EXCERPTS FROM
KARL MARX, CAPITAL V1, CHAPTER 15: "Machinery and Modern Industry"

John Stuart Mill says in his ―Principles of Political Economy":

―It is questionable if all the mechanical inventions yet made have lightened the day‘s toil of any human being.‖ 1

That is, however, by no means the aim of the capitalistic application of machinery. Like every other increase in the productiveness of labour, machinery is intended to cheapen commodities, and, by shortening that portion of the working day, in which the labourer works for himself, to lengthen the other portion that he gives, without an equivalent, to the capitalist. In short, it is a means for producing surplus value.

In manufacture, the revolution in the mode of production begins with the labour-power, in modern industry it begins with the instruments of labour. Our first inquiry then is, how the instruments of labour are converted from tools into machines, or what is the difference between a machine and the implements of a handicraft? We are only concerned here with striking and general characteristics; for epochs in the history of society are no more separated from each other by hard and fast lines of demarcation, than are geological epochs.

Mathematicians and mechanicians, and in this they are followed by a few English economists, call a tool a simple machine, and a machine a complex tool. They see no essential difference between them, and even give the name of machine to the simple mechanical powers, the lever, the inclined plane, the screw, the wedge, &c.2 As a matter of fact, every machine is a combination of those simple powers, no matter how they may be disguised. From the economic standpoint this explanation is worth nothing, because the historical element is wanting. Another explanation of the difference between tool and machine is that in the case of a tool, man is the motive power, while the motive power of a machine is something different from man, as, for instance, an animal, water, wind, and so on.3 According to this, a plough drawn by oxen, which is a contrivance common to the most different epochs, would be a machine, while Claussen‘s circular loom, which, worked by a single labourer, weaves 96,000 picks per minute, would be a mere tool. Nay, this very loom, though a tool when worked by hand, would, if worked by steam, be a machine. And since the application of animal power is one of man‘s earliest inventions, production by machinery would have preceded production by handicrafts. When in 1735, John Wyatt brought out his spinning machine, and began the industrial revolution of the 18th century, not a word did he say about an ass driving it instead of a man, and yet this part fell to the ass. He described it as a machine ―to spin without fingers.‖4

All fully developed machinery consists of three essentially different parts, the motor mechanism, the transmitting mechanism, and finally the tool or working machine. The motor mechanism is that which puts the whole in motion. It either generates its own motive power, like the steam-engine, the caloric engine, the electromagnetic machine, &c., or it receives its impulse from some already existing natural force, like the water-wheel from a head of water, the wind-mill from wind, &c. The transmitting mechanism,

composed of fly-wheels, shafting, toothed wheels, pullies, straps, ropes, bands, pinions, and gearing of the most varied kinds, regulates the motion, changes its form. where necessary, as for instance, from linear to circular, and divides and distributes it among the working machines. These two first parts of the whole mechanism are [258 Chapter 15] there, solely for putting the working machines in motion, by means of which motion the subject of labour is seized upon and modified as desired. The tool or working machine is that part of the machinery with which the industrial revolution of the 18th century started. And to this day it constantly serves as such a starting-point, whenever a handicraft, or a manufacture, is turned into an industry carried on by machinery.

On a closer examination of the working machine proper, we find in it, as a general rule, though often, no doubt, under very altered forms, the apparatus and tools used by the handicraftsman or manufacturing workman; with this difference, that instead of being human implements, they are the implements of a mechanism, or mechanical implements. Either the entire machine is only a more or less altered mechanical edition of the old handicraft tool, as, for instance, the power-loom,5 or the working parts fitted in the frame of the machine are old acquaintances, as spindles are in a mule, needles in a stocking-loom, saws in a sawing-machine, and knives in a chopping machine. The distinction between these tools and the body proper of the machine, exists from their very birth; for they continue for the most part to be produced by handicraft, or by manufacture, and are afterwards fitted into the body of the machine, which is the product of machinery.6 The machine proper is therefore a mechanism that, after being set in motion, performs with its tools the same operations that were formerly done by the workman with similar tools. Whether the motive power is derived from man, or from some other machine, makes no difference in this respect. From the moment that the tool proper is taken from man, and fitted into a mechanism, a machine takes the place of a mere implement. The difference strikes one at once, even in those cases where man himself continues to be the prime mover. The number of implements that he himself can use simultaneously, is limited by the number of his own natural instruments of production, by the number of his bodily organs. In Germany, they tried at first to make one spinner work two spinning-wheels, that is, to work simultaneously with both hands and both feet. This was too difficult. Later, a treddle spinning-wheel with two spindles was invented, but adepts in spinning, who could spin two threads at once, were almost as scarce as two-headed men. The Jenny, on the other hand, even at its very birth, spun with 12-18 spindles, and the stocking-loom knits with many thousand needles at once. The number of tools that a machine can bring into play simultaneously, is from the very first emancipated from the organic limits that hedge in the tools of a handicraftsman.

