6,268 COTTON, WOOL and WORSTED, FLAX AND SILK factories, there were:

MALES ABOVE 18: 198,351. Total number: 664,473

1835: in 3,154 of these factories, there were:

MALES ABOVE 18: 88,859. Total number: 344,623

1861: the proportion of MALES ABOVE 18 to the total number=1:3.3

1835: =1:3.8

4 PERSONS TO 1 HORSEPOWER is the * average (Reports of [the] Inspectors of Factories, October 1856, p. 9).*

General RETURNS were made BY ORDER OF PARLIAMENT in 1835, 1838, 1850, 1856, and 1861.

[XIX-1220] I) UNITED KINGDOM^a

	Number of factories			
	1838	1850	1856	1861
COTTON	1,819	1,932	2,210	2,887
WOOLLEN	1,322	1,497	1,505	1,679
WORSTED	416	501	525	532
FLAX	392	393	417	399
SILK	268	277	460	771
	4,217	4,600	5,117	6,268
HORSEPOWER EMPLOYED ^b				
	1838	1850	1856	1861
COTTON	59,803	82,555	97,132	394,100 ^c
WOOLLEN	20,617	22,144	25,901	36,477
WORSTED	7,176	11,515	14,904	28,204
FLAX	11,089	14,292	18,322	46,081
SILK	3,384	3,711	5,176	7,050
	102,069	134,217	161,435	411,912
POWERLOOMS ^d				
	1836	1850	1856	1861
COTTON	108,751	249,627	298,847	399,992
WOOLLEN	2,150	9,439	14,453	21,770
WORSTED	2,969	32,617	38,956	43,048

^a Reports of the Inspectors of Factories to Her Majesty's Principal Secretary of State for the Home Department for the Half Year ending 31st October 1856, London, 1857, p. 11; cf. also this volume, pp. 458-61.—Ed.

^b Ibid., p. 30.—Ed.

^c The source has: 294,100.—Ed.

^d Ibid., p. 16.—Ed.

SILK	1,714	6,092	9,260	10,709
FLAX	209	3,670	7,689	14,792
	115,793	301,445	369,205	490,311

[XIX-1221] *SPINDLES EMPLOYED IN THE UNITED KINGDOM^a*

	1850	1856	1861
	25,638,716	33,503,580	36,450,028

AVERAGE NUMBER OF SPINDLES IN EACH FACTORY. UNITED KINGDOM^b

	1850	1856	1861	
COTTON	14,000	17,000	ABOUT 17,000 (not quite) over	
WORSTED	2,200	3,400		3,725
FLAX	2,700	3,700	over	4,195

AVERAGE NUMBER OF SPINDLES PER HORSEPOWER. UNITED KINGDOM^c

	1850	1856	1861
COTTON	275	315	146?
WORSTED	86	102	?

[XIX-1222] *PERSONS EMPLOYED. UNITED KINGDOM. TOTAL NUMBER^d*

	1835	1838	1850	1856	1861
COTTON	219,386	259,104	330,924	379,213	451,569
WOOLLEN	55,461	54,808	74,443	79,091	86,983
WORSTED	15,880	31,628	79,737	87,794	86,063
FLAX	33,212	43,557	68,434	80,262	87,420
SILK	30,745	34,303	92,544 ^e	56,137	52,429
TOTAL	354,684	423,400	596,082	682,497	775,534

Thus there was a positive decline [in 1856-61] in the number of PERSONS employed in the WORSTED and SILK FACTORIES.

CHILDREN UNDER 13 YEARS^f

	1835	1838	1850	1856	1861
COTTON	28,673	12,327	14,993	24,648	39,788
WOOLLEN	9,451	6,203	7,094	6,703	5,969
WORSTED	3,959	4,534	9,956	11,228	13,178

^a Ibid., p. 14.—*Ed.*

^b Ibid., p. 16.—*Ed.*

^c Ibid., p. 17.—*Ed.*

^d Ibid., p. 31; cf. also this volume, p. 462.—*Ed.*

^e The source has: 42,544.—*Ed.*

^f Here and below, *Reports of the Inspectors of Factories... for the Half Year ending 31st October 1856*, p. 30.—*Ed.*

FLAX	5,290	1,767	1,581	1,806	3,539
SILK	9,082	4,452	1,498	1,686	5,182
TOTAL	56,455	29,283	35,122	46,071	67,656

It should be remarked that in 1835 over $\frac{2}{3}$ of the children still worked FULL TIME (17,147 worked only 8 HOURS AND ATTENDED SCHOOL). Since 1838 children have only worked HALF TIME, and in the SILK INDUSTRY children between the ages of 8 and 11 (not between 11 and 13) have worked HALF TIME and ATTENDED SCHOOL.

MALES BETWEEN 13 and 18

	1835	1838	1850	1856	1861
COTTON	27,339	41,046	37,059	38,941	41,207
WOOLLEN	8,042	11,018	11,884	11,134	11,213
WORSTED	2,081	3,753	7,695	7,116	6,614
FLAX	3,457	5,953	8,012	8,950	7,974
SILK	2,654	4,739	4,951	6,059	3,224
TOTAL	44,573	66,509	67,864	72,220	70,235

[X1X-1223] FEMALES ABOVE 13

	1835	1838	1850	1856	1861
COTTON	105,545	141,184	183,912	211,742	251,306
WOOLLEN	19,150	18,833	26,810	30,579	35,179
WORSTED	8,136	20,321	46,901	51,371	47,652
FLAX	19,961	29,828	46,843	55,863	60,690
SILK	14,904	20,806	29,027	38,271	32,029
TOTAL	167,696	230,972	333,493	387,826	426,856

MALES ABOVE 18

	1835	1838	1850	1856	1861
COTTON	57,829	64,547	94,960	103,882	119,268
WOOLLEN	18,818	18,754	28,655	30,675	35,179
WORSTED	1,704	3,020	15,185	18,079	31,501
FLAX	4,504	6,009	11,998	13,643	15,223
SILK	4,105	4,306	7,068	10,121	10,162
TOTAL	86,960	96,636	157,866	176,400	211,332

In looking at the *increase* in the number of *workers employed in the FACTORIES* the following distinctions must always be made: this occurs either a) as a result of the *spread* of an established machine industry (e.g. the COTTON SPINNING FACTORY); or b) through subsumption under *machine production* of spheres previously subordinated to handicraft production (particularly where one kind of production, e.g. COTTON SPINNING OR WEAVING, is taken over by

machinery, and machinery is then gradually applied to every kind of spinning and weaving); or lastly c) through *incorporating* into the factory certain branches of a machine-based industry which previously stood *outside the FACTORY* and were carried on in handicraft fashion. Thus the *Reports of the Inspectors of Factories for 31 October 1856* remarks as follows in relation to the above tables^a (the data for 1861 of course missing):

[XIX-1224] * "The increase of cotton looms" * (since 1838) * "has been consequent upon the *extension of trade*, not from power having been applied to any special article formerly woven solely by hand" * (this is therefore an example of a), above); * "but in the other fabrics it will be found that power is now applied to the *carpet loom*, the *ribbon loom*, and to the *linen loom*, in which its *application* had hitherto been *very much restricted*. In these three fabrics, *intricate and carefully conceived alterations were necessary to adapt the looms to steam power*" * (l.c., p. 16). (The latter process is an example of b).)

* "The *application of power* to the *process of combing wool* ... extensively in operation since the introduction of the '*combing machine*', especially '*Lister's*' ... undoubtedly had the effect of throwing a very large number of men out of work. Wool was formerly combed by hand, most frequently in the *cottage of the comber*. It is now very *generally combed in the factory*, and hand labour is superseded, except in some particular kinds of work, in which hand-combed wool is still preferred. Many of the hand combers found employment in factories, but the *produce of the hand comber bears so small a proportion to that of the machine*, that the *employment of a very large number of combers has passed away*" (l.c., [p.] 16).

"The *increased employment of men in worsted factories* is doubtless owing in some measure to the process of '*combing wool*' being now very generally performed in the factories since the introduction of *combing machines*" * (this is thus an example of c)); * "and the large proportion of men employed in *woollen factories* arises from the heaviness of the material, and consequently of the work, in *dressing and finishing factories*" (l.c., [pp.] 19-20).

"It will be seen," * the same Report says, * "that the number of children has decreased since 1835 very considerably in *woollen and flax factories*, while it has gradually increased in *worsted factories*. The decrease in the former is to be attributed to the *introduction of machinery, now rapidly increasing, whereby the labour of children is entirely superseded*." * (This was a *consequence* of the TEN HOURS' BILL.) * "The greater number of children now employed in *worsted factories* is not a consequence of an *increased demand* for juvenile labour, but of the *immense development of the worsted manufacture* during the last twenty years... The largest proportion of children is employed in *worsted factories*—being double the proportion of cotton factories—the smallest proportion in *flax factories*" * (l.c., [p.] 19).

Since *SILK* and *WORSTED FACTORIES* are the only ones in which we find on comparing *1856 and 1861* an *absolute* (and not merely *relative*) decline in the number of persons employed, it is WORTH WHILE looking at these FACTS more closely.

But first the following should be quoted on the *spread of*

^a See this volume, pp. 465-66.—Ed.

machinery, OR RATHER of POWER-driven machinery, from the above Report.

"The adaptation of power to machinery heretofore moved by hand is almost of daily occurrence ... the minor improvements in machinery having for their object the economy of power, the production of better work, the turning off more work in the same time, or in supplying the place of a child, a female, or a man, are [XIX-1225] constant, and though sometimes apparently of no great moment, have somewhat important results" (l.c., 1856, 31st October, p. 15).

In the same place it says:

*"There has been no mechanical invention of recent years which has created so great a revulsion in the mode of manufacture, and eventually in the habits of the operatives, as the spinning jenny and throstle frame did" * (l.c., [p.] 15).

Here the correct sequence of events is correctly expressed. The "MECHANICAL INVENTION" first. Thereby there was CREATED a "REVULSION IN THE MODE OF MANUFACTURE" (mode of production) and HENCE in the relations of production, HENCE the SOCIAL RELATIONS and "EVENTUALLY" in the "HABITS OF THE OPERATIVES".

*"The application of power to the loom is the cause of the greatest diversion of labour from an old channel to which recent public attention has been drawn. The sufferings of the handloom weavers were the subject of an inquiry by a Royal Commission, but although their distress was acknowledged and lamented, the amelioration of their condition was left, and probably necessarily so, to the chances and changes of time, which it may now be hoped have nearly obliterated those miseries, and not improbably by the present great extension of the powerloom. It has never been possible to ascertain the number of handlooms, but an estimate has been given that the number of handloom weavers and their families consisted of about 800,000 persons in 1838. At that date steam power was employed almost exclusively for cotton looms, or for fabrics mixed with cotton, but immediately afterwards there was a rapid increase in the number of powerlooms for all fabrics, woollen, worsted, flax, and silk, and their increase has continued to the present time" * (l.c., [p.] 15).

The same Reports for 1856, 31st October, has the following to say about the growth of factories (I am adding the data for 1856-61):

"The average increase of factories from 1838 to 1850" (12 years) * "was at the rate of 32 per annum, while from 1850 to 1856 it has been at the rate of 86 per annum"* (and from 1856-61 //excluding the newly added HEMP and JUTE FACTORIES, as well as the "mechanical" HOSIERY FACTORIES// 230 per annum). * "In the former period" (1838-50) "the increase was confined to factories engaged in the manufacture of cotton, woollen, and worsted, and the increase was in the following proportions: in cotton factories 6%; woollen factories 13%; worsted factories 20%. In the period between 1850 and 1856, the principal increase has been in cotton and silk factories. The aggregate increase is, in cotton factories 14.2%; woollen 5%; worsted 4.7; flax 6.1; silk 66.0%" * (l.c., [p.] 12).

[XIX-1226] The INCREASE for the period between 1856 and 1861 is: COTTON by 13%, WOOLLEN 11%, WORSTED 1%. FLAX: reduction by 5%. SILK: increase by 67%.

What is interesting, therefore, is that 1) in *FLAX* the number of factories declined between 1856 and 1861 by ABOUT 5%, or 18 in 5 years (AVERAGE of each year). This shows *concentration*. But 2) in *SILK*, on the other hand, where there was the biggest increase in the number of factories, there was also a *decline in the number of workers*, and the same thing occurred in *WORSTED*.

FLAX FACTORIES

	FACTORIES	SPINDLES	LOOMS	POWER	PEOPLE
1850	393		3,670	14,292	68,434
1856	417		7,689	18,322	80,262
1861	399	1,216,674	14,792	36,081	87,429

The SPINDLES must be looked into later. So here there is enormous concentration. The amount of POWER has almost doubled in 5 years [1856-61]; thus an increase of almost 100%. The number of people EMPLOYED, in contrast, has only grown by ABOUT 8%. The number of factories has fallen.

In *WORSTED* the growth of factories has been very slight, at 1%, and the number of workers has fallen.

WORSTED FACTORIES

	FACTORIES	SPINDLES	LOOMS	POWER	PEOPLE
1850	501		32,617	11,515	79,737
1856	525		38,956	14,904	87,794
1861	532	1,289,172	43,048	28,204	86,063

This is a very good example. Just like the one of the *FLAX FACTORIES*.

SILK FACTORIES

	FACTORIES	SPINDLES	LOOMS	POWER	PEOPLE
1850	277		6,092	3,711	42,544
1856	460		9,260	5,176	56,137
1861	771	1,338,544	10,709	7,050	52,429

This example is very good.

[XIX-1227] *Concentration*.

"There are now" (1856) "but 8 more woollen factories than in 1850, and yet the power employed in woollen factories has increased during the same period by 3,757 horses" (l.c., [p.] 13).

ECONOMY OF POWER. It says in the same *Reports of the Inspectors of Factories for 31st October 1856*:

*"Great as the increase of the power employed undoubtedly is,—59,366 horsepower between 1838 and 1856—it is nevertheless much below the actual

additional force available and in motion for manufacturing purposes. The Return of 1838 gave the number of steam engines and of waterwheels, with the amount of horsepower employed. At that time the figures represented a much more accurate estimate of the actual power employed than do the figures in the Returns either of 1850 or 1856. The figures given in the Returns are all of the *nominal* power of the engines and wheels, not of the power actually employed or capable of being employed. The modern steam engine of 100 horsepower is capable of *being driven at a much greater force than formerly, arising from improvements in its construction, the capacity and construction of the boilers, etc.*, and thus the nominal power of a modern manufacturing steam engine cannot be considered more than an index from which its real capabilities may be calculated”* (l.c., [pp.] 13-14).

“In the *Reports for October 1852* Mr. Horner quotes *a letter from *James Nasmyth*, the eminent civil engineer, of Patricroft, near Manchester, explaining at some length the nature of *recent improvements in the steam engine*, whereby *the same engine can be made to perform more work with a diminished consumption of fuel.*”* It says at the end of this letter:

*“‘It would not be very easy to get an exact return as to the increase of performance or work done by the identical engines to which some or all of these improvements have been applied; I am confident, however, that, could we obtain an exact return, the result would show that from the same weight of steam-engine machinery we are now obtaining *at least 50% more duty or work performed on the average*, and that, as said before, in many cases the *identical steam engines* which, in the days of the restricted speed of 220 feet per minute, yielded 50 horsepower, are now yielding upwards of 100’”* [p. 14].^a

The *Reports for 31st October 1856* comments further:

*“The fact that the nominal horsepower of the steam engine is but an index of its actual force, will be further evident upon a comparison of horsepower and machinery employed in 1850 and 1856. In the former period the factories of the United Kingdom employed 134,217 nominal horsepower to give motion to 25,638,716 spindles and 301,445 looms. The number of spindles and looms in 1856 was respectively 33,503,580 of the former and 369,205 of the latter, which, reckoning the force of the nominal horsepower required to be the same as in 1850, would require a force equal to 175,000 horses, but the actual power given in the Return for 1856 is 161,435, less by above *10,000 horses* than, calculating upon the basis of the return of 1850, the factories ought to have required in 1856. The number of persons employed bears exactly the same proportion for nominal horsepower as in 1838 and 1850, [XIX-1228] viz. four persons”* (l.c., [pp.] 14-15).

The *Reports of the Inspectors of Factories for 31st October 1856* concludes (in the GENERAL report):

*“The facts thus brought out by the Return appear to be that the factory system is increasing rapidly; that although the same number of hands are employed in proportion to the horsepower as at former periods, there are fewer hands employed in proportion to the machinery; that the *steam engine is enabled to drive an increased weight of machinery* by economy of force, and other methods, and that an *increased quantity of work can be turned off by improvements in machinery*, and in methods of manufacture, by increase of *speed of the machinery*, and by a variety of other causes”* ([p.] 20).^a

^a Cf. present edition, Vol. 30, p. 339.—Ed.

Child labour.

*“The educational clauses of the Factory Act being held in such disfavour by millowners” (*Reports of the Inspectors of Factories [...] 31st October 1856*, p. 66, report of Sir John Kincaid).*

(One only needs to read these *Reports* to be convinced of the “grotesque” way in which the clauses on schooling ARE COMPLIED WITH. Daily ATTENDANCE FOR SOME HOURS AT SCHOOL.)

*“Children who are required in cotton, woollen, worsted and flax factories to attend school from the age of 8 years to that of 13 are, if employed in silk-throwing mills, released from school at 11 years of age, and are then employed for full time. Even this very modified application of the half-time system was only required by the Factory Act of 1844, previous to which time their exemption from the restrictions upon the labour of children was in practice complete” (report of Mr. *Alexander Redgrave*, p. 77).

“The so-called education clauses in the Factory Acts enact no more than that the children shall attend a school... Before the passing of the Act of 1844, certificates of school attendance were not very rare, which had been signed by the schoolmaster or schoolmistress with a +, as they were unable to write. On one occasion, on visiting a place called a school, from which certificates of school attendance had issued, I was so struck with the ignorance of the master, that I said to him, ‘Pray, Sir, can you read?’ His reply was—‘Aye, *summat* (somewhat)!’, and as a justification of his right to grant certificates, he added, ‘At any rate, I am before my scholars.’

