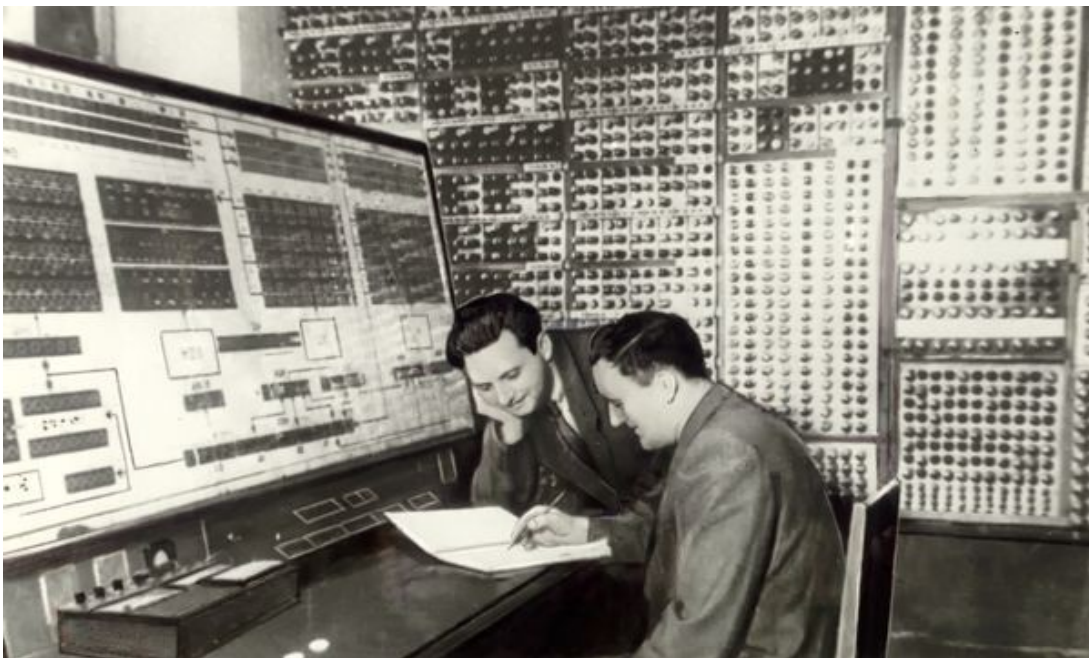


Cybernetics in the USSR: A Marxist-Leninist Perspective

89–113 minutes



*“The synapse is nothing but a mechanism... and must have its precise analogue in the computing machine.” (Norbert Wiener, *Cybernetics: Or Control and Communication in the Animal and the Machine*, p. 14)*

*“The synapse in the living organism corresponds to the switching device in the machine” (Norbert Wiener, *The Human Use of Human Beings*, p. 34)*

“to say that thought is material is to make a false step, a step towards confusing materialism and idealism” (V. I. Lenin,

Materialism and Empirio-criticism)

*“One day we shall certainly “reduce” thought experimentally to molecular and chemical motions in the brain; but does that exhaust the essence of thought?”
(Friedrich Engels, Dialectics of Nature)*

INTRODUCTION

Cybernetics is a set of theories and practices developed mainly by American mathematician Norbert Wiener in the late 1940s. He invented his theories during WWII while working for the US military. Cybernetics is difficult to define exactly, but its supporters usually say it deals with “information”, “control” of processes, and it uses analogies which equate living beings and society to machines. For example, a cyberneticist might describe the functioning of a state as a kind of machine, or the functioning of the human mind as a calculator. The precise definition of Cybernetics and the precise meaning of cybernetic ideas will be discussed later in this article.

In 1952 Mikhail G. Yaroshevsky published an article in the Soviet literary gazette, titled “Cybernetics – “science” of obscurantists”. Other articles appeared, and cybernetics was heavily criticized in the USSR, finally being authoritatively labeled a reactionary pseudo-science in the 1954 Short Philosophical Dictionary. However, in the 1960s and 70s cybernetics became fully accepted in the revisionist USSR and was heavily promoted by the government, to the point that it was included in the khrushchevite party program and Khrushchev praised it as vital for building communism. The period of the early 1950s is therefore now described as the

“anti-cybernetics campaign”.

This article investigates the significance of this “campaign”, the reasons why cybernetics was later accepted, and the supposed merits and demerits of cybernetics.

WHY IS CYBERNETICS A PSEUDO-SCIENCE?