In many manual implements the distinction between man as mere motive power, and man as the workman or operator properly so called, is brought into striking contrast. For instance, the foot is merely the prime mover of the spinning-wheel, while the hand, working with the spindle, and drawing and twisting, performs the real operation of spinning. It is this last part of the handicraftsman‘s implement that is first seized upon by the industrial revolution, leaving to the workman, in addition to his new labour of watching the machine with his eyes and correcting its mistakes with his hands, the merely mechanical part of being the moving power. On the other hand, implements, in regard to which man has always acted as a simple motive power, as, for instance, by turning the

crank of a mill,7 by pumping, by moving up and down the arm of a bellows, by pounding with a mortar, &c., such implements soon call for the application of animals, water8 and wind as motive powers. Here and there, long before the period of manufacture, and also, to some extent, during that period, these implements pass over into machines, but without creating any revolution in the mode of production. It becomes evident, in the period of modern industry, that these implements, even under their form of manual tools, are already machines. For instance, the pumps with which the Dutch, in 1836-7, emptied the Lake of Harlem, were constructed on the principle of ordinary pumps; the only difference being, that their pistons were driven by cyclopean steam-engines, instead of by men. The common and very [259 Chapter 15] imperfect bellows of the blacksmith is, in England, occasionally converted into a blowing-engine, by connecting its arm with a steam-engine. The steam-engine itself, such as it was at its invention, during the manufacturing period at the close of the 17th century, and such as it continued to be down to 1780,9 did not give rise to any industrial revolution. It was, on the contrary, the invention of machines that made a revolution in the form of steam-engines necessary. As soon as man, instead of working with an implement on the subject of his labour, becomes merely the motive power of an implement-machine, it is a mere accident that motive power takes the disguise of human muscle; and it may equally well take the form of wind, water or steam. Of course, this does not prevent such a change of form from producing great technical alterations in the mechanism that was originally constructed to be driven by man alone. Now-a-days, all machines that have their way to make, such as sewing-machines, bread-making machines, &c., are, unless from their very nature their use on a small scale is excluded, constructed to be driven both by human and by purely mechanical motive power.

The machine, which is the starting-point of the industrial revolution, supersedes the workman, who handles a single tool, by a mechanism operating with a number of similar tools, and set in motion by a single motive power, whatever the form of that power may be.10 Here we have the machine, but only as an elementary factor of production by machinery.

Increase in the size of the machine, and in the number of its working tools, calls for a more massive mechanism to drive it; and this mechanism requires, in order to overcome its resistance, a mightier moving power than that of man, apart from the fact that man is a very imperfect instrument for producing uniform continued motion. But assuming that he is acting simply as a motor, that a machine has taken the place of his tool, it is evident that he can be replaced by natural forces. Of all the great motors handed down from the manufacturing period, horse-power is the worst, partly because a horse has a head of his own, partly because he is costly, and the extent to which he is applicable in factories is very restricted.11 Nevertheless the horse was extensively used during the infancy of modern industry. This is proved, as well by the complaints of contemporary agriculturists, as by the term ―horse-power,‖ which has survived to this day as an expression for mechanical force.