“The Inspectors, when the Bill of 1844 was in preparation, did not fail to represent the disgraceful state of the places called schools, certificates from which they were obliged to admit as a compliance with the law; but they were successful only in obtaining thus much, that since the passing of the Act of 1844, the figures in the school certificate must be filled up in the *handwriting of the schoolmaster, who must also sign his Christian and surname in full*” (*Reports ... 31st October 1855*, [pp.] 18-19. *L. Horner*).*

[XIX-1229] That wretched apologist *Macaulay* says in his *HISTORY OF ENGLAND* (Vol. I, [10th ed., London, 1854,] p. 417):

*“The practice of setting children prematurely to work ... prevailed in the 17th century to an extent which, when compared with the extent of the manufacturing system, seems almost incredible. At Norwich, the chief seat of the clothing trade, a little creature of 6 years old was thought fit for labour. Several writers of that time, and among them some who were considered as eminently benevolent, mention, with exultation, the fact, that in that single city boys and girls of tender age created wealth exceeding what was necessary for their own subsistence by 12,000 pounds a year. The more carefully we examine the history of the past, the more reason shall we find to dissent from those who imagine that our age has been fruitful of new social evils. The truth is, that the evils are, with scarcely an exception, old. That which is new is the intelligence which discerns and the humanity which remedies them.”^a

^a Quoted from *Reports of the Inspectors of Factories ... for the Half Year ending 31st October 1855*, London, 1856, p. 18.—Ed.

"The Legislature is alone to blame, by having passed a *delusive law*, which, while it would seem to provide that the children employed in factories shall be *educated*, contains no enactment by which that professed end can be secured. It provides nothing more than that the children shall on certain days of the week, and for a certain number of hours (3) on each day, be inclosed within the four walls of a place called a school, and that the employer of the child shall receive weekly a certificate to that effect signed by a person designated by the subscriber as a schoolmaster or schoolmistress" (*Reports of the Inspectors of Factories ... 30th June^a 1857*, report of *L. Horner*, [p.]17).*

Horner says in the same report, pp. 17-18:

*"But it is not only in the miserable places above referred to that the children obtain certificates of school attendance without having received instruction of any value, for in many schools where there is a competent teacher, his efforts are of little avail from the distracting crowd of children of all ages, from infants of 3 years old and upwards; his livelihood, miserable at the best, depending on the pence received from the greatest number of children whom it is possible to cram into the space. To this is to be added scanty school furniture, deficiency of books, and other materials for teaching, and the depressing effect upon the poor children themselves of a close, noisome atmosphere. I have been in many such schools, where I have seen rows of children doing absolutely nothing; and this is certified as school attendance, and, in statistical returns, such children are set down as being educated.

"The effect of the half-time system appears to have caused the employment of the smallest number of children who would be subject to that system" (*Reports of the Inspectors of Factories ... 30th June 1857*, report of *Mr. Alexander Redgrave*, [p.] 78).*

A very pretty example of FACTORY EDUCATION is to be seen in *PRINTWORKS* (before these were entirely subject to the FACTORY ACT, i.e. before 1861?):

[XIX-1230] *"The school attendance of children employed in printworks is thus provided for:

"Every child before being employed in a printwork must have attended school for at least 30 days and not less than 150 hours during the 6 months immediately preceding such first day of employment, and during the continuance of its employment in the printwork it must attend for a like period of 30 days and 150 hours during every successive period of 6 months, reckoned from the first day of its employment.

"The attendance at school must be between 8 a.m. and 6 p.m. No attendance of less than 2 hours and a half nor more than 5 hours, on any one day, shall be reckoned as part of the 150 hours.

"Under ordinary circumstances the children attend school morning and afternoon for 30 days, for at least 5 hours each day, and upon the expiration of the 30 days, the statutory total of 150 hours having been attained—having in their language 'made up their book'—they return to the printwork, where they continue until the 6 months have expired, when another instalment of school attendance becomes due, and they again seek the school until the book is again made up... Very many boys, having attended school for the required number of hours (150), when they return to school after the expiration of their 6 months' work in the

^a Should be April.—*Ed.*

printwork, are in the same condition as when they first attended school as printwork boys ... [they] have lost all that they gained by their previous school attendance" (*Reports of the Inspectors of Factories ... 31st October 1857*, report of Alexander Redgrave, [pp.] 41-42).

"In other printworks the children's attendance at school is made to depend altogether upon the exigencies of the work in the establishment; the requisite number of hours is made up each 6 months by instalments consisting of from 3 to 5 hours at a time, spreading over perhaps the whole six months... For instance, the attendance on one day might be from 8 a.m. to 11 a.m., on another day from 1 p.m. to 4 p.m., and the child might not appear at school again for several days, when it would attend, perhaps from 3 p.m. to 6 p.m.; then it might attend for 3 or 4 days consecutively or for a week, then it would not appear in school for 3 weeks or a month, after that, upon some odd days at some odd hours when the operative who employed it chose to spare it; and thus the child was, as it were, buffeted from school to work, from work to school, until the tale of 150 hours was told"* (l.c., [pp.] 42-43).

Influence of the Ten Hours' Bill in increasing the intensity of labour.

*"The great improvements that have been made in machinery, of all kinds, have vastly improved their productive powers; improvements to which a stimulus was doubtlessly given, especially as regards the greater speed of the machinery in a given time, by the restrictions of the hours of work. These improvements, [XIX-1231] and the closer application which the operatives are enabled to give, have had the effect ... of as much work being turned off in the shortened time as used to be in the longer hours" (*Reports of the Inspectors of Factories ... 31st October 1858*, report of L. Horner, [p.] 10).^a

"The Children's Employment Commission, the reports of which have been published several years, brought to light many enormities, which still continue—some of them much greater than any that factories and printworks were ever charged with"* (l.c., [p.] 10).

Concentration:

* *Chief branches of Scotch manufactures*, in the course of 20 years between 1835 and 1857, as quoted from Parliamentary Returns:

	Flax mills	Males	Females	Total
1835	170	3,392	10,017	13,409
1857	168	8,331	23,391	31,722"[pp. 29-30].

"The flax branch shows a decrease of 2 in the number of mills, but with the large addition of 18,313 in the number of hands employed, showing the extent to which small mills have been superseded by the larger class, during the period mentioned" (*Reports of the Inspectors of Factories ... 31st October 1858*, report of Sir John Kincaid, [p.] 30).*

He has this to say of one school, in the same report:

"The school apartment was about 15 feet long and 10 feet wide; and within that space, we counted 75 children screaming something unintelligible, at the top of their voices" (l.c., p. 32).

^a Marx also quotes this passage in Notebook V of this manuscript (see present edition, Vol. 30, p. 338).—Ed.

Age of the children and INVENTIONS TO GET RID OF TWO SETS OF HALF-TIMES.

* "The mill-occupier requires juvenile labour in his factory, and obtains it in the manner enjoined by statute. The question of *real age* is one with which he does not trouble himself. What he looks for in the juvenile hands is *strength* to enable them to perform their respective work. If the child has strength for the work, it is not a question of whether the child is of the age at which he may be legally withdrawn from school and half-time employment, but whether its appearance will justify the certifying surgeon in granting to it a full-time certificate for employment in his factory... My attention was called to an advertisement which appeared in the local newspaper of an important manufacturing town of my district, of which the following is a copy:

"Wanted from 12 to 20 boys, not younger *than what will pass* for 13 years of age... Wages 4s. per week. Apply..." (*Reports of the Inspectors of Factories ... 31st October 1858*, report [XIX-1232] of *Alexander Redgrave*, [pp.] 40-41).

"Thus there are frequently two antagonists to the half-time system of education, the parent who seeks full-time wages, and the manufacturer who seeks the full-time worker. Most manufacturers, when the nature of the employment will permit of the arrangement, and when a sufficient supply of older hands can be procured, dispense with the labour of half-time children, i.e. children under 13 years of age... *The manufacturers of textile fabrics* have been singled out, as it were, from all other manufacturers by whom children are employed..."*

// Because it was in these factories that the FACTORY SYSTEM was first developed in its full HIDEOUSNESS. The CHILDREN'S EMPLOYMENT COMMISSION was actually called into being by these MILLOWNERS, in order to prove the existence of as great, and even greater, ENORMITIES in the other branches of MANUFACTURING and mining, in the coalmines, and the glass, porcelain, etc., factories. // (l.c., [p.] 42.)

* "Employers of labour would not unnecessarily retain 2 sets of children under 13 if they could obtain a sufficient number of children fit for the work above that age. In fact one class of manufacturers. the *spinners of woollen yarn*, now rarely employ children under 13 years of age, i.e. *half-times*."*

(The expression is a good one. The workers are only TIME, FULL-TIMES OR HALF-TIMES.)

* "They have introduced improved and new machinery of various kinds, which altogether supersedes the necessity for the employment of children; f.i.: I will mention one process ... wherein, by the addition of an apparatus, called a *piecing machine*, to existing machines, the work of 6 or 4 half-times, according to the peculiarity of each machine, can be performed by one young person. The object of improved machinery is to diminish manual labour, to provide for the performance of a process or the completion of a link in a manufacture by the aid of an iron instead of by the aid of the human apparatus, and undoubtedly the half-time system had some share in stimulating the invention of the 'piecing machine'" (l.c., [pp. 42-] 43).^a

Baynes (of Blackburn, at that time MAYOR of Blackburn) says in a LECTURE given in 1858 ON THE COTTON STATISTICS:

^a Cf. present edition, Vol. 30, p. 338.—Ed.

“Each real and mechanical horsepower will drive 450 self-acting mule spindles with preparation, or 200 throstle spindles, or 15 looms for 40 inches cloth, with winding, warping, and sizing. Each horsepower in spinning will give employment to 2½ operatives, but in weaving to 10 persons, at wages averaging full 10s. 6d. a week to each person—men, women, and children, including half-times. For the *average numbers spinning production at 13 ounces per spindle...”*^a

* *Water power and steam power.* *

*“In the early days of textile manufactures, the locality of the factory depended upon the existence of a stream having a sufficient fall to turn a waterwheel; and, *although the establishment of these water mills was the commencement of the breaking up of the domestic system of manufacture*, yet the mills necessarily situated upon streams, and frequently at considerable distances the one from the other, formed part of a *rural rather than of an urban system*; and it was not [XIX-1233] until the introduction of steam power as a substitute for the stream, that *factories were congregated in towns and localities* where the coal and water required for the production of steam were found in sufficient quantities. *The steam engine is the parent of the manufacturing towns*, and it is thus from a comparatively modern date that the rapid extension of some and the origin of other towns is to be reckoned” (*Reports of the Inspectors of Factories ... 30th April 1860*, report of *Alexander Redgrave*, [p.] 36).*

In the *SPINNING factory* there are many processes

“from the first sorting of the raw material to the final spinning of the yarn, carders, rovers, drawers, jobbers, spinners, pieceners, etc. On the other hand, with *weaving, the whole is completed in one process, that of weaving, which requires, moreover, but one class of hands.”*^b

* *Bleaching and Dyeing Works Act of 1860* (came into operation on 1st August 1861).*^c

*“In most of the cotton, worsted, and silk mills, an *exhausting state of excitement necessary* to enable the workers satisfactorily to mind the *machinery, the motion of which has been greatly accelerated within the last few years*, seems to me not unlikely to be one of the causes of that *excess of mortality from lung diseases* which Dr. Greenhow has pointed out in his recent admirable Report on the subject” (*Reports of the Inspectors of Factories ... 31st October 1861*, report of *Robert Baker*, [pp.] 25-26).*

*From Dr. Greenhow’s report, comparing the *pulmonary mortality which exists in the silk* and other *textile districts, and districts with other industries where females and children are largely employed,* with the *mortality in the standard healthy districts (rural) of England*^d:

^a [J.] Baynes, *The Cotton Trade...*, Blackburn, London, 1857, pp. 48-49. Quoted from: *Reports of the Inspectors of Factories ... for the Half Year ending 31st October 1858*, London, 1858, pp. 59-60.—*Ed.*

^b The source has not been found.—*Ed.*

^c See *Reports of the Inspectors of Factories ... for the Half Year ending 31st October 1861*, London, 1862, p. 19.—*Ed.*

^d *Ibid.*, pp. 26-28.—*Ed.*

<i>Percentage of adult males engaged in manufacture</i>	<i>Death rate from pulmonary affection per 100,000 males</i>	<i>District</i>	<i>Death rate from pulmonary affection per 100,000 females</i>	<i>Percentage of adult women engaged in manufacture</i>	<i>Nature of female occupation</i>
14.9	598	Wigan	644	18.0	Cotton
42.6	708	Blackburn	734	34.9	Cotton
37.3	547	Halifax	564	20.4	Worsted
41.9	611	Bradford	603	30.0	Worsted
31.0	691	Macclesfield	804	26.0	Silk
14.9	588	Leek	705	17.2	Silk
36.6	721	Stoke-upon-Trent	665	19.3	Earthenware
30.4	726	Woolstanton	727	13.9	Earthenware
	305	8 healthy districts	340		

[XIX-1234] "In this Table, in each district and in each kind of employment we observe that the average death rate both of males and females is more than twice as high as the average death rate in the 8 healthy districts ... a result which it seems impossible to account for, either by moral or climatic causes, and therefore the view taken by other enquirers, as well as by Dr. Greenhow, that there is something in congregated labour which seriously affects the health of the workers and ends in an increased mortality, is confirmed" (*Reports of the Inspectors of Factories ... 31st October 1861*, report of Robert Baker, [p.] 28).*

"In the *silk manufacture the daily work of children above 11 years"* (between 11 and 13), * "less Saturday, was limited to 10 hours per day,* between 1844 and 1850; before this period (since 1833) it was limited to 9 HOURS; by a law of 1850, children over 11 years old engaged IN WINDING AND THROWING SILK were to work 10½ hours a day. This under the pretext that SILK MANUFACTURE was LIGHTER work", etc. [p. 26].^a

* "One thing, however, seems quite clear, that the allegation put forth in 1850 about the manufacture of silk being a healthier occupation than that of other textile fabrics not only entirely fails of proof, but the proof is quite the other way"* (l.c., [p.] 27).

[In] *1833 the labour of females and young persons [was] limited to 12 hours per day, and 3 years allowed for the full development of the Act with respect to children.

The Quarterly Return of the Marriages, Births and Deaths registered in the divisions, counties, and districts of England, published by authority of the Registrar-General, and dated 28th October 1857, contains the following paragraph:*

* "Mr. Leigh, of the Deansgate subdistrict, makes the following judicious remarks, which deserve the careful consideration of the people of Manchester. *Very sad there is the life of a child.* Births 266; deaths 254. The total numbers of deaths,

^a Cf. present edition, Vol. 30, p. 227.—Ed.

exclusive of coroner's cases, is 224, and of this number 156 were of children under 5 years of age, leaving a total adult mortality of only 68. So large a proportion I have never known. It is evident that whilst the ordinary circumstances affecting adult life have been to a considerable extent in abeyance, those militating against the very young have been in great activity. Of the children, not less than 76 were carried off by diarrhoea, 14 by hooping cough, 6 by scarlatina, 6 by measles, and one by small-pox. 87 of the children died under the age of one year. Neglected diarrhoea, close confinement to ill-ventilated rooms during hooping cough, want of proper nutrition, and *free administration of laudanum*, producing marasmus and convulsions, as well as hydrocephalus and congestion of brain, these must explain why, with a diminution of the causes producing disease in adults, the mortality as a total is still so high" (*Registrar-General's Quarterly Return, No. 35, p. 6*).^{*a}

[XIX-1235] The aim in investigating relative surplus value is to find how necessary labour time is reduced by the growth in the productivity of labour, and thereby SURPLUS labour time, HENCE the SURPLUS VALUE which falls to the share of capital, is increased. An increase in the productivity of labour = a cheapening of the commodities which enter into the worker's consumption, and the value of labour capacity is determined by the value of those commodities. With machinery there is the additional element that cheap means of labour are replaced by expensive ones. Constant capital must therefore be investigated here—it must be taken into account—since a new element now enters into it (and also into the valorisation process). The forces of nature cost nothing; they enter into the labour process without entering into the valorisation process; but the PRIME MOTORS on which they act, or through which [they] are appropriated for the labour process, do cost something. The past labour contained in the constant capital forms a value component of the commodity, just as does the living labour obtained in exchange for the variable capital. If on the one hand the necessary (living) labour time were to fall, through an increase in the productivity of living labour, while on the other hand the value component of the commodity added by machinery were to rise in the same, or a higher, ratio, the commodity would become dearer instead of cheaper, and thus—despite the greater productivity of the living labour—no additional surplus value would be created; the surplus value would rather be lessened. For this reason, it is necessary to discuss already at this point, TO A CERTAIN DEGREE, *the share* which the value component added by the value of the machinery to the commodity, to the product, accounts for in the total value of the commodity.

On the other hand, it is clear in the case of the increase in the

^a See *Reports of the Inspectors of Factories ... for the Half Year ending 31st October 1857*, London, 1857, p. 23; cf. present edition, Vol. 30, p. 217.—Ed.

productive forces of labour brought about by *simple cooperation* and *division of labour, d'abord*,^a that the constant capital does *not* increase in proportion to the commodity; it is clear, secondly, that, even disregarding the higher productivity of living labour and therefore the lesser magnitude of value of the individual products, *a cheapening of the commodity also* takes place on account of *economy* in constant capital (particularly in the communal use of constant capital, parts of which, such as buildings, heating facilities, lighting, etc., do not increase in mass in the same proportion as the living labour they serve at the same time as general objective conditions of labour). In so far as the commodity is thereby cheapened—even disregarding the greater productivity of the living labour considered for itself—this circumstance can be mentioned, although we shall not examine it in more detail until the section on capital and profit.⁴

It is precisely the characteristic feature of capitalist production that while even the *social* characteristics of labour which raise its productive power appear as a force *alien* to labour itself, as *conditions* lying outside it, as qualities and conditions not belonging to labour itself—for the worker always continues to confront capital as an isolated individual, standing outside the social connection with his fellow-workers—this is still more the case, *prima facie*, with the *objective* conditions of that social labour.^b The examination of these conditions therefore appears from the capitalist point of view as the examination of *circumstances* which concern capital alone, proceed from it and are enclosed within it, and have absolutely nothing to do with the worker. This is so even though it is only this *social* form of labour itself that converts these external conditions from such as exist in isolation for the individual worker into social conditions, concentrated conditions, which can be employed *more economically* through concentration in space and time and *common* employment by the cooperating workers; can be employed in such a manner that the workers' greater *EFFICIENCY* in the labour process is accompanied by lesser costs, i.e. a smaller consumption of value by the workers, so that they enter to a lesser degree into the valorisation process.

We shall find, in connection with machinery in particular, how the alienation between these conditions of labour and the way in which the labour itself is carried on is held fast in the *consciousness of the capitalist* and asserted in his dealings with the worker.

^a Firstly.—*Ed.*

^b Cf. present edition, Vol. 28, pp. 504-05.—*Ed.*

This is, however, only a further consequence and carrying through of the *antagonism* which forms the essence [XIX-1236] of capitalist production, and was therefore already delineated in our discussion of absolute surplus value.^a

It is, in general, a characteristic of capitalist production that the conditions of labour confront living labour as independent, as personified, that it is not the worker that employs the conditions of labour, but the conditions of labour that employ the worker. It is precisely through this that the latter become *capital*, and the commodity owner who possesses them becomes a *capitalist vis-à-vis* the worker. This independence naturally ceases in the actual labour process, but the total labour process is a process of capital, it is incorporated in capital. To the extent that the worker figures in the process as *labour*, he is himself a moment of capital.

[V-175a/A]²²² The vitalising natural power of labour—the fact that by using and expending material and instrument it preserves them in this or that form, hence also preserves the labour objectified in them, their exchange value—becomes a *power*, not of labour, but of *capital*, as does every natural or social power of labour which is not the product of earlier labour or not the product of such earlier labour as must be repeated (e.g. the historical development of the worker, etc.). Therefore, this vitalising power is not paid for by capital. Just as the worker is not paid for his capacity to think.

Labour's specific quality of preserving already objectified labour as objectified labour by adding a new quantity of labour does not receive any remuneration; nor does it cost the worker anything, as it is a natural property of labour. In the *process of production* the separation of labour from the objective moments of its existence—material and instrument—is *superseded*. The existence of capital and wage labour depends on this separation. Its supersession which actually takes place in the *actual* production process, is not paid for by the capitalist. Nor does the supersession occur through the exchange between capitalist and worker, but through *labour itself in the production process*. And as such *present* labour it is itself already incorporated into capital, it is a moment of capital. This preserving power of labour therefore appears as *ca-*

^a Ibid., Vol. 30, pp. 190-92.—Ed.

pital's power of self-preservation. The worker has merely added new labour; past labour—in which capital exists—has an eternal existence as *value* quite independently of its material existence. This is how the matter appears to capital and to the worker.

[XIX-1236] With the formal subsumption of labour under capital, these conditions of labour undergo no further modification; they remain, physically, material and means of labour. But with the new mode of production, with the revolution in the mode of production created by capitalist production, these conditions of labour change their shape. They receive new determinations from the fact that they serve the socially cooperating workers as conditions. With simple cooperation and manufacture based on the division of labour, this modification affects merely the general conditions of labour, which can be utilised commonly, such as buildings, etc. But with the mechanical workshop based on machinery, the modification extends to the actual instrument of labour. As with the formal subsumption of labour under capital, these conditions, and therefore also their altered shape—a shape which has been altered by the social form of the labour itself—remain an *alien circumstance* to the workers. Indeed, in the case of machinery, as we shall see further on, the antithesis or alienation develops further, into an *antagonistic contradiction*.

A further question to be dealt with here is this: If we examine these conditions of labour, to the extent that they are *cheapened* in the social form of labour, this happens in relation to the cheapening of the *commodities* which enter into the worker's consumption, and this is identical with the relative *devaluation* of labour capacity. What is important here is that the total amount of labour which enters into the individual product—the sum total of the past and present labour entering into it—is *lessened*. With cooperation and the division of labour it is evident that the living labour becomes more productive, performs the same work in a shorter time, while it goes without saying that the part of the value of the commodity which derives from the constant capital is not increased. With machinery this needs to be demonstrated, and will be demonstrated. But the characteristic feature of all 3 CASES, in so far as relative surplus value is being considered, is that the living labour needs *less time* to produce the same commodity.

In the section on capital and profit, on the other hand, what is involved is neither the *increase of surplus value*, SURPLUS labour time,

which is rather presupposed as given; nor is it the *reduction in the total amount of past and living labour which enters into the commodity*; it is instead the way in which the *ratio of the surplus value to the value of the total capital advanced*, and in particular the quantitative proportion between the living labour employed and the past labour employed, is affected by the *economy* in constant capital which is first made possible by the social forms taken on by labour in the capitalist mode of production, but excluded, in contrast, in the case of the dispersed labour of independent handicraftsmen or small-scale agriculturists. *Such is the difference in the consideration of the same circumstances from different points of view.*

If we now return to machinery,^a it is evident that the mode of production corresponding to it finds its purest and most classical expression in the *automatic workshop*, in which the application of the machine takes the form of the application of a connected system of machinery, of a totality—falling into a number of different phases—of mechanical processes which have as their common motor a PRIME MOTOR driven mechanically, with the drive provided by natural forces.^b The single machine makes its appearance in many spheres of production, replacing [XIX-1237] either earlier individual trades of the handicraft type, or kinds of work previously performed through cooperation, such as, in the latter case, building machines, [or] e.g. sowing, mowing, threshing machines, etc. There is, particularly in the first case, a re-emergence of handicraft production, based now on machinery, such as with the original spinning machine, many kinds of loom, the sewing machine, etc. But this handicraft production based on the machine now appears as nothing more than a *transition* to large-scale industry. Or, in manufacture (and agriculture) based on the division of labour, the machines intervene in specific processes, while other processes, which are admittedly connected with the former processes, but still interrupt mechanical production, require human labour, not for the supervision of a mechanical process, but for the production itself. This is the way in which manufacture and large-scale agriculture reappear, in changed shape, in the period of machine production.

The *automatic workshop*, however, is a perfected mode of production, corresponding to machinery, and it is the more

^a See this volume, p. 477.—*Ed.*

^b See present edition, Vol. 29, pp. 82-85.—*Ed.*

perfect, the more it forms a complete mechanical system, and the less individual processes still require (as do mechanical spinning mills not employing *SELFFACTORS*) to be mediated through human labour.

Machinery has a *negative* impact on the mode of production resting on the *division of labour* in manufacture and on the *specialised skills of labour capacity produced* on the basis of that division of labour. It devalues the labour capacity specialised in this way, in part reducing it to simple, abstract labour capacity, and in part producing on its own basis a new specialisation of labour capacity, the characteristic feature of which is its *passive subordination* to the movement of the mechanism itself; its complete annexation to the needs and requirements of the mechanism.

//The *Ricardian* example (*PRINCIPLES OF POLITICAL ECONOMY*, 3RD ED., [p.] 469 sqq.):

Let the capitalist have £20,000. 7,000 of this is INVESTED IN FIXED CAPITAL; 13,000 AS CIRCULATING CAPITAL EMPLOYED IN THE SUPPORT OF LABOUR. Now machinery TO THE AMOUNT OF 7,500 is added to the FIXED CAPITAL of 7,000. Hence the total FIXED CAPITAL NOW=7,000+7,500=14,500. There therefore remains a circulating capital of 20,000-14,500, i.e. 5,500. Previously the GROSS PRODUCE WAS 15,000, hence a profit of £2,000. Or $\frac{1}{10}$ on 20,000,=10%.

The extra labour previously employed by "7,500" "WOULD BECOME REDUNDANT" [p. 471].

Ricardo now continues:

*"The *reduced quantity of labour* which the capitalist can employ, must, indeed, with the assistance of the machine, and after deductions for its repairs, produce a *value equal to £7,500*, it must replace the circulating capital with a profit of £2,000 on the whole capital"* ([p.] 471).

I.e. the amount of surplus value and therefore the rate of profit (10%) on the £20,000 remains exactly the same, although now *less than half the QUANTITY OF LABOUR IS EMPLOYED, compared with previously*. The phrase, "WITH THE ASSISTANCE OF THE MACHINE" means nothing here, since Ricardo himself argues, as against Say, that the machine only adds its own *value* (as INCLUDED IN ITS ANNUAL wear and tear) to the product; but no surplus value. Ricardo does not investigate how this "FACT" can be reconciled with the THEORY OF VALUE, which it contradicts *prima facie*.^a//

^a See D. Ricardo, *On the Principles of Political Economy, and Taxation*, p. 335 (note), pp. 336-37.—Ed.

* "*Machine, or engine, is any mechanical instrument contrived to move bodies. And it is composed of the mechanical powers. Mechanical powers are certain simple instruments, commonly employed for raising greater weights, or overcoming greater resistances, than could be effected by the natural strength without them. These are usually accounted 6 in number, viz. the lever, the wheel and axle, the pulley, the inclined plane, the wedge, and the screw*"* (Hutton, *A Course of Mathematics*, [pp.] 174-75).²²³

The mechanical workshop takes the place of 1) manufacture based on the division of labour; 2) the independent handicraft enterprise.

Although the mechanical workshop 1) *negates* simple cooperation, in so far as it puts the machine in the place of power created through cooperation; and 2) *negates* the *division of labour*, in so far as it abolishes cooperation or manufacture resting on the division of labour, there does nevertheless occur within the mechanical workshop itself both cooperation and division of labour. Point 1 needs no further discussion here. It should however be remarked that, given machinery as the material basis of the mechanical workshop, simple cooperation plays a much more important role in it than the division of labour.

[XIX-1238] But what is above all involved here is this question: what kind of division of labour is it which predominates in the mechanical workshop, as opposed to the kind which characterises manufacture?

There are two points to distinguish here.

Either, a), machinery develops into a system of machines, which perform different processes, each of which forms a phase for the next one, as in spinning, paper manufacturing, etc. Here there naturally emerges a *new division of labour*, which belongs to the mechanical workshop, and which must be examined specifically.^a

Or, b), a *system of this kind* does not result; for we do not understand by this system merely the link between MOTIVE POWER, transmitting machinery, and working machinery. This link can be found in *all* mechanical factories without distinction. Two things are, in turn, possible here.

α) Either a handicraft is replaced by a machine,^b as e.g. the handloom is replaced by the mechanical loom, or the turner's bench is replaced by a mechanical lathe. Here the mechanical workshop directly replaces handicraft work, and machines of this kind can also bring into existence a new kind of handicraft work. Once they have developed into a mechanical workshop, what

^a See this volume, p. 486.— *Ed.*

^b *Ibid.*, p. 481.— *Ed.*

characterises this workshop is *cooperation*. Many such machines (set in motion by the same motor and the transmission apparatus connected to it) work together at the same place and the same time, and there is therefore added to them a large number of human machine assistants, working alongside each other simultaneously. Whether a machine of this kind is operated in isolation by a small master with a pair of assistants, or a number of them work together, the handicraftsman, who performed various operations and whose labour represented a larger or smaller totality of pieces of work, is replaced by a single machine, which performs these operations simultaneously. This handicraftsman is replaced by a mere assistant to the machine. The same thing takes place in the mechanical workshop composed of many such machines. Only there is the difference that in the first case power was still developed in so far as MAN still remained the PRIME MOTOR with this machine too, whereas in the workshop man is replaced with an automaton, a mechanical driving force. No division of labour in our sense took place here. It is therefore not abolished. What is abolished is a more complex kind of labour, comprising various activities, which is replaced by *simple machine labour*. By *simple machine labour* we understand the assistance man has to render to the working machine.

β) But if a machine of this kind replaces a manufacture based on the division of labour, examples of which we have just given, this rests directly on a *negation of the division of labour*. The specialisation achieved by labour capacity through the division of labour is destroyed, and labour capacity is therewith *depreciated*, in so far as the system of manufacture required a hierarchy of labour capacities, so that there was simple labour at one point and, corresponding to it, more complex labour at another. Simpler labour now replaces simple labour; though simple, the latter was still specific, and had therefore developed into a specialised skill, however lousy the work might be. Here the system of manufacture can turn back into handicrafts, i.e. the work can be carried on by independent small masters with a pair of assistants; but this is always to be regarded as no more than a *transitional stage* to the mechanical workshop.

In so far as a division of labour takes place here, it proceeds solely from the general structure of the mechanical workshop; hence from the distinction, *d'abord*, between PRIME MOTOR and working machine. The former may require stokers, FEEDERS of the PRIME MOTOR with coal, water, etc., or also the clearing out of ashes, etc. Workers employed in this way, whose numbers are limited by

the small number of PRIME MOTORS in operation in a workshop, are mere menials. The principle of the division of labour here is not that a *particular* specialism is developed, but that certain simple functions can be performed by one person for many, just as well on a large as on a small scale. E.g.; a furnace can be heated for many just as it can for a few. Secondly, there are services performed for the *machine* as such, in order to keep it in constant REPAIR. Thus there are workers charged with the sharpening e.g. [XIX-1239] of carding machines, or mechanics and engineers *attached* to the workshop. Individual persons can only be attached in this way because there is a large quantity of machines working simultaneously, hence there is constantly something to be patched up, etc., friction to be removed, so that the whole of the time of such a man can be USEFULLY employed. There are naturally only a small number of these people, who do no "machine labour", but are attached to the workshop after being selected from the circle of those accessory workers required to set up the workshop (machine producers, handicraftsmen, etc.).

Finally, menials are needed to sweep up the waste, remove the debris of the workshop, etc. This is one of the main tasks of the children (in the sense of the English FACTORY ACTS). This kind of labour has nothing to do with machine labour as such; it is merely a menial function. One cannot speak here of the development of a particular specialism, but only of menial tasks, which do not demand power or presuppose the development of any sort of specialised skill. //In the case of the LACE *machine* women and children have to perform machine labour.//

These categories are to be found in every workshop (mechanical), as also in manufacture, in part.

But the workers who really supervise the operation of the machines, or the main body of workers properly so called, are people who all do the same thing, so that here there is no actual division of labour, but instead simple cooperation; the economic basis of its effect here is not cooperation among human beings, but the circumstance that economy is demanded where a common motor and transmission machinery are used for many similar machines (leaving aside buildings, etc., which is also characteristic of manufacture resting on simple cooperation).

But finally, in so far as firstly children are required here for wholly simple menial services, and on the other hand young people of both sexes and women are required for the actual machine labour, a new division of labour emerges, found already in handicrafts, and in slave labour resting on cooperation, namely

between *OVERLOOKERS* and *actual* workers.^a This division of labour arises from the need for discipline and supervision in the armies of workers, as in other armies, and has nothing to do with the development of specialisation, unless it be specialisation in checking, giving orders, and cavilling. These *OVERLOOKERS* in fact represent the capitalist towards the workers. In the case of the small handicraft master, who works with a few journeymen, this work of supervision and command, the disciplinary power, is bound up with his cooperation in the work. With the industrial capitalist, this *LABOUR OF SUPERINTENDENCE*, which is “his”, is performed by workers delegated by him. These are the NCO’s of the workshop. It is in fact the *OVERLOOKERS* and not the capitalists who perform the real *LABOUR OF SUPERINTENDENCE*. The mechanical workshop is altogether characterised by these relations of subordination, regimentation, just as under the system of slavery the ruling mode of cooperation is slave-driving Negro slaves and working Negro slaves. It is labour for the exploitation of labour.

With both the kind of mechanical workshop just examined and the one that rests on a system of machinery—whether these two kinds of workshop replace independent handicrafts or manufacture—very skilled labour is often replaced by simple machine labour, as in the mechanical workshop, and special skills are always destroyed.

a) We come now to the mechanical workshop based on a *system of machinery*.^b Here a division of labour naturally takes place. //It is not necessary to repeat here the characteristics this kind of mechanical workshop has in common with the one considered above, characteristics which therefore apply to *the mechanical workshop in general*.// This division of labour has its material basis in the differences between the specialised machines which perform specific phases of the production process, and for the service of which there are therefore allotted parties of workers trained and assigned exclusively to that purpose. Here too the main body of workers is always formed by those employed in the final operation, not by those employed in preliminary or subsequent work. There is added here a new kind of menial service, which falls to the children to perform, namely when the transfer of the object of labour from one machine to another is accomplished not by the machine [XIX-1240] itself but by human vehicles, who in

^a See present edition, Vol. 30, pp. 262-63, 387, 413; Vol. 32, pp. 495-98; and this volume, pp. 279-83.—*Ed.*

^b See this volume, p. 483.—*Ed.*

fact form here only the porters, the arms and legs, who act as intermediaries in the transfer of the material from one machine to another. Differences of age and sex play a major role here, in so far as certain manipulations require somewhat more strength, physical size, etc., and, according to the nature of the material to be worked on, more dexterity, agility, or, particularly with hard materials, a greater power of resistance.

In manufacture the *TASKS* are divided into a hierarchy of abilities and strength, depending on what is required to *make use* of the instruments, and on whether the skills demanded for this are easier or harder to achieve. Certain physical and mental qualities of the individuals are here *SEIZED UPON*, in order through their one-sided development to create in manufacture a total mechanism formed out of human beings themselves. Here, in the mechanical workshop, the body of this total mechanism consists of the differentiated machines themselves, each of which performs the particular special processes, following one upon the other in succession, which are required for the process as a whole. Here it is not a specially developed labour capacity which puts into service a particular instrument in a skilled fashion, it is instead the self-acting instrument which needs special and constantly attached servants. There the worker *puts into service* a particular instrument; here particular groups of workers *serve* various machines, which perform particular processes. The hierarchy of abilities which more or less characterises manufacture disappears here.