Wind was too inconstant and uncontrollable, and besides, in England, the birthplace of modern industry, the use of water power preponderated even during the manufacturing period. In the 17th century attempts had already been made to turn two pairs of millstones

with a single water-wheel. But the increased size of the gearing was too much for the water power, which had now become insufficient, and this was one of the circumstances that led to a more accurate investigation of the laws of friction. In the same way the irregularity caused by the motive power in mills that were put in motion by pushing and pulling a lever, led to the theory, and the application, of the fly-wheel, which afterwards plays so important a part in modern industry.12 In this way, during the manufacturing period, were developed the first scientific and technical elements of Modern Mechanical Industry. Arkwright‘s throstle spinning mill was from the very first turned by water. But for all that, the use of water, as the predominant motive power, was beset with difficulties. It could not be increased at will, it failed at certain seasons of the year, and, above all, it was essentially local.13 Not till the invention of Watt‘s second and so-called double-acting steam-engine, was a prime mover found, that begot its own force by the consumption of coal and water, whose power was entirely under man‘s control, that was mobile and a means of locomotion, that was urban and not, like the waterwheel, rural, that permitted production to be concentrated in towns instead of, like the water-wheels, being scattered up and down the country,14 that was of universal technical application, and, relatively speaking, little affected in its choice of residence by local circumstances. The greatness of Watt‘s genius showed itself in the specification of the [260 Chapter 15] patent that he took out in April, 1784. In that specification his steam-engine is described, not as an invention for a specific purpose, but as an agent universally applicable in Mechanical Industry. In it he points out applications, many of which, as for instance, the steam-hammer, were not introduced till half a century later. Nevertheless he doubted the use of steam-engines in navigation. His successors, Boulton and Watt, sent to the exhibition of 1851 steam-engines of colossal size for ocean steamers.

As soon as tools had been converted from being manual implements of man into implements of a mechanical apparatus, of a machine, the motive mechanism also acquired an independent form, entirely emancipated from the restraints of human strength. Thereupon the individual machine, that we have hitherto been considering, sinks into a mere factor in production by machinery. One motive mechanism was now able to drive many machines at once. The motive mechanism grows with the number of the machines that are turned simultaneously, and the transmitting mechanism becomes a wide-spreading apparatus.

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We saw that the productive forces resulting from co-operation and division of labour cost capital nothing. They are natural forces of social labour. So also physical forces, like steam, water, &c., when appropriated to productive processes, cost nothing. But just as a man requires lungs to breathe with, so he requires something that is work of man‘s hand, in order to consume physical forces productively. A water-wheel is necessary to exploit the force of water, and a steam-engine to exploit the elasticity of steam. Once discovered, the law of the deviation of the magnetic needle in the field of an electric current, or the

law of the magnetisation of iron, around which an electric current circulates, cost never a penny.23 But the exploitation of these laws for the purposes of telegraphy, &c., necessitates a costly and extensive apparatus. The tool, as we have seen, is not exterminated by the machine. From being a dwarf implement of the human organism, it expands and multiplies into the implement of a mechanism created by man. Capital now sets the labourer to work, not with a manual tool, but with a machine which itself handles the tools. Although, therefore, it is clear at the first glance that, by incorporating both stupendous physical forces, and the natural sciences, with the process of production, modern industry raises the productiveness of labour to an extraordinary degree, it is by no means equally clear, that this increased productive force is not, on the other hand, purchased by an increased expenditure of labour. Machinery, like every other component of constant capital, creates no new value, but yields up its own value to the product that it serves to beget. In so far as the machine has value, and, in consequence, parts with value to the product, it forms an element in the value of that product. Instead of being cheapened, the product is made dearer in proportion to the value of the machine. And it is clear as noon-day, that machines and systems of machinery, the characteristic instruments of labour of Modern Industry, are incomparably more loaded with value than the implements used in handicrafts and manufactures.

In the first place, it must be observed that the machinery, while always entering as a whole into the labour-process, enters into the value-begetting process only by bits. It never adds more value [265 Chapter 15] than it loses, on an average, by wear and tear. Hence there is a great difference between the value of a machine, and the value transferred in a given time by that machine to the product. The longer the life of the machine in the labour-process, the greater is that difference. It is true, no doubt, as we have already seen, that every instrument of labour enters as a whole into the labour-process, and only piece-meal, proportionally to its average daily loss by wear and tear, into the value-begetting process. But this difference between the instrument as a whole and its daily wear and tear, is much greater in a machine than in a tool, because the machine, being made from more durable material, has a longer life; because its employment, being regulated by strictly scientific laws, allows of greater economy in the wear and tear of its parts, and in the materials it consumes; and lastly, because its field of production is incomparably larger than that of a tool. After making allowance, both in the case of the machine and of the tool, for their average daily cost, that is for the value they transmit to the product by their average daily wear and tear, and for their consumption of auxiliary substance, such as oil, coal, and so on, they each do their work gratuitously, just like the forces furnished by Nature without the help of man. The greater the productive power of the machinery compared with that of the tool, the greater is the extent of its gratuitous service compared with that of the tool. In modern industry man succeeded for the first time in making the product of his past labour work on a large scale gratuitously, like the forces of Nature.24