What distinguishes this mechanical workshop is rather a general *equalisation* of services, so that for those really employed in machine labour the transition from one machine to another is entirely possible, within a short period of time, and without great preparations. In manufacture, the division of labour proceeds from the fact that the particular *TASKS* to be performed can only be performed by particular *specialised* labour capacities, hence that not only distribution but real *division* of the labour into groups of specialisations must take place. With the mechanical workshop, in contrast, it is the machines which are *specialised*, and their simultaneous functioning, although they perform successive phases of the same total process, requires the *distribution* among them of particular groups of workers, who are always entrusted with the same services—which are all equally simple. It is a distribution of the workers among *specialised machines* rather than a division of labour among *specialised labour capacities*. In the one case, the *labour capacity* which puts into service the particular instruments is specialised; in the other case, the *machine* served by particular

groups of workers is *specialised*. Leaving aside the mere menials mentioned previously and newly occurring here, the main distinction is between *strength* and *agility*. In so far as strength is to be employed, this is merely the *average strength* possessed by every *adult MALE* as distinct from *FEMALES* and children. This can therefore be reduced to a simple difference of sex and age. But the *agility* and dexterity which is demanded, and similarly the quickness of observation, and altogether the highly strained attentiveness required, have to do with the fact that the rapidity of functions at the machine runs parallel with the speed of the machine itself, and that a number of these machines, each of which has many functions, have simultaneously to be served, e.g. in the connecting up of threads. In large part this kind of agility—leaving aside the fact that practice, habit, is the main thing here—requires in turn no particular special skill, but a degree of application peculiar to e.g. certain ages, more characteristic of the undeveloped (youthful) body than the developed one. All these services are distinguished by their *passivity*, their adaptation and subordination to the operations and motions of the machine itself. This *specialisation in passivity*, i.e. the abolition of specialisation itself as specialisation, is what characterises machine labour. *Improvements within the mechanical workshop itself* are aimed at removing as far as possible all the skills which have again grown up on its own basis. It is therefore completely simple labour, i.e. [labour characterised by] uniformity, emptiness and subordination to the machine. Deadening labour, as labour which [XIX-1241] requires the complete subsumption of the individual under it, just as with the division of labour in manufacture. It prevents the development of specialisation, but is itself in turn specialised in this lack of specialisation. Here the last remnant of the worker's satisfaction in his own labour disappears, to be replaced by absolute indifference, which is itself conditioned by the labour's lack of real content.

In manufacture, labour is continuous. In the mechanical workshop, attentiveness to the work of the machine is continuous, and so is the movement of the worker, conditioned by the movements of the machine (where the worker must move backwards and forwards with the machine). His real interventions, in contrast, are incidental, according to whether the machine has made an *ERROR* or not. Here, therefore, the worker is in constant servitude to the machine, whereas in manufacture the instrument always remains the servant.

In manufacture—considered as a whole—the individual worker forms a living part of the machine as a whole, i.e. the workshop,

which is itself a mechanism consisting of human beings. In the mechanical workshop, on the other hand (i.e. the workshop considered here, which has developed into a system of machinery), man is a living accessory to its aggregate body, which exists outside him in the shape of the machine, and to the automatic machinery. Yet the machinery as a whole consists of machines, which form parts of that whole. Here human beings are merely the living accessories, the conscious appendages, of the unconscious but uniformly operating machinery.

The mechanical workshop is characterised by *cooperation* (simple) and the distribution of the cooperating agents among the *various parts* of the whole of the big automaton, as its mobile accessories and servants; by subordination to the movements and operations of the machine, to which the worker is chained as to his fate; by the equivalence of all kinds of work and by passivity; and by the absence of specialisation or at most the development of mere differences of age and sex into specialisations. Discipline and subordination arise here not merely from cooperation but from subordination to the system of machinery as a whole.

Ure, who is notorious even in England as the shameless apologist of the factory system, nevertheless performed a service in being the first to grasp its spirit correctly, and sharply to characterise the *distinction* and the *antithesis* between the automatic workshop and the system of manufacture based on the division of labour, which was treated by Adam Smith as the most important thing. (This to be brought in later.) The removal of the hierarchy of skills; the destruction of the specialisations entrenched behind "the division of labour", and therewith the introduction of a passive subordination—with its accompaniment of absolute discipline, regimentation, subjection to the clock and the rules of the factory—these things are very properly picked out by Ure, as we shall now see from certain extracts.^a The regained *universality* of the worker in this system exists only *in itself*, in so far as he is indifferent towards his labour, the content of which lies outside him, and in so far as he develops no specialisation. In reality, however, this is the development of a *specialisation without content*.

[XX-1242]¹⁰ Whereas under handicrafts, and even in manufacture, the movements of a human being direct those of the instrument, the reverse is the case in the mechanical workshop: the movements of the machinery direct those of the human being.

^a See this volume, p. 496 ff.—*Ed.*

Sir David Barry:

“The indispensable necessity” (for the workers) “of forcing both their mental and bodily exertions to keep exact pace with the motions of machinery propelled by an unvarying, unceasing power. 2) The continuance of an erect posture for periods unnaturally prolonged and too quickly repeated. To these causes are often added dusty rooms; impure air, heated atmospheres, constant perspiration” (*Engels, [Die Lage der arbeitenden Klasse in England,]* p. 193).^a

“The slavery in which the bourgeoisie holds the proletariat chained, is nowhere more conspicuous than in the factory system. Here ends all freedom in law and in fact. The operative must be in the mill at half-past five in the morning; if he comes a couple of minutes too late, he is fined; if he comes ten minutes too late, he is not let in until breakfast is over, and a quarter of the day’s wages is withheld. He must eat, drink, and sleep at command... The *despotic bell* calls him from his bed, his breakfast, his dinner.

“What a time he has of it, too, inside the factory! Here the employer is absolute law-giver; he makes regulations at will, changes and adds to his codex at pleasure, and even if he inserts the craziest stuff, the courts say to the working man: Now, when you have freely entered into this contract, you must be bound by it” (*Engels, pp. 217-18 [p. 467]*).

The whole of this lawmaking boils down to fines or deductions from wages.

Engels quotes this from a regulation:

“6) Every operative detected *speaking* to another, *singing* or *whistling*, will be fined 6d.; for leaving his place during working hours, 6d.’

“It may be said that such rules are necessary in a great, complicated factory, in order to insure the harmonious working of the different parts; it may be asserted that such a severe discipline is as necessary here as in an army. This may be so, but what sort of a social order is it which cannot be maintained without such shameful tyranny?... Every one who has served as a soldier knows what it is to be subjected even for a short time to military discipline. But these operatives are condemned from their ninth year to their death to live under the sword, physically and mentally” (l.c., [p.] 219 [p. 468]).

“But it is far more shameful yet, that according to the *universal* testimony of the operatives, numbers of manufacturers collect the fines imposed upon the operatives with the most heartless severity, and for the purpose of piling up extra profits out of the farthings thus extorted from the impoverished proletarians” ([p.] 220 [p. 469]).

This is the only legislation in the world—these are the only CODES of law in the world (the slaveholder AT LEAST DISPENSES WITH THIS MOCK LEGISLATION)—the confessed purpose of which is nothing else than to “enrich” the legislator as far as possible at the expense of his subjects; a legislator who only AIMS AT the extortion of money for his private advantage.

And it is precisely the *apologists of the factory system*, such as *Ure*,

^a F. Engels, *The Condition of the Working-Class in England*, present edition, Vol. 4, p. 448. Henceforth the references in square brackets are to this edition.—Ed.

the apologists of this complete de-individualisation of labour, confinement in barrack-like factories, military discipline, subjugation to the machinery, regulation by the stroke of the clock, surveillance by overseers, complete destruction of any development in mental or physical activity, who vociferate against infringements of individual freedom and the *free* movement of labour at the slightest sign of state intervention.

“Overwork and forced work” (*Engels*, [p.] 151 [p. 416]).

“As voluntary, productive activity is the highest enjoyment known to us, so is compulsory toil the most cruel, degrading punishment” (l.c., [p.] 149 [p. 415]).

The machines “work *against* the workers, not *for* them” (l.c., [p.] 173 [p. 433]).

“The *collecting*” of both sexes and all ages in a single work-room, the inevitable contact between them, the *crowding into a small space of people*, to whom neither mental nor moral education has been given [XX-1243] and the accumulation of a number of relatively “raw” people in a workroom, are all characteristic of the mechanical workshop [p. 441].

FULL-TIMERS—HALF-TIMERS—this way of describing workers who work full time and children who work only half time, which is not only used by the English manufacturers, but occurs *officially* in the FACTORY REPORTS, is much more characteristic of the factory system than the distinction between MASTERS and HANDS. Here the workers are purely and simply personified *labour time*, and the character of capitalist production emerges in its pure form. Age differences are reduced to *full-timers* and *half-timers*, 10¹/₂ hours and 6 hours. The workers are merely personified hours.

“The time of *children*, which should be devoted solely to their physical and mental development,” is sacrificed to “the greed of an unfeeling bourgeoisie. The children are withdrawn from school and the fresh air so that they can be exploited for the benefit of the manufacturers” (l.c., [p.] 187 [p. 443]).

There can be no doubt that the factory system sacrifices women and children more than any other system. Moreover, the preponderance of women and children in the mechanical workshops breaks the *resistance* [of the workers] and adds a passive element which also condemns the adults to slavery, to passive subordination.

“Let us hear how they (‘the humane bourgeoisie’) acted before the factory inspector was at their heels. Their own admitted testimony shall convict them in the Report of the Factories’ Inquiry Commission of 1833” (l.c., p. 187 sqq. [ibid.]).

1817: petitions from Owen (then a manufacturer in New Lanark), calling for legislative guarantees for the health of the operatives, and especially of children. [Factory] Acts of 1818, 1825 and 1831

“of which the first two were never enforced, and the last only here and there. The Act of 1831 (Sir J. C. Hobhouse) provided that in cotton mills no one under 21 should be employed between half-past seven at night and half-past five in the morning; and that in all factories young persons under 18 should work no longer than twelve hours daily, and nine hours on Saturday” ([p.] 208 [pp. 459-60]).

The introduction of *child labour* brought the worker to the point of selling, instead of his own labour, that of his *children*, therefore *selling his children* and conducting a slave trade with them. This brought about an essential change in the relation between capitalist and worker, for the *buyers of labour capacity* are no longer faced with *sellers* of their own labour, but with *sellers of alien labour*, of labour capacities which are capable neither of taking responsibility, nor of entering into a contract. The married worker endeavours to recover by the *sale of his children* what the adult worker loses through the competition of child labour. Here, then, there is not even the form of the *contract*, which characterises the relation between capital and labour, the formal freedom of the two contracting parties, for it is not children who make contracts, but their parents who make them on their behalf. An English Tory writer says on this subject:

“Infant labour has been called in to aid them” (the adult workers) *“and even to work for their own daily bread. Without strength to endure such disproportionate toil, without instruction to guide their future life, they have been thrown into a situation morally and physically polluted!... The Jewish historian has remarked upon the overthrow of Jerusalem, by Titus, that it was no wonder it should have been destroyed, with such a signal destruction, when one inhuman mother sacrificed her offspring to satisfy the cravings of absolute hunger”* (*Public Economy Concentrated etc.*, Carlisle, 1833, [p.] 66).

[XX-1244] The factory system includes the *sale* of children by their parents, and at the same time the annihilation of the physical and mental development of the workers in *embryo*, i.e. in the years of their *childhood*.

We always proceed here from the assumption that labour capacity is paid at its *value*, and we therefore do not have to consider the *real* movement of wages here. It nevertheless results from the factors determining the *AVERAGE VALUE* of wages that the value of labour capacity includes a wage sufficient to support the family of the worker. Since the factory system converts women and children into wage labourers who have to *earn* their own subsistence, the *value* of labour capacity is thereby depreciated, not only because women and children emerge as competitors of the other workers, but also because the *AVERAGE VALUE* is now paid, and this value is *divided* among all members of the family. A RICARDIAN, *De Quincey*, remarks correctly on this:

“The numerical increase of labourers has been great, through the growing substitution of female for male and above all of childish for adult, labour. Three girls of 13, at wages of 6 to 8s. a week”, //much too high!// “in their myriads displaced *the one man of mature age, at wages varying from 18s. to 45”* (Thomas de Quincey, *The Logic of Political Economy*, Edinburgh, 1844, [p.] 147, note).^a

There is therefore no doubt at all that the AVERAGE VALUE of *labour capacity* is thereby brought down, devalued, or that this is a direct consequence of the mechanical workshop, which requires neither muscle power, nor skilled labour, the learning of which can only be begun at a more mature age, and then can only be brought to the required level of virtuosity through long years of apprenticeship. One of the first results of the factory system was *the abolition of APPRENTICESHIP*.

“The result of the Commission set up by the English bourgeois themselves was the *Factory Act of 1833*, which forbade the employment of children under nine years of age (except in silk mills), limited the working-hours of children between 9-13 years to 48 per week, or 9 hours in any one day at the utmost; that of young persons from 14-18 years of age to 69 per week, or 12 on any one day as the maximum, provided for an hour and a half as the minimum interval for meals, and repeated the total prohibition of night-work for persons under 18 years of age. Compulsory school attendance two hours daily was prescribed for all children under 14 years, and the manufacturer declared punishable in case of employing children without a certificate of age from the factory surgeon, and a certificate of school attendance from the teacher... Further, surgeons and inspectors were appointed” ([p.] 211 [F. Engels, *The Condition of the Working-Class in England*, pp. 461-62]).

How much this system is based on the *devaluation of labour capacity* is shown by its immanent polemic against education, of which there are examples above. It requires as a *conditio [sine qua non]* the non-development of these production machines!

In 1844, under Peel’s ministry, 6½ hours’ labour for children between 8 and 13, 12 (from 6 o’clock in the morning until the evening, including mealtimes) for workers over 13.

“Surplus value” can only be extracted through

“the barbarous treatment of the operatives, the destruction of their health, the social, physical, and mental decay of whole generations” (Engels, p. 215 [p. 466]).

What distinguishes the factory system is the fact that in it the true nature of *surplus value* emerges. *Surplus labour*, and therefore the question of *labour time*, becomes decisive here. But *time* is IN FACT the active existence of the human being. It is not only the measure of human life. It is the space for its development. And the ENCROACHMENT OF CAPITAL OVER the TIME OF LABOUR is the appropriation of the life, the mental and physical life, of the worker.

^a Cf. present edition, Vol. 30, p. 304.—Ed.

[XX-1245] Machine labour does away with the all-round exertion of the muscles, it offers no opportunity for physical activity. Nor does it allow any mental activity. It prevents

“the worker from occupying his mind with other things” (l.c., [p.] 216 [ibid.]),

and in addition it takes control of this mind and body when it is still in an *immature* state.

It is,

“properly speaking, *not work*, but tedium, the most deadening, wearing process conceivable” (l.c., [p.] 216 [ibid.]).

“The engine moves unceasingly; the wheels, the straps, the spindles hum and rattle in his ears without a pause, and if he tries to snatch one instant, there is the overlooker at his back with the book of fines. This condemnation to be buried alive, to give constant attention to the tireless machine is felt as the keenest torture” ([p.] 216 [ibid.]).

“The dull routine of a ceaseless drudgery, in which the same mechanical process is incessantly repeated, resembles the labour^a of Sisyphus—the toil, like the rock, recoils perpetually on the wearied operative. The mind gathers neither stores nor strength from the constant work of the same muscles” (Dr. J. P. Kay) (Engels, l.c. [p.] 217, note [p. 467]).

The two books by Dr. Ure and Frederick Engels are absolutely the *best* on the factory system, and are identical in the field they cover; the difference being that what *Ure* expresses as the *servant* of the system, a servant whose horizons are confined within the system, is expressed by Engels as a free critic.

Engels remarks, in relation to the small masters in Birmingham, that the worker is in an even worse position here.

“The many small employers cannot well subsist on the profit divided amongst them, determined by competition, a profit under other circumstances absorbed by a single manufacturer” ([p.] 241 [pp. 488-89]).

This is true in general with the fall in the rate of profit which is inseparable from the coming of large-scale industry. The small masters, who have to divide amongst themselves the profit otherwise absorbed by a *single employer*, are in such a lousy situation that they themselves have to force down the workers' wages to an abnormal degree.

In the London *dress-making establishments* there is a mass of young girls, 15,000 of them, who work 15 to 18 hours a day for 4 months of the year, during the SEASON. In most of these establishments the girls never sleep more than 6 hours, often only 3 or 4, occasionally only 2 hours in 24, when they don't have to work through the whole night. The only limit set to their work is the absolute physical inability to hold the needle another minute.

^a Engels has “torment”.—*Ed.*

“Cases have occurred in which these helpless creatures did not undress during 9 consecutive days and nights, and could only rest a moment or two here and there upon a mattress, where food was served them ready cut up in order to require the least possible time for swallowing. In short, these unfortunate girls are kept by means of the moral slave-driver's whip, the threat of discharge, to such long and unbroken toil as no strong man, much less a delicate girl of 14 to 20 years, can endure” ([p.] 253 [p. 498]).

The same can be said of the *needlewomen* of London.

[XX-1246] The large-scale *industrial* system has been put into effect:

- 1) in *FACTORIES* proper;
- 2) in manufactories, which all now employ machines to some degree;
- 3) in agriculture.

In all these one finds a *system of production on a large scale*. The number of workers is *relatively small* in proportion to the *product* produced by them in all these spheres together. Hence the large number of workers and particularly children and women workers who are simply exploited in attic rooms; where, without any real development in the productivity of labour, both the amount of *surplus value* created and the quantity of products depend exclusively on *SURPLUS LABOUR* and on paying only what is absolutely essential. This applies to the human material *set free* by the great system and therefore obliged to subject itself to every condition, even such in which the frightful consequences of this system emerge still more clearly than directly in the system itself—above all of course in those *handicraft* enterprises related to the factory, into which the whole of the surplus population is thrown, but then in all those spheres of labour which capital exploits *formally*, without giving rise to a *capitalist mode of production* in them, although the latter must ultimately take over, as in the cases of tailoring, sewing, baking, fancy weaving, lace making, etc., and then in fact even appears as an advance and an *ALLEVIATION* of the situation! Apologists of the system, such as Ure, therefore point to the atrocities of the system of labour produced *outside* the factory system by the factory system itself—whether under the small masters or under an enterprise only formally capitalist—in order to prove the *relative beauties* and *advantages* of the system itself! They only forget that those branches of labour are so to speak only the *foreign department* of the system, being still its direct offspring and logical consequence!

“The *working class* first manifested opposition to the bourgeoisie when they *forcibly* resisted the introduction of machinery at the very beginning of the industrial period” [p. 503].

“The manufacturer is Capital, the operative Labour” (l.c., [p.] 329 [p. 563]).

There are according to *The Daily News* (1862) an average of roughly 15 deaths by starvation every month in London.^a

Let us now see what Mr. Ure (*PHILOSOPHY OF MANUFACTURES*), the Pindar of the factory system, has to tell us about the essential character of the mechanical workshop.^b

Vol. I. Difference between the handicraftsman, who employs the instrument of labour, and the machinery, which employs the worker:

“It has been said, for example, that the steam engine now drives the powerlooms with such velocity as to *urge on* their attendant weavers at the same rapid pace; but that the handweaver, *not being subjected to this restless agent*, can throw his shuttle and move his treadles at his convenience” ([pp.] 10-11 [*The Philosophy of Manufactures...*, London 1835, p. 7]).

It was Sir Robert Peel who made the comment Ure refers to. After all, he still thought he was living in the good old days of his weaving father, since he went on to say

“the handloom weavers are mostly small farmers” [Fr. ed., p. 11, Engl., ed., p. 7].

Ure counters this, on pp. 11 and 12 [pp. 7-8], with the evidence of Dr. Carbott of Manchester:

“Nothing can be a greater mistake; they live, or rather they just keep life together, in the most miserable manner, in the *cellars and garrets of the town*, working sixteen to eighteen hours for the merest pittance.”

But what was it that threw them into the cellars and garrets and condemned them to work for 16 to 18 hours a day, if not competition from machinery?

[XX-1247] “This class of operatives, who, though *inmates of factories, are not, properly speaking, factory workers, being independent of the moving power*, have been the principal source of the obloquy so unsparingly cast on the cotton and other factories” ([p.] 13 [pp. 8-9]).

This group of factory workers is composed in part of the menials mentioned earlier (of whom Ure is speaking here), in part of the NCO's (OVERLOOKERS) and in part of the engineers and mechanics who are associated with the factory.

What then does the classical *FACTORY* or *mechanical workshop* consist in?

^a The source for this statement has not been found.—*Ed.*

^b Marx gives the English title, but quotes in French, from a French edition (*Philosophie des manufactures...*, Paris, 1836). This applies both to longer passages and to separate words and phrases. The page numbers he gives refer to the French edition. Those in square brackets, supplied by the Editors, refer to the English edition (unless otherwise stated).—*Ed.*

The term "designates ... the *combined operation* of many orders of work-people, adult and young, in tending with assiduous skill a system of productive machines continuously impelled by a central power... It excludes" all factories "in which the mechanisms do not form a *connected series*, nor are dependent on one prime mover... This title" (FACTORY) "in its strictest sense, involves the idea of 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 subordinated to a self-regulated moving force" ([pp.] 19-20 [pp. 13-14]).

Here are the main characteristics of the mechanical workshop.

A vast automaton, i.e. a system of connected productive mechanisms, receiving their motive power from a self-acting central motor. This system of machinery, with its automatic PRIME MOTOR, forms the body, the articulated body of the mechanical workshop. The cooperation of various *classes* of worker, distinguished mainly by whether they are adult or not, differences of age and gender. These workers themselves appear as merely the intellectual organs of the machinery (the machinery does not appear as their organ) who are distinguished from the inanimate organs by consciousness, and who work "in concert" with the latter, acting, like the inanimate machinery, in subordination to its moving force and equally "uninterruptedly".

The raw material has to pass through various metamorphoses, to which in the factory system there correspond various machines.

The main difficulty with the mechanical workshop lay in producing

"the *discipline* necessary to induce human beings to renounce their desultory habits of work, and to *identify themselves with the unvarying regularity* of the *complex automaton*. To devise and administer a successful code of factory discipline, tied to the necessities of factory diligence, was the Herculean enterprise, the noble achievement of Arkwright" ([p.] 22 [p. 15]).

Ure continues:

"Even at the present day, when the system is perfectly organised, and its labour lightened to the utmost" (!) "it is *found nearly impossible* to convert persons *past the age of puberty*, whether drawn from rural or from handicraft occupations, into useful factory hands" ([pp.] 22-23 [p. 15]).

Here Ure admits that, although no apprenticeship, etc., is needed, one must work in these mitigated jails, as Fourier calls them,²²⁴ from one's youth in order to be able to subject oneself to the "discipline" and to obey the "unvarying regularity of the complex automaton" throughout the whole of the day. This automaton is the autocrat here.

"When Adam Smith wrote his immortal elements of economics, automatic machinery being hardly known, he was properly led to regard the *division of labour* as the grand principle of *manufacturing* improvement. In each branch of manufacture he saw that some parts ... were, on that principle, of easy execution

and [XX-1248] some ... were comparatively difficult; and therefore he concluded that to each a workman of appropriate value and cost was naturally assigned" ([p.] 28 [p. 19]).

"But what was in Dr. Smith's time a topic of useful illustration, cannot now be used without risk of misleading the public mind as to the right principle of manufacturing industry. In fact, the *division*, or rather *adaptation of labour to the different talents of men*, is little thought of in factory employment. *On the contrary, wherever a process requires peculiar dexterity and steadiness of hand, it is withdrawn as soon as possible from the cunning workman, who is prone to irregularities of many kinds, and it is placed in charge of a peculiar mechanism, so self-regulating, that a child may superintend it*" [p. 20].

//And Ure is still surprised that the workers are not grateful to the "peculiar mechanism" which devalues their labour capacity and deprives their specialism of any monetary value!!! ([p.] 29 [p. 20]).

(Ure also speaks of the "menials" of his autocrat or automaton:

"In those spacious halls the benignant *power* of steam summons around him his *myriads of ... menials*" ([p.] 26 [p. 18]).

"The principle of the factory system, then, is to substitute *mechanical science for hand skill*, and the *partition of a process into its essential constituents*, for the *division or graduation of labour among artisans*. On the *handicraft plan*, labour was usually the most expensive element of a production: *materiem superabat opus*^a; but on the *automatic plan*, skilled labour gets *progressively superseded*, and will, eventually, be replaced by *mere overlookers of machines*" ([p.] 30 [p. 20]).

(And the worker is supposed to be grateful for being converted like this from a skilled man to a mere overlooker!)

"By the infirmity of human nature it happens, that *the more skilful the workman*, the more self-willed and intractable he is apt to become, and, of course, the less fit a component of a mechanical system" (where he must *himself be an automaton*) "in which, by occasional irregularities, he may do great damage to the whole. The *grand object*, therefore, of the modern manufacturer is, through the *union of capital and science*, to *reduce* the task of his work-people to the exercise of *vigilance and dexterity—faculties, when concentrated to one process, speedily brought to perfection in the young*" [pp. 20-21].

(Here Mr. Ure admits that the automatic system, like the division of labour, fixes the worker's activity *on a single point*—only the undeveloped human being must be broken in from childhood onwards to be an "organ of the automaton") ([pp.] 30, 31 [pp. 20-21]).

"In the infancy of mechanical engineering, a machine-factory displayed the *division of labour in manifold gradations*: the file, the drill, the lathe, having each its different workmen *in the order of skill*: but the *dexterous hands of the filer and driller* are now superseded by machines, etc., and those of the iron and brass turners by the self-acting slide-lathe. Mr. Anthony Strutt, who conducts the mechanical

^a The work excelled the material (Ovid, *Metamorphoses*, II, 5).—Ed.

department of the great cotton factories of Belper and Milford, has so thoroughly departed from the old routine of the schools, that *he will employ no man who has learned his craft by regular apprenticeship*" ([p.] 31 [p. 21]).

(And indeed the LAWS ON APPRENTICESHIP WERE TO BE REPEALED SOON after the emergence of machinery.)

The characteristic feature of the automatic system is, instead of the gradation and SPECIFYING of labour,

"the equalisation of labour, or automatic plan. On the gradation system, a man must serve an apprenticeship of many years before his hand and eye become skilled enough for certain mechanical feats; [XX-1249] but on the system of decomposing a process into its constituents, and embodying each part in an automatic machine, a person of common care and capacity may be entrusted with any of the said elementary parts after a short probation, and may be transferred from one to another, in any emergency, at the discretion of the master. Such translations are utterly at variance with the old practice of the division of labour, which fixed one man to shaping the head of a pin, and another to sharpening its point" (pp. 32-33 [pp. 21-22]).

The great Ure speaks proudly of

"that cramping of the faculties, that narrowing of the mind, that stunting of the frame, which were ascribed, and not unjustly, by moral writers, to the division of labour" ([p.] 34 [pp. 22-23]).

"It is in fact the constant aim and tendency of every improvement in machinery, to supersede human labour altogether, or to diminish its cost, by substituting the industry of women and children for that of men; or that of ordinary labourers, for trained artisans. In most of the water-twist, or THROSTLE cotton MILLS, the spinning is entirely managed by females of sixteen years and upwards. The effect of substituting the self-acting mule for the common mule is to discharge the greater part of the men spinners, and to retain adolescents and children. The proprietor of a factory near Stockport states, in evidence to the commissioners, that by such substitution, he would save £50 a week in wages, in consequence of dispensing with nearly 40 male spinners, at about 25s. of wages each. This tendency to employ merely children with watchful eyes and nimble fingers"

//these watchful eyes and nimble fingers must BE USED UP IN THE NICK OF TIME FOR THE POCKETS OF THE MANUFACTURERS//

"instead of journeymen of long experience, shows how the scholastic dogma of the division of labour into degrees of skill has been exploited"

(the English text has "EXPLODED" here: the French translation brings out a fine double meaning)

"by our enlightened manufacturers" ([pp.] 34-35 [p. 23]).

After Ure has thus correctly described the "tendency" and the "constant aim" to drive out labour, to subject the worker to the "automaton-autocrat", to reduce the price of labour by substituting the labour of women and children for that of adults, and unskilled for skilled labour, after he has described this as the essence of the automatic workshop, he goes on to reproach the

workers because by their STRIKES they—hasten!—the development of this beautiful system. As the system is the best thing for them, what could be more intelligent on their part than to “force” its development!

The predominance of women and children in the automatic workshop is, to be sure, the best proof of how fundamentally it differs from manufacture based on the division of labour, which requires “journeymen of long experience”.

Ure says of the application of “*physics*” in the FACTORY SYSTEM that one would see there

“many theorems bearing golden fruit, which had been long barren in college ground” ([p.] 37 [p. 24]).

“A horse can work at its full efficiency only 8 hours out of the 24” ([p.] 43 [p. 28]).

(And children [can work] 12?)

For the steam engine there are no such limits.

The expense per annum of a machine of 60 horsepower, worked 8 hours every day, is £1,565, which is ABOUT $\frac{1}{5}$ of the amount needed to maintain living horses for that period [Fr. ed., p. 43, Engl. ed., p. 28].

“There are many engines” (steam engines) “made by Bolton and Watt, 40 years ago, which have continued in constant work all that time with very slight repairs” ([p.] 44 [p. 29]).

[XX-1250] “Steam engines furnish the means not only of their support but of their multiplication. They create a vast demand for fuel; and, while they lend their powerful arms to drain the pits and to raise the coals, they call into employment multitudes of miners, engineers, shipbuilders, and sailors, and cause the construction of canals and railways” ([p.] 45 [p. 29]).

Ure says of the advantages of machines:

“They enable an operative to turn out a greater quantity of work than he could before—‘time’, ‘labour’” (??) “and quality of work remaining constant” ([p.] 46 [p. 30]).

This leaves out, *d’abord*, the absolute lengthening of labour time; and secondly the greater intensity of labour, AS FAR AS ITS CONTINUITY IS CONCERNED. The statement as it stands in Ure is to be taken as the norm in so far as the value of the greater amount of the product likewise remains *constant*, in contrast to the growth in the intensity of labour we have considered elsewhere.

“A steam engine needs no period of repose” ([p.] 43 [p. 28]).

“The philosophy of manufactures is well displayed in the economy of power” ([p.] 42 [p. 27]). Firstly economy in the PRIME MOTOR ([p.] 42 [p. 27] sqq.). Economy in the transmission machinery ([pp.] 55, 56, 57 [pp. 35, 36, 37]). Economy in the working machinery ([p.] 58 [p. 37] sqq.).

“Almost every *tool* is now more or less automatic, and performs its work more cheaply and with greater precision than the hand could possibly do” ([p.] 58 [p. 37]).

"The facilities resulting from *the employment of self-acting tools* have not only improved the accuracy, and accelerated the construction, of the machinery of a factory, but have also *lowered its cost* and increased its *mobility* in a remarkable degree" ([p.] 62 [p. 40] sqq.).

Mr. Ure himself admits that

"*however well-informed* the mill proprietors of Great Britain may be" they by no means understand "the operative part of their business as clearly as the commercial"^a ([p.] 66 [p. 42]).

On p. 67 he speaks of the "ignorance" of the manufacturers AS TO THE "structure of a good machine" [p. 42]. (So that they depend on the "MANAGERS".) In any case, these "MANAGERS", *unlike the "PROPRIETORS" of the FACTORIES*, are, Ure tells us,

"the soul of our factory system" ([p.] 68 [p. 43]).

Having told us previously that the factory workers gain a deep insight into the nature of the mechanics and physics EMPLOYED, Ure now admits, with regard to the PROPRIETORS:

"It may be supposed that this species of education can be most easily acquired *in the midst of the machinery itself*. But this is a mistake which experience speedily proves" ([p.] 68 [p. 43]).

He speaks quite correctly of

"the *commercial views* of the proprietor" ([p.] 67 [p. 43]) (as opposed to mechanical views) ([p.] 67 [p. 42]).

The automatic *machine for dressing warps* (see Engels [*The Condition of the Working-Class in England*, p. 511]) was a consequence of STRIKES:

"This example affords an instructive warning to workmen to beware of strikes, by proving how *surely science, at the call of capital, will defeat every unjustifiable union which the labourers may form*" ([pp.] 63-64 [pp. 40-41]).

[XX-1251] Any further citations from Part 2 of Ure's book can be entered subsequently.²²⁵

Now we want first of all to examine the question of the REPLACING OF LABOUR by machinery.

^a Marx quotes partly in French, partly in German and partly in English.—Ed.

NOTES
AND
INDEXES

NOTES

¹ Having completed the economic manuscript of 1857-58 (see present edition, vols 28 and 29), Marx embarked on a substantial economic work which, as he planned, was to encompass all aspects of life in capitalist society. The first step was the publication, in 1859, of *A Contribution to the Critique of Political Economy*. Part One. In the preface to this work, Marx sets out the plan of his ambitious project: "I examine the system of bourgeois economy in the following order: *capital, landed property, wage-labour; the State, foreign trade, world market...* The first part of the first book, dealing with Capital, comprises the following chapters: 1. The commodity; 2. Money or simple circulation; 3. Capital in general. The present part consists of the first two chapters" (see present edition, Vol. 29, p. 261).

The extant correspondence (see present edition, Vol. 40) shows that after the publication of Part One Marx intended to start immediately on the second part, dealing with capital in general. However, certain circumstances, his preoccupation with *Herr Vogt* among them, prevented him from immediately carrying out this intention. Preparatory work (drafting plans, reviewing the 1857-58 manuscript and excerpts dealing with capital—see present edition, Vol. 29—as well as making new excerpts, etc.), continued up to the summer of 1861, and in August 1861 Marx began writing. Viewed as the second part of *A Contribution to the Critique of Political Economy*, the new manuscript originally bore the same title, and on the covers of the first two notebooks he wrote the subtitle "Third Chapter. Capital in General" (see present edition, Vol. 30, p. 6). But soon the size of the manuscript grew considerably and reached 23 notebooks, 1,472 large pages in all. In the present edition it is published in vols 30-34.—5

² The section on Ravenstone begins on p. XIV—861 of the manuscript (see present edition, Vol. 32, p. 392). Preceding it in Notebook XIV and numbered "1)" is a section devoted to the anonymous pamphlet *The Source and Remedy of the National Difficulties*.—7

³ An analysis of vulgar political economy is to be found in Notebook XV, where revenue and its sources are examined (see present edition, Vol. 32, pp. 449-541). On p. XV—935, Marx refers to the "section on the vulgarians" in which he will "return" to the polemic between Proudhon and Bastiat mentioned here

only in passing (*ibid.*, p. 526). Further evidence of his intention to write a chapter specifically devoted to vulgar political economy is provided by the plan for the third part of *Capital*, which he drew up in January 1863; the eleventh, and penultimate, chapter was to have the title "Vulgar Economy" (see this volume, p. 347).—7, 255

- ⁴ By the "third chapter" or "third section" Marx means the entire third part of the investigation of "capital in general" (see Note 1). The title "Third Chapter. Capital and Profit", and also the draft plan of this chapter, are to be found on the inside front cover of Notebook XVI (originally Marx called this notebook, dated December 1861-January 1862, "Notebook *Ultimum*"). This title is also reproduced on p. XVI—973. A slightly changed and extended version of the plan for this section of his study is given by Marx on p. XVIII—1139 (see this volume, pp. 346-47).

In mid-1863, when embarking on a new, third, version of the work which was later to become *Capital*, Marx concluded that the chapters, or sections, in his study of "capital in general" would actually represent separate books that would be comprised in *Capital*. From this time on, the third chapter began to figure as Book III (later Volume III) of *Capital*.—7, 346, 380, 478

- ⁵ Marx drew attention to the need for a special examination of the relation between surplus value and profit on p. III—98 of the manuscript (see present edition, Vol. 30, p. 178).—7
- ⁶ Marx evidently meant the ratio between the *rate* of profit and the *rate* of surplus value, which is in inverse proportion to the ratio of variable to total capital. On the importance of distinguishing between the rate of surplus value and the rate of profit see p. III—124e of the manuscript (see present edition, Vol. 30, p. 229).—7, 77
- ⁷ From p. 1029 on, Notebook XVII continues the text begun in Notebook XV (see Note 53).—8
- ⁸ The "Episode" is to be found on pp. XVII—1038-1065a and XVIII—1068-1074 (see this volume, pp. 171-222 and 226-38). In the draft plan for the third section (the future Volume III) of *Capital* it has a somewhat different title, namely "Reflux Movements of Money in the Process of Capitalist Production as a Whole" (see this volume, pp. 346-47).—8

- ⁹ The cover of Notebook XVIII has not survived. The notes given below were made on the inside front cover of Notebook XIX of the manuscript of 1861-63. Besides the table of contents there are references here to *Factories. Returns* for various years.