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The revolution called forth by modern industry in agriculture, and in the social relations of agricultural producers, will be investigated later on. In this place, we shall merely indicate a few results by way of anticipation. If the use of machinery in agriculture is for the most part free from the injurious physical effect it has on the factory operative, its action in superseding the labourers is more intense, and finds less resistance, as we shall see later in detail. In the counties of Cambridge and Suffolk, for example, the area of cultivated land has extended very much within the last 20 years (up to 1868), while in the same period the rural population has diminished, not only relatively, but absolutely. In the United States it is as yet only virtually that agricultural machines replace labourers; in other words, they allow of the cultivation by the farmer of a larger surface, but do not actually expel the labourers employed. In 1861 the number of persons occupied in England and Wales in the manufacture of agricultural machines was 1,034, whilst the number of agricultural labourers employed in the use of agricultural machines and steam-engines did not exceed 1,205.

In the sphere of agriculture, modern industry has a more revolutionary effect than elsewhere, for this reason, that it annihilates the peasant, that bulwark of the old society, and replaces him by the wage-labourer. Thus the desire for social changes, and the class antagonisms are brought to the same level in the country as in the towns. The irrational, old-fashioned methods of agriculture are replaced by scientific ones. Capitalist production completely tears asunder the old bond of union which held together agriculture and manufacture in their infancy. But at the same time it creates the material conditions for a higher synthesis in the future, viz., the union of agriculture and industry on the basis of the more perfected forms they have each acquired during their temporary separation. Capitalist production, by collecting the population in great centres, and causing an ever-increasing preponderance of town population, on the one hand concentrates the historical [326 Chapter 15] motive power of society; on the other hand, it disturbs the circulation of matter between man and the soil, i.e., prevents the return to the soil of its elements consumed by man in the form of food and clothing; it therefore violates the conditions necessary to lasting fertility of the soil. By this action it destroys at the same time the health of the town labourer and the intellectual life of the rural labourer.245 But while upsetting the naturally grown conditions for the maintenance of that circulation of matter, it imperiously calls for its restoration as a system, as a regulating law of social production, and under a form appropriate to the full development of the human race. In agriculture as in manufacture, the transformation of production under the sway of capital, means, at the same time, the martyrdom of the producer; the instrument of labour becomes the means of enslaving, exploiting, and impoverishing the labourer; the social combination and organisation of labour-processes is turned into an organised mode of crushing out the workman‘s individual vitality, freedom, and independence. The dispersion of the rural labourers over larger areas breaks their power of resistance while concentration increases that of the town operatives. In modern agriculture, as in the urban industries, the increased productiveness and quantity of the labour set in motion are bought at the cost of laying waste and consuming by disease labour-power itself. Moreover, all progress in capitalistic agriculture is a progress in the art, not only of robbing the labourer, but of robbing the soil; all progress in increasing the fertility of the soil for a given time, is a progress towards ruining the lasting sources of that fertility. The more a country starts its development on the foundation of modern

industry, like the United States, for example, the more rapid is this process of destruction. 246Capitalist production, therefore, develops technology, and the combining together of various processes into a social whole, only by sapping the original sources of all wealth-the soil and the labourer.

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1 Mill should have said, ―of any human being not fed by other people‘s labour,‖ for, without doubt, machinery has greatly increased the number of well-to-do idlers.

2 See, for instance, Hutton: ―Course of Mathematics.‖

3 ―From this point of view we may draw a sharp line of distinction between a tool and a machine: spades, hammers, chisels, &c., combinations of levers and of screws, in all of which, no matter how complicated they may be in other respects, man is the motive power, ... all this falls under the idea of a tool; but the plough, which is drawn by animal power, and wind-mills, &c., must be classed among machines.‖ (Wilhelm Schulz: ―Die Bewegung der Produktion.‖ Zürich, 1843, p. 38.) In many respects a book to be recommended.