The front cover of Notebook XIX is dated: "Jan. 1863".—8, 387

- ¹⁰ In March 1862 Marx interrupted his successive analysis of relative surplus value and embarked on a detailed examination of bourgeois theories of surplus value. As a result, part of Notebook V was not filled in. In late 1862-early 1863 Marx returned to his analysis of the use of machinery in capitalist production and made records in notebooks V, XIX and XX, as is testified by his letters to Engels of January 24 and 28, 1863 (see present edition, Vol. 41, pp. 446 and 449-51). Part of Notebook V has therefore been included in this volume in accordance with the time it was written. The text on pp. 372-501 of this volume thus represents the continuation of subsection "γ) Machinery. Utilisation of the Forces of Nature and of Science" of section "3) Relative Surplus Value", the beginning of which is published in Volume 30 of the present edition.

Marx did not write the table of contents for Notebook V on the inside front cover, which he did for other notebooks of the manuscript of 1861-63 beginning with Notebook VI.—8, 372, 489

- ¹¹ The notes given below were made on the inside front cover of Notebook XX of the manuscript of 1861-63.

On the front cover of Notebook XX Marx wrote: "*März. April. Mai. 1863*", the last two months being inserted in retrospect.—8

- ¹² In the economic manuscript of 1857-58 (see present edition, Vol. 28), and also in notebooks I, II and XI of the present manuscript (see present edition, vols 30 and 31), Marx described mercantile and money-dealing capitals as being, on the one hand, the first historical forms of capital and, on the other hand, derivative forms of capital in bourgeois society. Marx drew attention to the need to go into greater detail on the role of trade in the development of capitalist production on p. II—71 of the manuscript (see present edition, Vol. 30, p. 136).—9
- ¹³ The text on pp. 9-25 of this volume reproduces in part and with some alterations a number of passages from Marx's economic manuscript of 1857-58 (see present edition, Vol. 29, pp. 226-36).—9
- ¹⁴ The term "auxiliary capital" was used by Richard Jones, who, in Marx's words, understood it to mean "the part of constant capital which is not made up of raw material" (see this volume, p. 357). Cf. p. V—196 of the manuscript, where Marx also uses the said term (present edition, Vol. 30, p. 327).—9
- ¹⁵ Above, on p. XV—939 of the manuscript, Marx writes on this score: "The usurer in all pre-capitalist modes of production has a revolutionary impact only in the *political* sense, in that he destroys and wrecks the forms of property whose constant reproduction in the same form constitutes the stable basis of the political structure" (see present edition, Vol. 32, p. 535).—10
- ¹⁶ Page XV—941 of the manuscript has the note, "*England. 17th century. The polemics are no longer directed against usury as such, but against the amount of interest*" (see present edition, Vol. 32, p. 537).—11
- ¹⁷ "Profit upon expropriation" (or "profit upon alienation") is a term which was used in writings on political economy before Marx. On p. VI—221 he writes that "*profit upon alienation ... arises ... from the goods being sold above their value*" (see present edition, Vol. 30, p. 351).—11, 35, 67, 241, 351
- ¹⁸ There follows the end of the sentence crossed out by Marx: "before it takes on its other functions, before capitalist production, and therefore before capital itself comes to be the all-dominant relation of production, before its fundamental form is developed in which it constitutes the basis of modern society".—12
- ¹⁹ Cf. *Outlines of the Critique of Political Economy* (Rough Draft of 1857-58) (present edition, Vol. 29, p. 233) and also *Capital*, Vol. III, chapters XX and XXXVI (present edition, Vol. 37).—12, 20
- ²⁰ In the original there follows the sentence crossed out by Marx: "What he receives for his money therefore depends neither on its value nor on the value of the commodities, since the *general measure of valorisation* and thus profit, the *average rate of profit*, come into being only on the foundation of capitalist production itself."—12

- 21 The dialectics of alienation and appropriation in the process by which the bourgeois mode of production emerges and develops were discussed in detail by Marx back in *Outlines of the Critique of Political Economy* (Rough Draft of 1857-58) notably in the section headed "Forms Preceding Capitalist Production" (see present edition, Vol. 28, pp. 399-439).—13
- 22 Cf. the exposition below on pp. 17-18 and the corresponding passages in *Capital*, Vol. III, Chapter XXXVI (present edition, Vol. 37).—17
- 23 In the manuscript, the word "principalities" (*Provinzen*) was crossed out and "lands" (*Ländern*) written above it. On the exploitation of peasants in the "Romanian principalities" see *Capital*, Vol. I, Chapter X (present edition, Vol. 35).—17
- 24 Here Marx quotes from *Recherches sur la nature et les causes de la richesse des nations*, Paris, 1802, Garnier's translation of Adam Smith's work. Marx made excerpts from it in Paris in the spring of 1844. In the present volume all quotations from Garnier's translation are given according to the English edition (A. Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, by J. R. MacCulloch. In four volumes. Edinburgh, London, 1828), with the pages indicated in brackets, and Marx's wording respected. Marx widely used the 1828 edition when working on the manuscript of 1861-63.—19
- 25 Marx apparently had in mind this passage when he mentioned Steuart on p. IV—174 of the manuscript (see present edition, Vol. 30, p. 298).—20
- 26 On the term "free hands" coined by James Steuart see present edition, Vol. 28, p. 395, Vol. 30, pp. 193, 295, Vol. 32, p. 180, and also *Capital*, Vol. III, Chapter XLVII (present edition, Vol. 37).—21
- 27 Marx is not quite accurate here. Thomas Manley was the author not of the tract *Interest of Money Mistaken*, published anonymously in London in 1668, but of another tract which appeared in London in 1669, under the heading *Usury at 6 per cent Examined and Found Unjustly Charged by Sir Thos. Culpeper and J. C.* Since below Marx quotes Child from the French edition indicated, which includes several of his works, the present volume has the titles and page numbers of the English originals in square brackets.—22
- 28 Below in the original mistakes were made when converting pence into shillings.—23
- 29 There follows an incomplete sentence which concludes p. 950b: "If wages fell to $\frac{1}{3}$, say from $\frac{2}{5}$ s. ..."—24
- 30 The magnitude $\frac{2}{5}$, or 40 per cent, does not reflect the ratio between the amount of profit and the price of the product, but the approximate ratio between the profit and the outlay on the product's manufacture. In actual fact the former ratio is $\frac{4}{15}$, or $\frac{26}{3}$ per cent.—26
- 31 The price of the product in this case is the same as in II, but not in I a).—26
- 32 Marx is referring to the value added by living labour.—29, 128
- 33 Marx is referring to case I a).—30
- 34 The reference is to the value added by living labour, both paid and unpaid.—30
- 35 In the table below, several figures which Marx gives twice are reproduced only once.—30

- ³⁶ Page XV—956 is the direct continuation of page XV—953, and page XV—954 is the direct continuation of page XV—956.—30, 33
- ³⁷ Marx means the value of labour power, or of labour capacity. He deliberately drew a distinction between labour and labour power (labour capacity) back in the economic manuscript of 1857-58 (see present edition, vols 28 and 29). However, in this manuscript, which was not intended for publication, the term “value of labour” is often used for the sake of brevity in the sense of “value of labour capacity”.—32
- ³⁸ Up to here, according to Marx’s supposition, 100s. represented 5 M and not 10 M, so that 50s. represent not 5 M, but $2\frac{1}{2}$ M.—33
- ³⁹ See D. Ricardo, *On the Principles of Political Economy, and Taxation*, London, 1821, chapters I, V, VI, and XXI. This thesis of Ricardo’s is examined by Marx in greater detail in notebooks XII and XIII of the manuscript (see present edition, vols 31 and 32).—33
- ⁴⁰ In the previous exposition Marx assumed throughout that £100 commanded 5 men.—34
- ⁴¹ Marx examines case III.—35
- ⁴² Page 957 is the direct continuation of page 955.—36
- ⁴³ In this manuscript Marx often refers to “wage labour” or “labour” pure and simple when he means hired labour power (see also Note 36).—39, 50, 175, 176, 179, 198, 204, 206, 234, 262
- ⁴⁴ The concept “capital in general” is central to the economic manuscript of 1857-58 (see present edition, vols 28 and 29) and is used repeatedly in Marx’s correspondence (see present edition, Vol. 40, pp. 287, 298-303). On the whole, Marx viewed this manuscript as representing a stage in his efforts to work out the substance of the said concept (see Note 1).—41
- ⁴⁵ Cf. Matthew 6:19: “Lay not up for yourselves treasures upon earth, where moth and rust doth corrupt, and where thieves break through and steal.”—44
- ⁴⁶ These questions are examined in detail by Marx in *Capital*, Volume III, Chapter XXXV (see present edition, Vol. 37).—46
- ⁴⁷ Marx means the case when the cotton manufacturer’s capital amounts to £1,000 and turns over four times a year.—52
- ⁴⁸ In the manuscript the annual production of each manufacturer is given as 40,000 yards. This implies that their capitals turn over several times a year, whereas all the other figures in this example show that each capital turns over just once a year, producing 4,000 yards. If we assume that the manufacturer’s capital (£900) turns over four times a year, in a year it will produce 36,000 yards. In this case each merchant could buy and sell the commodities produced by four manufacturers.—53
- ⁴⁹ See notebooks IX and X of the manuscript (present edition, Vol. 31, pp. 130-200, 204-40).—61
- ⁵⁰ Cf. *Capital*, Volume III, Chapter XVI (present edition, Vol. 37).—62
- ⁵¹ Cf. *Capital*, Volume III, Chapter XVI (present edition, Vol. 37).—64
- ⁵² Marx dwelled on this question on pp. X—450-454, 470-473, XI—529-560, XIV—788-789 of the manuscript of 1861-63 (see present edition, Vol. 31, pp. 261-71, 301-05, 401-57; Vol. 32, pp. 270-73).—67

- ⁵³ This is the end of Notebook XV of the manuscript of 1861-63. There follows a note by Marx: "Continued in Notebook XVII." The single front cover of notebooks XVII and XVIII (p. 1066) carries the note: "*Beginning on page 1029 continuation of Notebook XV*" (see also Note 127).—68
- ⁵⁴ Chapter, or Section, II of Marx's work was to have been devoted to examining the circulation process of capital (see the draft plan of 1861, Section II, "Circulation Process of Capital", present edition, Vol. 29, pp. 514-16). The content of this section was largely expounded back in *Outlines of the Critique of Political Economy* (Rough Draft of 1857-58) (see present edition, Vol. 28, pp. 329-537, Vol. 29, pp. 7-128).—69, 89
- ⁵⁵ On the place accorded to an examination of landed property in the plan for Marx's economic studies see Note I and also present edition, Vol. 40, p. 270.—69
- ⁵⁶ Marx is referring to the proposition: "Profits, indeed, imply proportions; and the rate of profits had always justly been estimated by a per-centage upon the value of the advances" (Th. R. Malthus, *Definitions in Political Economy...*, London, 1827, p. 30).—70, 100
- ⁵⁷ In his examination of usury in *De republica (Politica)*, I, 8-10, Aristotle concludes that the generation of money by money, or interest, is the sphere of acquisition most offensive to human nature. Marx refers to this statement by Aristotle in the original text of *A Contribution to the Critique of Political Economy* (see present edition, Vol. 29, p. 488) and also in *Capital*, Volume I, Chapter V (see present edition, Vol. 35).—71
- ⁵⁸ Marx is referring to the following statement: "Wealth like labour and through labour bears fruit annually... This fruit is the revenue flowing out of capital" (J. C. L. Simonde de Sismondi, *Nouveaux principes d'économie politique*, Vol. I, Paris, 1827, pp. 81-82). He subsequently quoted it in *Capital*, Volume I, Chapter XXIII (see present edition, Vol. 35).—71
- ⁵⁹ Marx wrote about the greed for alien labour time, which determines the behaviour of the capitalist, and about other questions connected with this when he examined absolute surplus value in Notebook III of this manuscript (see present edition, Vol. 30).—71
- ⁶⁰ Marx criticised the erroneous arguments on interest and compound interest in Richard Price's works *An Appeal to the Public...*, London, 1772, and *Observations on Reversionary Payments...*, London, 1772, and also William Pitt's fantasy engendered by Price's ideas, back in the manuscript of 1857-58 (see present edition, Vol. 29, pp. 218-19). When examining the question of compound interest on p. XIV—853 of the manuscript he noted: "We shall return to Price's fantasy in the section on revenue and its sources" (see present edition, Vol. 32, p. 376). However, in Notebook XV, which contains a summary of the views of vulgar bourgeois political economists on revenue and its sources (see *ibid.*) there is no mention of "Price's fantasy". Marx did not resume his criticism of Price on this question until p. XVIII—1066 of the manuscript of 1861-63 (see this volume, pp. 222-24).
Subsequently a critical analysis of Price's views was given in *Capital*, Vol. III, Chapter XXIV (see present edition, Vol. 37).—71, 222
- ⁶¹ In Notebook XV of the manuscript (see present edition, Vol. 32, pp. 531-40) Marx examines in detail Luther's views on interest as expounded in the latter's

- book *An die Pfarrherrn wider den Wucher zu predigen. Vermanung*, Wittemberg, 1540.—72
- 62 The reference is to A. R. J. Turgot, *Réflexions sur la formation et la distribution des richesses*. In *Oeuvres...*, Vol. I, Paris, 1844, pp. 39 and 57. For a description of Turgot's views on the profit yielded by capital see this manuscript, pp. VI—233 and XV—906 (present edition, Vol. 30, p. 367, Vol. 32, p. 476).—72
- 63 Cf. the draft plan for the section on the production process of capital, p. XVIII—1140 of the manuscript (see this volume, p. 347), where under point "6) Reconversion of surplus value into capital..." Marx notes the need to examine Wakefield's theory of colonisation. He later devoted Chapter XXXIII of Volume I of *Capital* to an analysis of the theory (see present edition, Vol. 35).—72
- 64 Ramsay's views are examined in detail in notebooks I and III of the manuscript of 1861-63 (see present edition, Vol. 30), those of Malthus in Notebook III (*ibid.*, Vol. 32), of Senior in notebooks III and XX (*ibid.*, vols 30, 34) and of Torrens in notebooks I and XIV (*ibid.*, vols 30, 32).—73
- 65 On Torrens see Note 64.—74
- 66 In Notebook III of this manuscript Marx examined Senior's views as an "example illustrating the political economists' failure to understand surplus labour and surplus value" (see present edition, Vol. 30, pp. 179, 199-203).—74
- 67 When working on this manuscript, Marx was guided in his study of capital by the plan he had devised when writing the manuscript of 1857-58 and which he set out in a letter to Engels of April 2, 1858: "*Capital* falls into 4 sections. a) *Capital en général*... b) *Competition*, or the interaction of many capitals. c) *Credit*, where capital, as against individual capitals, is shown to be a universal element. d) *Share capital* as the most perfected form (turning into communism) together with all its contradictions" (see present edition, Vol. 40, p. 298).—75, 88, 94, 101, 111, 113, 170, 179, 184, 212, 280
- 68 Marx deals with Malthus' polemic against Ricardo on this issue on pp. XIII—761-762 of the manuscript of 1861-63 (see present edition, Vol. 32, pp. 222-25).—76
- 69 Marx traced the main directions in which Ricardo's theory of value was vulgarised in the works of James Mill and MacCulloch in Notebook XIV of the manuscript; see especially pp. XIV—844-848 (present edition, Vol. 32, pp. 359-67).—76
- 70 Marx deals with Say's views on value on pp. XIV—847-850 of the manuscript (see present edition, Vol. 32, pp. 365-69).—76
- 71 In the draft plan for the chapter "Capital and Profit" which Marx drew up on p. XVIII—1139, the eleventh (penultimate) item reads "Vulgar economy" (see this volume, p. 347).—76
- 72 Marx is referring to a notebook which is not extant and in which between 1844 and 1847 he made excerpts from Antoine Cherbuliez's work *Richesse ou pauvreté*, Paris, 1841 (see also Note 201). Marx deals with Cherbuliez's views on this question on pp. XVIII—1106-1112 (see this volume, pp. 292-304).—78
- 73 Marx notes the need for a detailed analysis of the costs of production on p. II—88 of the manuscript (see present edition, Vol. 30, p. 163).—78

- ⁷⁴ Marx is referring to pp. I—1-13 of the manuscript of 1861-63 (see present edition, Vol. 30, pp. 9-32).—78
- ⁷⁵ Say's and Jones' views on this question were not discussed in the manuscript; Torrens' position is analysed on pp. XIII—783-788 (see present edition, Vol. 32, pp. 262-70).—82
- ⁷⁶ The reference is possibly to the propositions advanced in the works by J. B. Say, *Traité d'économie politique...*, 4th edition, Vol. 2, Paris, 1819, pp. 491 and 507-08, and H. Storch, *Cours d'économie politique*, Vol. 2, St. Petersburg, 1815, pp. 252-60.—82
- ⁷⁷ In all probability, Marx was referring to what follows under point d) when he wrote on p. II—90: "We have investigated the changes in constant capital elsewhere (in dealing with profit)" (see present edition, Vol. 30, p. 165). See also p. II—93 (present edition, Vol. 30, pp. 168-69). Evidently, the final pages of Notebook II were filled in by Marx after he had completed Notebook XVI, which is dated December 1861-January 1862.—84
- ⁷⁸ The part of the sentence enclosed in square brackets was crossed out by Marx, probably by mistake.—88
- ⁷⁹ The example to which Marx refers is given on p. V—205 of the manuscript of 1861-63 (see present edition, Vol. 30, p. 339).—89
- ⁸⁰ The original has "6a", which is evidently a mistake.—91
- ⁸¹ In this connection Marx referred to William Blake's *Observations on the Effects Produced by the Expenditure of Government...* also on p. XII—688 of the manuscript (see present edition, Vol. 32, p. 93). He reproduced the pertinent passages from the said work back in the manuscript of 1857-58 (see present edition, Vol. 29, pp. 168-69).—92
- ⁸² On p. XI—555 of the manuscript Marx quoted a number of pages from Adam Smith's *Inquiry...* (according to the French edition, *Recherches sur la nature et les causes de la richesse des nations*, Vol. I, Paris, 1802) dealing with the causes of the fall in the rate of profit; he went into greater detail about Smith's position on this issue on pp. XIII—673, 693 (see present edition, Vol. 32, pp. 72-73, 101-02).—92
- ⁸³ Cf. this statement by Marx on competition and its reflection in bourgeois political economy with the similar passage on p. IV—21 of the manuscript of 1857-58 (present edition, Vol. 28, pp. 340-41).—102
- ⁸⁴ Marx comments on this statement by Smith on p. VI—260 of the manuscript of 1861-63 (see present edition, Vol. 30, pp. 395-96).—103
- ⁸⁵ The text on p. 999 is the direct continuation of that on p. 994. The sheet which makes up pp. 995-998 (they are twice the size of the other pages in Notebook XVI) was evidently inserted into the notebook at a later date, following which Marx numbered all the pages. The text on the inserted pages is published immediately before the text marked in the margins as "*Continuation of the last page of the inserted sheet*", and begins on p. XVI—1009 (see this volume, p. 129).—103
- ⁸⁶ Marx deals in detail with the views of Malthus, Torrens and Ramsay on the said questions on pp. XIII—753-758, 760-764, XIV—782-788, and XVIII—1087-1090, of the manuscript respectively (see present edition, Vol. 32, pp. 209-18, 221-27, 258-71, and also this volume, pp. 256-60).—103
- ⁸⁷ Smith's statement is quoted by Richard Jones in *An Essay on the Distribution of*

Wealth..., London, 1831, p. 238. Marx quotes this passage from Jones' book on p. XVIII—1128 of the manuscript of 1861-63 (see this volume, p. 330).—104

⁸⁸ Marx gives the pertinent excerpt from Dombasle's work *Annales agricoles...*, Vol. 4, Paris, 1828, on p. X—449 of the manuscript (see present edition, Vol. 31, pp. 259-60).—104

⁸⁹ In the original, instead of Jones, Marx—apparently by mistake—names here the English agricultural chemist James Johnston whom he subsequently quotes in chapters XXXVII and XXXIX of Volume III of *Capital*. In Chapter XLV he refers to Dombasle and Jones in connection with the progress of capitalist agriculture and the growth in the organic composition of capital deriving from it (see present edition, Vol. 37).