4 Before his time, spinning machines, although very imperfect ones, had already been used, and Italy was probably the country of their first appearance. A critical history of technology would show how little any of the inventions of the 18th century are the work of a single individual. Hitherto there is no such book. Darwin has interested us in the history of Nature‘s Technology, i.e., in the formation of the organs of plants and animals, which organs serve as instruments of production for sustaining life. Does not the history of the productive organs of man, of organs that are the material basis of all social organisation, deserve equal attention? And would not such a history be easier to compile, since, as Vico says, human history differs from natural history in this, that we have made the former, but not the latter? Technology discloses man‘s mode of dealing with Nature, the process of production by which he sustains his life, and thereby also lays bare the mode of formation of his social relations, and of the mental conceptions that flow from them. Every history of religion, even, that fails to take account of this material basis, is uncritical. It is, in reality, much easier to discover by analysis the earthly core of the misty creations of religion, than, conversely, it is, to develop from the actual relations of life the corresponding celestialised forms of those relations. The latter method is the only materialistic, and therefore the only scientific one. The weak points in the abstract materialism of natural science, a materialism that excludes history and its process, are at once evident from the [327 Chapter 15] abstract and ideological conceptions of its spokesmen, whenever they venture beyond the bounds of their own speciality.

5 Especially in the original form of the power-loom, we recognise, at the first glance, the ancient loom. In its modern form, the power-loom has undergone essential alterations.

6 It is only during the last 15 years (i.e., since about 1850), that a constantly increasing portion of these machine tools have been made in England by machinery, and that not by the same manufacturers who make the machines. Instances of machines for the fabrication of these mechanical tools are, the automatic bobbin-making engine, the cardsetting engine, shuttle-making machines, and machines for forging mule and throstle spindles.

7 Moses says: ―Thou shalt not muzzle the ox that treads the corn.‖ The Christian philanthropists of Germany, on the contrary, fastened a wooden board round the necks of the serfs, whom they used as a motive power for grinding, in order to prevent them from putting flour into their mouths with their hands.

8 It was partly the want of streams with a good fall on them, and partly their battles with superabundance of water in other respects, that compelled the Dutch to resort to wind as a motive power. The wind-mill itself they got from Germany, where its invention was the origin of a pretty squabble between the nobles, the priests, and the emperor, as to which of those three the wind ―belonged.‖ The air makes bondage, was the cry in Germany, at the same time that the wind was making Holland free. What it reduced to bondage in this case, was not the Dutchman, but the land for the Dutchman. In 1836, 12,000 windmills of 6,000 horse-power were still employed in Holland, to prevent two-thirds of the land from being reconverted into morasses.

9 It was, indeed, very much improved by Watt‘s first so-called single acting engine; but, in this form, it continued to be a mere machine for raising water, and the liquor from salt mines.

10 ―The union of all these simple instruments, set in motion by a single motor, constitutes a machine.‖ (Babbage, l.c.)

11 In January, 1861, John C. Morton read before the Society of Arts a paper on ―The forces employed in agriculture.‖ He there states: ―Every improvement that furthers the uniformity of the land makes the steam-engine more and more applicable to the production of pure mechanical force.... Horse-power is requisite wherever crooked fences and other obstructions prevent uniform action. These obstructions are vanishing day by day. For operations that demand more exercise of will than actual force, the only power applicable is that controlled every instant by the human mind-in other words, man-power.‖ Mr. Morton then reduces steam-power, horse-power, and man-power, to the unit in general use for steam-engines, namely, the force required to raise 33,000 lbs. one foot in one minute, and reckons the cost of one horse-power from a steam-engine to be 3d., and from a horse to be 5½d. per hour. Further, if a horse must fully maintain its health, it can work no more than 8 hours a day. Three at the least out of every seven horses used on tillage land during the year can be dispensed with by using steam-power, at an expense not greater than that which, the horses dispensed with, would cost during the 3 or 4 months in which alone they can be used effectively. Lastly, steam-power, in those agricultural operations in which it can be employed, improves, in comparison with horse-power, the quality of the work. To do the work of a steam-engine would require 66 men, at a total cost of 15S. an hour, and to do the work of a horse, 32 men, at a total cost of 8s.

an hour.

12 Faulhaber, 1625; De Caus, 1688.

13 The modern turbine frees the industrial exploitation of water-power from many of its former fetters.

14 ―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 water-wheel; and, although the establishment of the water-mills was the commencement of the breaking up of the domestic system of manufacture, yet the mills [328 Chapter 15] necessarily situated upon streams, and frequently at considerable distances the one from the other, formed part of a rural, rather than an urban system; and it was not until the introduction of the 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 manufacturing towns.‖ (A. Redgrave in ―Reports of the Insp. of Fact., 30th April, 1860,‖ p. 36.)