Marx analyses in detail Richard Jones' theory of rent on pp. XVIII—1121-1130 of the manuscript (see this volume, pp. 320-32).—104

⁹⁰ The reference is to J. Fullarton, *On the Regulation of Currencies...*, London, 1844, pp. 161-66. Marx examines Fullarton's views on crises in the manuscript of 1857-58 and on p. XIII—707 of the manuscript of 1861-63 (see present edition, Vol. 29, p. 225, Vol. 32, p. 129).—105, 112

⁹¹ Marx is referring to the section dealing with relative surplus value, which constitutes part of Notebook III and notebooks IV and V of the economic manuscript of 1861-63 (see present edition, Vol. 30).—107

⁹² According to the example given, the expenditure of living labour in India equals $400+80=480$. The proportion of surplus labour time in the total labour time equals $\frac{80}{480}=\frac{1}{6}$; this therefore represents the possible proportion of the non-productive population.

The expenditure of living labour in England is equal to $100+50=150$. The proportion of surplus labour time, and thus the possible proportion of the non-productive population, is $\frac{50}{150}=\frac{1}{3}$, or twice as much as in India.—107

⁹³ Cf. the text below on pp. 108-10 with the proposition formulated by Marx on pp. IV—138-139 (present edition, Vol. 30, p. 247) on the proportion in which a reduction of necessary labour time causes an increase in surplus labour time and its tendencies towards change (see present edition, Vol. 30, Note 185).—108

⁹⁴ In his manuscript of 1857-58 Marx quoted the pertinent passages from Sismondi as found in *Nouveaux principes d'économie politique...*, Vol. 1, Paris, 1827, pp. 94, 95, 97-98 (see present edition, Vol. 29, pp. 35-36).—108

⁹⁵ Cf. the corresponding passage in the manuscript of 1857-58 (present edition, Vol. 29, pp. 92-93).—108

⁹⁶ Marx analyses Smith's views on the ratio of profit to wages on pp. XI—555-557 (see present edition, Vol. 31, pp. 449-52).—108

⁹⁷ Marx analyses Ricardo's views on the ratio of wages to profit in notebooks XII and XIII, pp. 661-694 (see present edition, Vol. 32, pp. 51-103).—108

⁹⁸ Marx criticised Carey's position on this question back in the manuscript of 1857-58, pp. III—2, IV—1, VI—1, VI—27, VII—18 (see present edition, Vol. 28, pp. 6-8, 296-98, 478, Vol. 29, pp. 29, 138-39).—109

⁹⁹ Marx quotes the pertinent statement by Ricardo on p. XIII—670 of the manuscript (see present edition, Vol. 32, pp. 67-68).—109

- ¹⁰⁰ Marx is referring to the sections "Relative Surplus Value" and "Capital and Profit" of the manuscript contained in notebooks III-V and XVI (see present edition, Vol. 30, and this volume, pp. 69-153).—109
- ¹⁰¹ Cf. pp. XIII—731-732 of the manuscript (present edition, Vol. 32, pp. 172-73).—112, 113
- ¹⁰² Cf. pp. XIII—775-776 of the manuscript of 1861-63 (present edition, Vol. 32, p. 249).—113
- ¹⁰³ Cf. the critique of Chalmers' views on p. IX—416 and of those of Malthus on pp. XIII—767-773 of the manuscript (present edition, Vol. 31, pp. 195-96, Vol. 32, pp. 232-45).—114
- ¹⁰⁴ Cf. pp. XIII—773-776 of the manuscript of 1861-63 (present edition, Vol. 32, pp. 243-50).—114
- ¹⁰⁵ What follows in the manuscript is crossed out: " $=1/2; 3/4=2/4; 3/4, =2/3$, by $2/9$. Consequently the surplus value should grow only by $2/3$ and not treble. $120/3=40$. $2/3$ of $120=80$. $120+2/3 \times 120+80=200$. $200/600=1/3=33\frac{1}{3}\%$ Ss'. But $200/1,200=2/12=1/6$. $3/4$ of 20C."—116
- ¹⁰⁶ Marx is referring to section "(3) Relative Surplus Value", subsection "(γ) Machinery, Utilisation of the Forces of Nature and of Science" of the manuscript, notably pp. V—201-208 (see present edition, Vol. 30, pp. 334-43).—123
- ¹⁰⁷ Here and below Marx assumes that the annual wear and tear of the machinery amounts to 50, not to 37, thalers. Then, the not-consumed part of the advanced capital is equal at the end of the first year to $370-50=320$ (not $370-37=333$), and neither is it 300 thalers, as Marx assumes here.—126
- ¹⁰⁸ What follows in the manuscript is crossed out: "or 80 on 200. The total capital advanced—280, of which 80 go on wages. Previously 200 went on constant capital and 400 on wages—600 in total. In the first case, the proportion of capital expended on labour to the total capital is $80/280$. In the second, $400/600$. In the first [case]— $2/7$, in the second— $2/3$; consequently, not as it appeared originally, $2/15$ in the first case and $2/3$ in the second; then the difference was between $6/15$ and $30/45$, or 5 times greater in the second case than in the first; [in actual fact] in the second [the change is] from $2/7$ to $2/3$, or from $6/21$ to $14/21$, i.e. only $2\frac{1}{3}$ times greater [than in the first].
"Two things follow from this."—126
- ¹⁰⁹ Marx means section "(3) Relative Surplus Value" of Part I, "The Production Process of Capital" (see present edition, Vol. 30, pp. 233-346).—128
- ¹¹⁰ In the margins of p. XVI—998, Marx made the following addition, which has only survived in part and cannot therefore be placed with certainty at a definite point in the text: "... that the sum of surplus value not only does not fall, but rises [...] to the actual rate [of surplus value] depends on the number of workers employed, that with the use of machinery, due to the action of the laws inherent in machine production, the more productive application [...], the better division and combination of labour due to fixed capital, grows."—129
- ¹¹¹ With the aid of the new means of production, the workers produce in one hour of labour not $8/10$ of a thaler, as previously, but $3/5$ greater than this amount, i.e. $8/10+3/5 \times 8/10=17/25$ thalers; in 6 hours of labour, therefore, $7\frac{17}{25}$ thalers, which is a little different from the amount of 8 thalers given by Marx.—130

- ¹¹² Marx cites and analyses these statements by Smith on pp. VI—261, 262 of the manuscript (see present edition, Vol. 30, pp. 397-98).—130
- ¹¹³ Marx cites and comments on the pertinent statement by Wayland on pp. IV—167, 168 of the manuscript (see present edition, Vol. 30, p. 290).—130
- ¹¹⁴ Marx means that in the consumption of a worker the proportion of agricultural products (the organic composition of capital in agriculture being lower than in industry) is greater than that of industrial products.—131
- ¹¹⁵ The calculations below contain arithmetical errors which do not, however, affect the course of Marx's reasoning.—132
- ¹¹⁶ In the original there follow collateral calculations which take about a quarter of p. 1012.—133
- ¹¹⁷ In Notebook V of the manuscript of 1861-63, examining the process of production of relative surplus value, Marx gives numerous examples of various ways of increasing productive power (see in particular p. 200 of the manuscript, present edition, Vol. 30, pp. 332-33).—139
- ¹¹⁸ Cf. p. IV—166 of the manuscript of 1861-63 (present edition, Vol. 30, p. 288).—140
- ¹¹⁹ Cf. pp. XIII—726, 727 of the manuscript (present edition, Vol. 32, p. 165).—144
- ¹²⁰ The lower half of p. 1021 of the manuscript (last page of Notebook XVI) was not filled in. Its reverse (p. 1021a) carries a short draft of a table of contents for several pages of this notebook:
"Ricardo and school p. 977
Wakefield p. 975.
Tendency of the rate of profit to fall.
Average profit. 982.
Competition 976.
Capitalist production. 979."—145
- ¹²¹ Marx is referring to subsection "γ) Exchange with Labour. Labour Process. Valorisation Process" of section "I) Transformation of Money into Capital" as expounded in notebooks I-II of the manuscript (see present edition, Vol. 30, pp. 33-42).—146
- ¹²² Marx provides a critique of Carey on this question in *Outlines of the Critique of Political Economy* (Rough Draft of 1857-58) (see present edition, Vol. 28, pp. 499-502).—151
- ¹²³ The heading for this part of the manuscript had been preceded by another which was deleted: "*Increase in Absolute Surplus Labour Time by Means of Machinery and Fixed Capital.*"—151
- ¹²⁴ Marx gives an example of this on p. II—92 of the manuscript of 1861-63 (see present edition, Vol. 30, p. 168). Later, in Volume I of *Capital*, Chapter XV, Section 9, these problems were examined in detail (see present edition, Vol. 35).
 By the "battle bulletins" Marx means *Reports of the Inspectors of Factories to Her Majesty's Principal Secretary...*—153
- ¹²⁵ Cf. pp. III—124f and V—201 of the manuscript, where Marx gives pertinent examples from Babbage (present edition, Vol. 30, pp. 229, 334).—153

- 126 Marx made an arithmetical error in his calculation. Cf. Volume III of *Capital*, where the example in question is reproduced, in a corrected form, in Chapter V, point I (see present edition, Vol. 37).—153
- 127 On p. XVII—1029 there is a note by Marx: "Continuation of Notebook XV." At the end of p. XV—973, the final one of this notebook, Marx wrote: "Continued in Notebook XVII." See Note 53.—154
- 128 Cf. *Capital*, Volume III, Chapter XVII (present edition, Vol. 37).—156
- 129 Cf. the paragraph below with *Capital*, Volume III, Chapter XIX (present edition, Vol. 37).—170
- 130 Marx means labour capacity, labour power. See Note 36.—172
- 131 Cf. Marx's analysis of Tooke's views on this question in *Capital*, Volume III, Chapter XXVIII (present edition, Vol. 37).—172
- 132 The reference is to the section "*Digression. Tableau économique, according to Quesnay*" in Notebook X of the manuscript (see present edition, Vol. 31).—173
- 133 Marx gives the nearest whole. More exactly, at an annual rate of accumulation of 5 per cent, the retailer's capital will amount to 100, 105, $110\frac{1}{4}$, $115\frac{61}{80}$, etc.—179, 181
- 134 In the margins opposite this paragraph Marx wrote "NB" and below "This calculation is wrong". He made similar calculations on p. 1047 (see this volume, p. 186), following which he apparently crossed out the words "This calculation is wrong" and added "See p. 1047".—181
- 135 See, in particular, pp. VI—272, VII—273-299, IX—379-419 and XIII—698-703 of the manuscript of 1861-63 (present edition, Vol. 30, pp. 411-51; Vol. 31, pp. 130-200; Vol. 32, pp. 111-22).—189
- 136 Sphere I in the present manuscript refers to the production of means of subsistence (objects of consumption), and sphere II to the production of means of production, or elements of constant capital. Accordingly, the capitalists in sphere I are denoted as class I and those in sphere II as class II. Later, in Volume II of *Capital* (see present edition, Vol. 36), Engels, basing himself on the final draft of Volume II, denoted the production of means of production as sphere I and the production of means of subsistence as sphere II.—200
- 137 In his previous calculations, Marx assumed that the ratio of variable to constant capital in this sphere was 1:5, and not 1:6, as he now assumes.—201
- 138 On the events which Marx describes here as "Manchester distress", see also his articles "Workers' Distress in England" and "Garibaldi Meetings.—The Distressed Condition of Cotton Workers", written around September 20 and 30, 1862, respectively (present edition, Vol. 19, pp. 239-42, 245-47); they are also mentioned in his letter to Engels of November 17, 1862 (*ibid.*, Vol. 41, p. 430).—209
- 139 Marx quotes the pertinent excerpt from *The Morning Star* on pp. XII—611, 612 of the manuscript of 1861-63 (see present edition, Vol. 31, p. 538).—209
- 140 Marx reproduces the explanation of the term "dealer" as given by Germain Garnier, who translated Smith's work into French.—214
- 141 A critique of Smith's views of *natural price* is given on pp. VI—263-265 of the manuscript of 1861-63 (see present edition, Vol. 30, pp. 399-403).—214

- 142 The *currency principle*—one of the varieties of the quantitative theory of money, which emerged in England in the 1840s. Marx deals with the theoretical views of the Currency School in *Capital*, Vol. III, Chapter XXXIV (see present edition, Vol. 37).—215
- 143 What Marx means by sphere A or class A hereinafter is class I of social production, the production of means of subsistence.—219
- 144 There follows an incomplete calculation which Marx crossed out with three vertical lines: "And this is the entire capital he needs in this LINE during the year. 10% of 510 makes £51 a year and £10¹/₅ for ¹/₅ year. For £510 the SHOP therefore receives goods to the tune of £520¹/₅. And for 1,020 it receives goods to the tune of 1,040²/₅. With this sum it makes purchases from the WHOLESALER every fifth of a year. For the 20 SHOPKEEPERS which exist for every WHOLESALER this makes 20×£520¹/₅=£10,404, and for 100 SHOPKEEPERS per year ¹/₅ year=52,020. This means that for ⁵/₅, or 1 year,="—221
- 145 Page 1066 opens Notebook XVIII, which Marx filled in in January 1863.—222
- 146 In order to prevent a growth in the national debt, William Pitt the Younger, then British Prime Minister, introduced in 1786 a sinking fund, i.e., a scheme whereby a certain proportion of public revenues was used every year to purchase state promissory notes. However, the war with France (1793-1802) was accompanied by a sharp increase in the national debt. The imbalance between revenues and expenditure led first to a limit on the issue of banknotes, and in 1797 to the enactment of a law relieving the Bank of England of the obligation to accept banknotes. Marx dealt in detail with the laws on the sinking fund enacted under Pitt in the article "Mr. Disraeli's Budget" published in the *New-York Daily Tribune*, No. 5318, May 7, 1858 (see present edition, Vol. 15, pp. 512-14).—222
- 147 The reference is to Pitt's speech of February 17, 1792. It was reproduced in part in James Maitland Lauderdale's book *Recherches sur la nature et l'origine de la richesse publique...*, Paris, 1808, pp. 176-79, which Marx quotes below.—223
- 148 The reference is to Lauderdale's book from which Marx familiarised himself with Pitt's speech of February 17, 1792 (see Note 147).—223
- 149 Marx planned to devote one of the books of his economic work specifically to foreign trade (see Note 1).—229
- 150 Ricardo advanced this hypothesis in chapters XIII and XXVIII of his book *On the Principles of Political Economy, and Taxation*. Here Marx, too, adheres to this hypothesis (see, for example, this volume, p. 193), considering it to be correct (see its substantiation in *Capital*, Volume II, Chapter XX, point XII, "The Reproduction of the Money Material"—present edition, Vol. 36). At the same time, Marx noted Ricardo's extreme inconsistency on this issue back in his work *A Contribution to the Critique of Political Economy*. Part One (see present edition, Vol. 29, pp. 401-02).—231
- 151 In the manuscript of 1861-63 Marx uses the term "cost price" ("Kostenpreis" or "Kostpreis") in three different meanings: 1) in the sense of the price of production, as here; 2) in the sense of the "immanent cost of production" of the commodity, which is identical to the value of the commodity (see present edition, Vol. 30, p. 401); and 3) in the sense of the cost of production.—232
- 152 The excerpts from Newman which Marx gives below contain minor digressions

- from the original. Marx quotes Newman according to notebooks XVI and XVII of excerpts compiled in London in 1851-52.—239
- 153 In this manuscript Marx holds that the “real movement of capital” (it can be observed in competition, credit, share capital and other more concrete forms of interaction between numerous capitals) should be examined following a clarification of what is meant by the general nature of capital as expressed by the concept “capital in general” (see also notes 1 and 44).—242
- 154 Below Marx reproduces some of Corbet’s propositions, partly verbatim and partly in his own summarised rendering, according to Notebook XVI of excerpts compiled in London in 1851.—242
- 155 The *American Civil War* (1861-65) led, among other things, to a blockade of US cotton exports to Britain, bringing about a crisis in the country’s textile industry. Many factories were closed down and their workers sacked. The price of cotton rose, bringing with it unbridled speculation on the Liverpool cotton market. Marx later returned to this in *Capital*, Volume III, Chapter VI, point III (see present edition, Vol. 37).—249
- 156 The text on pp. XVIII—1084-1157 belongs mainly to the *Theories of Surplus Value* (see present edition, vols 30-32).—253
- 157 The passages from Hodgskin’s work which Marx gives below are presented partly in a summarised form according to Notebook IX of excerpts compiled in London in 1851.—253
- 158 Below Marx partly quotes and partly interprets the pertinent passages from Hodgskin’s anonymously published work *Labour Defended...*, London, 1825, according to Notebook XI of excerpts compiled in London in 1851.—253
- 159 Marx is referring to Notebook IX of excerpts which he compiled in London in 1851. Page 47 of this notebook carries the pertinent excerpts from pp. 252-56 of Hodgskin’s book *Popular Political Economy*.—255
- 160 Here Marx returns to an analysis of Ramsay’s thesis which he criticised earlier, on pp. II—72-74 of the manuscript (see present edition, Vol. 30, pp. 137-42).
The passages from Ramsay below are given by Marx partly in a summarised form according to Notebook IX of excerpts compiled in London in 1851.—256
- 161 The term “average price” (Durchschnittspreis) is used here by Marx in the sense of price of production, i.e., the costs of production plus average profit, since he is referring to the “average market price over a long period, or the central point towards which the market price gravitates”, as he explains on p. XII—605 (present edition, Vol. 31, p. 530). Marx first used this term on p. VI—264 (*ibid.*, Vol. 30, p. 400). In the present manuscript, the said term is used as a synonym for the terms “cost price” and “price of production”. See also Note 151.—259
- 162 Marx expands on Mill’s example of the “wine in the cellar” on p. VIII—341 and also on pp. XIV—792, 845 of the manuscript (see present edition, Vol. 31, pp. 70-71, Vol. 32, pp. 277, 362).—259
- 163 The reference is to the “exceptions” formulated by Ricardo on the basis of the law which stipulates that value is determined by labour time. Marx goes into greater detail on this on pp. XI—528-542 and also pp. XIV—782-783 of the manuscript (see present edition, Vol. 31, pp. 400-26, Vol. 32, pp. 258-62).—261
- 164 Marx is referring to the third chapter (or section—see Note 4) on “Capital

and Profit", which he began in Notebook XVI and in point 2 of which he proposed to discuss the question of the "transformation of values into prices of production"—cf. his draft plan on p. XVIII—1139 (this volume, p. 346).