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23 Science, generally speaking, costs the capitalist nothing, a fact that by no means hinders him from exploiting it. The science of others is as much annexed by capital as the labour of others. Capitalistic appropriation and personal appropriation, whether of science or of material wealth, are, however, totally different things. Dr. Ure himself deplores the gross ignorance of mechanical science existing among his dear machinery-exploiting manufacturers, and Liebig can a tale unfold about the astounding ignorance of chemistry displayed by English chemical manufacturers.

24 Ricardo lays such stress on this effect of machinery (of which, in other connexions, he takes no more notice than he does of the general distinction between the labour process and the process of creating surplus value), that he occasionally loses sight of the value given up by machines to the product, and puts machines on the same footing as natural forces. Thus ―Adam Smith nowhere undervalues the services which the natural agents and machinery perform for us, but he very justly distinguishes the nature of the value which they add to commodities... as they perform their work gratuitously, the assistance which they afford us, adds nothing to value in exchange.‖ (Ric., l.c., pp. 336, 337.) This observation of Ricardo is of course correct in so far as it is directed against J. B. Say, who imagines that machines render the ―service‖ of creating value which forms a part of ―profits.‖

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245 ―You divide the people into two hostile camps of clownish boors and emasculated dwarfs. Good heavens! a nation divided into agricultural and commercial interests, calling itself sane; nay, styling itself enlightened and civilised, not only in spite of, but in consequence of this monstrous and unnatural division.‖ (David Urquhart, l.c., p. 119.) This passage shows, at one and the same time, the strength and the weakness of that kind of criticism which knows how to judge and condemn the present, but not how to comprehend it.

246 See Liebig: ―Die Chemie in ihrer Anwendung auf Agricultur und Physiologie,‖ 7. Auflage, 1862, and especially the ―Einleitung in die Naturgesetze des Feldbaus,‖ in the 1st Volume. To have developed from the point of view of natural science, the negative, i.e., destructive side of modern agriculture, is one of Liebig‘s immortal merits. His summary, too, of the history of agriculture, although not free from gross errors, contains flashes of light. It is, however, to be regretted that he ventures on such haphazard assertions as the following: ―By greater pulverising and more frequent ploughing, the circulation of air in the interior of porous soil is aided, and the surface exposed to the action of the atmosphere is increased and renewed; but it is easily seen that the increased yield of the land cannot be proportional to the labour spent on that land, but increases in a much smaller proportion. This law,‖ adds Liebig, ―was first enunciated by John Stuart Mill in his ‗Principles of Pol. Econ.,‘ Vol. 1, p. 17, as follows: ‗That the produce of land increases, *caeteris paribus*, in a diminishing ratio to the increase of the labourers employed‘ (Mill here introduces in an erroneous form the law enunciated by Ricardo‘s school, for since the ‗decrease of the labourers employed,‘ kept even pace in England with the advance of agriculture, the law discovered in, and applied to, England, could have no application to that country, at all events), ‗is the universal law of agricultural industry.‘ This is very remarkable, since Mill was ignorant of the reason for this taw.‖ (Liebig, l.c., Bd. I., p. 143 and Note.) Apart from Liebig‘s wrong interpretation of the word ―labour,‖ by which word he understands something quite different from what Political Economy does, it is, in any case, ―very remarkable‖ that he should make Mr. John Stuart Mill the first propounder of a theory which was first published by James Anderson in A. Smith‘s days, and was repeated in various works down to the beginning of the 19th century; a theory which Malthus, that master in plagiarism (the whole of his population theory is a shameless plagiarism), appropriated to himself in 1815; which West developed at the same time as, and independently of, Anderson; which in the year 1817 was connected by Ricardo with the general theory of value, then made the round of the world as Ricardo‘s theory, and in 1820 was vulgarised by James Mill, the father of John Stuart Mill; and which, finally, was reproduced by John Stuart Mill and others, as a dogma already quite commonplace, and known to every schoolboy. It cannot be denied that John Stuart Mill owes his, at all events, ―remarkable‖ authority almost entirely to such *quid-pro-quos*.