Subsequently this question was examined in *Capital*, Volume III, chapters VIII-XII (see present edition, Vol. 37).—261

- ¹⁶⁵ In the original calculation it was assumed that in the second case the cost of production of instruments of labour and labour capacity would be reckoned against the halved value of a quarter of corn resulting from the doubling in the size of the harvest. Now Marx points out that this fall in value occurred only in the *autumn* of the second year, whilst up to that autumn the value of a quarter was twice as high. Thus, whilst in the original calculation the costs of production in the second case amount to $20c+40c+40v=100$ quarters, it now turns out that they are expressed by the first sum, i.e., the sum in the first case: $20c+20c+20v=60$ quarters. Since the harvest in the second case amounts to 200 quarters, the share of profit equals 140 quarters.—267
- ¹⁶⁶ Marx is apparently referring to the conversion of part of profit and part of capital into rent, which he examined on pp. XIII—684-687, when analysing Ricardo's theory of profit (see present edition, Vol. 32, pp. 87-92).—272
- ¹⁶⁷ On p. III—126 of the manuscript, Marx, examining the influence of a rise in labour productivity on a fall in the value of constant and variable capital, noted: "see Ramsay" (see present edition, Vol. 30, p. 236).—273
- ¹⁶⁸ On workers' cooperative factories in Britain see also p. XV—919 of the manuscript (present edition, Vol. 32, p. 497).—280
- ¹⁶⁹ The summary of contents for the *Theories of Surplus Value* written on the inside front cover of Notebook XIV of the manuscript includes point "n) Cherbuliez" (see present edition, Vol. 32, p. 8). Marx intended to examine Sismondi's views, not in the *Theories of Surplus Value*, but in the subsequent part of his work where he planned to analyse the "real movement of capital (competition and credit)" (*ibid.*, p. 245). See also Note 67.—285
- ¹⁷⁰ In the manuscript Marx crossed out the following here: "Although now, in view of the fivefold turnover, this individual capitalist has to lay out only £2,500 on cotton, the capital spent on cotton is, if we consider the overall product, 5 times that contained in labour."—290
- ¹⁷¹ Cherbuliez gave the name "commercial profit" (*profit mercantile*) to the profit of the individual capitalist.—292
- ¹⁷² Apart from the extraction of minerals, the production of timber, fishing and hunting, Cherbuliez included among the "extractive industries (*industries extractives*) all types of farming which produce agricultural raw materials.—292
- ¹⁷³ What Marx means when he refers to the need to "reduce the first proposition to its correct formulation" is that the original lacks the word "value" (see also next page) given here in italics, since Cherbuliez makes no distinction between the value of products and their material form, or use value.—294
- ¹⁷⁴ Marx is referring to the examination of mercantile capital in notebooks XV and XVII of the manuscript, notably pp. 964 and 1030 (see this volume, pp. 48-50, 155-57).—317
- ¹⁷⁵ Marx is summarising James Mill's arguments as contained in *Elements of Political Economy*, London, 1821, Chapter 4, Section 5, "Taxes on Rent".—319

- 176 Cherbuliez describes the inequality between the rich and the poor who depend on them as the first result of the present distribution of wealth.—320
- 177 The reference is to the anonymous review of this book by Jones published in the issue of August-September 1831 (Vol. LIV), pp. 84-99.—320
- 178 *Ryot*—an Indian peasant. Jones applies this term to the peasants in India and other Asian countries who paid rent—a tax in kind—to the sovereign, who was the supreme owner of all the land.—321
- 179 The *cottiers*—a category of the rural population consisting of poor or landless peasants. In Ireland, the cottiers rented small plots of land and cottages from the landlords or real estate agents on extremely onerous terms. Their position resembled that of farmhands.—322
- 180 When examining Ricardo's views on the question of rent, Marx referred to this fact on pp. XI—492, 504, as well as on p. XII—605 of the manuscript (see present edition, Vol. 31, pp. 338-39, 358-60, 529-30).—323
- 181 See Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*; with Notes and an Additional Volume by David Buchanan, Vol. II, Edinburgh, London, 1814, p. 55, note; J. C. L. Simonde de Sismondi, *Nouveaux principes d'économie politique...*, Vol. I, Paris, 1827, pp. 300-13; Th. Hopkins, *Economical Enquiries...*, London, 1822, p. 11 et seq. and p. 31 et seq.; idem., *On Rent of Land...*, London, 1828, pp. 6, 15. See also the manuscript, pp. XI—508a-510, 522; XII—644 (present edition, Vol. 31, pp. 365-68, 387, Vol. 32, p. 22).—324
- 182 Marx is referring to Roscher's book *System der Volkswirtschaft*, Vol. 1: *Die Grundlagen der Nationalökonomie*, Stuttgart and Augsburg, 1858, p. 385, where Roscher, discussing the division of profit into profit of enterprise and interest, refers to *An Outline...* by Senior, who, along with George Read, was among the first to draw attention to this fact. In Notebook VII of excerpts compiled in London in 1859-63, p. 229, Marx remarks that this division was discernible back in the anonymous pamphlet *An Inquiry into those Principles, respecting the Nature of Demand and the Necessity of Consumption*, London, 1821, pp. 52-53, and also in Thomas Hopkins' *Economical Enquiries Relative to the Laws Which Regulate Rent, Profit, Wages, and the Value of Money*, London, 1822, pp. 43-44.—333
- 183 What Jones calls the "labour fund" figures in Malthus as "funds for the maintenance of labour". This term was used repeatedly in the first edition of Malthus' *Essay on the Principle of Population...*, London, 1798, pp. 303, 305, 306, 307, 312, 313, et seq. It also occurs in his *Principles of Political Economy...*—333
- 184 In his *Text-book of Lectures on the Political Economy of Nations*, Hertford, 1852, p. 71, Jones recalls that the Earl of Warwick, the "king-maker", alone fed daily, in his various castles, 40,000 men.—335
- 185 Marx made a detailed conspectus of this work by Jones in Notebook VII of excerpts compiled in London in 1859-63, pp. 119-23, from where the quotations below are taken.—337
- 186 The supporters of this viewpoint included Nassau William Senior (*Principes fondamentaux de l'économie politique...*, Paris, 1836, pp. 342-43); Alonzo Potter (*Political Economy*, New York, 1841, p. 133); Gustave de Molinari (*Études économiques*, Paris, 1846, p. 36) and other economists.—338
- 187 Marx discusses revenue and its sources on pp. XV—891-944 of the manuscript (see present edition, Vol. 32, pp. 449-541). This "Episode", as Marx describes it on the inside front cover of Notebook XIV, is a supplement to the main text

- of the *Theories of Surplus Value*. It may be seen from the plan for the third section (see Note 4) of *Capital* drawn up on p. XVIII—1139 that he intended it to be subsequently included as point 9 in this third chapter (see this volume, p. 346).—340
- 188 Only Jones was a clergyman.—345
- 189 See article "Connection between the Rate of Interest and the Abundance or Scarcity of the Precious Metals" in the indicated issue of *The Economist*. This quotation had previously been given by Marx in the economic manuscript of 1857-58 (see present edition, Vol. 29, p. 236).—348
- 190 Cf. the corresponding passage in the economic manuscript of 1857-58 (present edition, Vol. 29, p. 227).—348
- 191 The quotation from the book by J. D. Tuckett is taken from the economic manuscript of 1857-58 (see present edition, Vol. 29, p. 230).—349
- 192 Marx gave a detailed examination of commercial capital in notebooks XV, XVII and XVIII of the manuscript (see present edition, Vol. 32, pp. 464-69 and also this volume, pp. 9-68, 154-70, 239-52).—351
- 193 The reference is evidently to the latter's book *System der Volkswirtschaft*, Vol. 1: *Die Grundlagen der Nationalökonomie*, Stuttgart and Augsburg, 1858, p. 384 et seq.—351
- 194 Here Jones quotes from the Physiocrats' monthly calendar *Ephémérides du Citoyen*, 1767, Part III, p. 56.—355
- 195 Cf. p. I—23 of the manuscript (present edition, Vol. 30, p. 46).—355
- 196 Cf. also the descriptions of Indian towns in Bernier's book which Marx cites in his letter to Engels of June 2, 1853 (present edition, Vol. 39, pp. 332-33).—357
- 197 Marx refers to "depreciation" here because organic fertilisers applied to the soil function as fixed capital and transfer their value to the product only gradually, one part after another.—359
- 198 Cf. the analysis of Ricardo's example on pp. XIII—735-736 of the manuscript (present edition, Vol. 32, pp. 179-81).—363
- 199 The report in question was delivered on December 7, 1859, and published in *The Journal of the Society of Arts, and of the Institutions in Union*, December 9, 1859, pp. 53-61. Here Marx quotes from the account of this report, "Agricultural Progress and Wages", published in *The Economist*, January 21, 1860, p. 64, in the "Agriculture" column.—365
- 200 Marx quoted this passage back in the manuscript of 1857-58 (see present edition, Vol. 28, p. 522).—366
- 201 The first edition of Cherbuliez's book entitled *Riche ou pauvre...* appeared in Paris and Geneva in 1840. Here, the reference is to Cherbuliez's book *Richesse ou pauvreté. Exposition des causes et des effets de la distribution actuelle des richesses sociales*, Paris, 1841.—373
- 202 See Th. Hodgskin, *Popular Political Economy...*, London, 1827, p. 72. Notebook IX of excerpts, compiled in London in 1851, contains the following: "In 1826, the various machinery used in manufacturing cotton enabled 1 man to perform the work of 150. Now 280,000 men are supposed to be employed in it, whereas half a century ago 42,000,000 were required."—374

- ²⁰³ Marx is referring to the following passage from Ravenstone's book *Thoughts on the Funding System, and Its Effects*, London, 1824, p. 45: "Machinery can seldom be applied with success to abridge the labours of an individual; more time would be lost in its construction than could be saved by its application. It is only really useful when it acts on great masses, when a single machine can assist the labours of thousands." Marx also quotes this passage in the manuscript of 1857-58 (see present edition, Vol. 28, p. 325). See Note 2.—381
- ²⁰⁴ Marx came to this conclusion as a result of analysing the half-yearly reports of the English factory inspectors. See, for example, *Reports of the Inspectors of Factories ... for the Half Year ending 31st October 1859*, London, 1860, pp. 47-48, 52. See also present edition, Vol. 30, pp. 170, 224, Vol. 20, p. 10.—386
- ²⁰⁵ Excerpts on this subject are to be found in Notebook VII (p. 193), compiled in London in 1859-63, in which Marx copied out passages from the *Irish Census for 1861*. The census indicated that, between 1851 and 1861, 1,230,986 Irishmen emigrated. This was partly due to the famine of 1846-47 caused by the potato blight, which claimed a million lives. In 1861 the total population of Ireland was 5,764,543, having fallen by 787,842 since 1851.—387
- ²⁰⁶ See Marx's letter to Engels of January 28, 1863 (present edition, Vol. 41, pp. 449-51). This letter sets out in generalised form what Marx wrote on the first thirty pages of Notebook XIX. The most probable direct reason for this description of the essential differences between a tool and a machine was his study of Richard Jones' views.—387
- ²⁰⁷ Marx is most likely referring to the statements made by Charles Hutton in his book *A Course of Mathematics*, London, 1841, p. 810, and also by Francis Wayland in *The Elements of Political Economy*, Boston, 1843, p. 61 et seq.—389
- ²⁰⁸ Cf. J. H. M. Poppe, *Geschichte der Technologie...*, Vol. 1, Göttingen, 1807, pp. 104-05.—400
- ²⁰⁹ Adam Smith gives this example in "Division of Labour", the first chapter of *An Inquiry into the Nature and Causes of the Wealth of Nations*, Edinburgh, London, 1814.—404
- ²¹⁰ The *Nuremberg egg* was the name given to the first pocket watch with a steel spiral spring made by the Nuremberg craftsman Peter Henlein at the very beginning of the 16th century. It owed this name to its oval shape.—404
- ²¹¹ In this paragraph Marx gives a short summary of the entry "Baumwollspinnerei" in Ure's *Technisches Wörterbuch*, revised by K. Kramarsch and Dr. F. Heeren, Vol. 1, Prague, 1843, pp. 105-30.—410
- ²¹² The anonymous work *The Industry of Nations* contained descriptions of the items on display at the Great Exhibition. The exhibition, which Marx visited, was held in London from May to October 1851. The above work may have been written by Robert Ellis.—411
- ²¹³ Marx borrowed the term "philosophical instruments" from *The Industry of Nations*, Part II, London, 1855, which devoted an entire chapter to this subject (Chapter VII, pp. 286-349). What the anonymous author understood this term to mean were such scientific instruments as high-precision scales, thermometers, barometers, hydrometers, theodolites, telescopes, microscopes, etc. The term "philosophical instruments" appeared in connection with "natural philosophy", which was used for a long time in Britain to denote physics and other natural sciences.—421, 456

- 214 The manuscript continues with notes later crossed out by Marx:
 "VII) SILK FACTORIES
 "a) SPINNING AND WEAVING."
 There follow a number of figures. Adjacent to "Silk Factories" is the reference "(on the next page)". It is on this basis that the text has been rearranged.—432
- 215 On the right of this page in the manuscript, there are auxiliary calculations, which are separated from the remaining text by a vertical line.—434
- 216 Marx is referring here to the Crimean War of 1853-56, waged by Russia against Turkey, from 1854 also against Britain and France, and from 1855 against Sardinia for domination in the Middle East.—439
- 217 Marx is quoting below from "Agricultural Progress and Wages", published in *The Economist*, January 21, 1860 (p. 64). This article contained excerpts from the lecture delivered by J. C. Morton on December 7, 1859, to the Society of Arts and entitled "On the Forces Used in Agriculture". It was published in the Society's weekly *The Journal of the Society of Arts*, December 9, 1859. Marx made a conspectus of the said article in his Notebook VII of excerpts compiled in London between 1859 and 1863.
 The *Society of Arts* was an educational and philanthropic association founded in London in 1754.—443
- 218 *Acta Lipsiensia* (Leipzig Chronicles) was the unofficial name of the *Acta Eruditorum* (Scholars' Chronicles), the first German scientific journal, which was published in Leipzig between 1682 and 1782 (in Latin).—445
- 219 This and the following quotations are taken almost entirely from Notebook XV of excerpts, which Marx compiled in London in 1851. They are given by Marx in a very generalised form, since his interest focussed on the purely technical aspect of the development of machines. Digressions from the original are ignored below.—446
- 220 Marx expresses the gist of Tuckett's statement. Tuckett has: "Henry Bell, a Scotchman, for many years a house carpenter ... was ... determined to establish a regular steam passage boat between Glasgow and Helensburgh, which is a watering place on the Clyde, opposite to Greenock... This vessel ... began to be propelled regularly between Glasgow and Helensburgh, in January 1812 ... it is remarkable, that Bell lived to see the general adoption of the grand invention, which he was the first in Europe to apply to practical use, and not only to be distanced by his rivals, but to be ruined in the competition, and reduced to indigence..."—449
- 221 Marx gives the gist of the passage from *The Industry of Nations*. The original reads: "In fine, all the commercial enterprises for the establishment of lines of steamers, where the voyages are of considerable length, have been supported by government."—449
- 222 The excerpts from the economic manuscript of 1857-58 written by Marx on the inside front cover of Notebook V relate directly to the problems examined here in Notebook XIX, which explains the arrangement of the text in the economic manuscript of 1861-63. Also on the inside front cover of Notebook V there was a quotation from Ramsay's book *An Essay on the Distribution of Wealth*, Edinburgh, London, 1836, p. 205, which Marx apparently crossed out at a later date. He had already made use of this quotation in the economic manuscript of 1861-63 (see this volume, pp. 259-60).—479

- ²²³ The edition Marx used has not been identified. The first edition of Hutton's book came out in 1798-1801. Marx referred to the elements of machines named by Hutton on the front cover of Notebook I of his manuscript of 1861-63.—483
- ²²⁴ *Mitigated jails* (Les bagnes mitigés) is the name Fourier gives to factories in his book *La fausse industrie morcelée, répugnante, mensongère, et l'antidote, l'industrie naturelle, combinée, attrayante, véridique, donnant quadruple produit*, Paris, 1835, p. 59.—497
- ²²⁵ Marx is referring to Volume 2 of Ure's book quoted above (see also present edition, Vol. 34).—501

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