Let’s first discuss the Soviet criticism of cybernetics. Its worth quoting the full entry of the 1954 Short Philosophical Dictionary. Afterwards I’ll try to unpack its meaning:

“CYBERNETICS (from the Greek word meaning helmsman, manager) is a reactionary pseudo-science, which arose in the U.S.A. after World War II and which was spread widely in other capitalist countries. It is a form of modern mechanism. The adherents of cybernetics define it as a universal science of the connections and communication in technology, of animals and the life of society as well as of the “general organization” and direction of all processes in nature and society. Thereby cybernetics identifies mechanical, biological, and social correlations and laws with one another. As every mechanistic theory, cybernetics denies the qualitative specificity of laws in the various forms of being and of the development of matter, reducing them to mechanical laws. In contradistinction to the old mechanism of the 17th and 18th Centuries cybernetics considers the psycho-physiological and social phenomena no longer as analogous to the simplest mechanisms but to electronic machines and apparatus, whereby it equates the work of the brain with the work of an automatic calculator and the life of society with a system of electrical and informational communications. In its very essence cybernetics is directed

against the materialistic dialectic, against modern scientific physiology, which was founded by I. P. Pavlov, and against the Marxist, scientific conception of the laws of social life. This mechanistic, metaphysical pseudo-science is most compatible with idealism in philosophy, psychology, and sociology.

Cybernetics makes particularly clear one fundamental trait of the bourgeois outlook, namely its inhumanity, its effort to turn the worker into an accessory of a machine, into an instrument of production and into a weapon of war. The imperialist utopia of replacing the living, thinking man, struggling for his own interests, with a machine in production as well as in war is characteristic of cybernetics. The instigators of a new world war use cybernetics in their dirty, practical affairs. Under the guise of propaganda of cybernetics in the countries of imperialism, scientists of various specialties are being attracted to develop new methods of mass extermination of people – electronic, telemechanical, automatic weapons, the design and production of which have turned into a large branch of the military industry of the capitalist countries.”
(Short Philosophical Dictionary, 1954)

1. Cybernetics is not a science, therefore it is a pseudo-science

First of all Soviet marxists denied that cybernetics is a science. It does not have a precise subject-matter, a precise definition, and all supposed cybernetic advances have actually been discovered by other disciplines such as electronic engineering, computer-science, mathematics or physiology. Cybernetics overlaps with other sciences in a confused and arbitrary way.

While a real “hybrid science” like biochemistry studies chemical processes involved in biology, cybernetics does not do anything comparable. Instead cybernetics is more like a worldview or a philosophical theory than a science.

Slava Gerovitch writes in his book about cybernetics:

“Cybernetics is an unusual historical phenomenon. It is not a traditional scientific discipline, a specific engineering technique, or a philosophical doctrine, although it combines many elements of science, engineering, and philosophy. As presented in Norbert Wiener’s classic 1948 book *Cybernetics, or Control and Communication in the Animal and the Machine*, cybernetics comprises an assortment of analogies between humans and self-regulating machines: human behavior is compared to the operation of a servomechanism; human communication is likened to the transmission of signals over telephone lines; the human brain is compared to computer hardware and the human mind to software; order is identified with life, certainty, and information; disorder is linked to death, uncertainty, and entropy. Cyberneticians view control as a form of communication, and communication as a form of control: both are characterized by purposeful action based on information exchange via feedback loops.

Cybernetics unifies diverse mathematical models, explanatory frameworks, and appealing metaphors from various disciplines... physiology (homeostasis and reflex), psychology (behavior and goal), control engineering (control and feedback), thermodynamics (entropy and order), and communication engineering (information, signal, and noise) **and generalizes each of them to be equally applicable to**

living organisms, to self-regulating machines, and to human society.” (Slava Gerovitch, *From Newspeak to Cyberspeak: A History of Soviet Cybernetics*, p. 2)

2. Cybernetics ignores qualitative differences. It is a vulgarizing theory.

This leads us to the second problem of cybernetics. It tries to be a universal science which applies equally to living, non-living, material and non-material, conscious and non-conscious, social and non-social fields. All of these areas are qualitatively so different that they cannot be equated. In order for the same law to truly apply in all these fields, the law must be extremely broad, akin to a philosophical generalization such as the laws of dialectics. Secondly, we would expect the law to function somewhat differently at qualitatively different levels of organization. However, cybernetics doesn't heed any of these criticisms but instead imposes the same exact laws on all levels of existence.

“To sum up: the many automata of the present age... lend themselves very well to description in physiological terms. It is scarcely a miracle that they can be subsumed under one theory with the mechanisms of physiology.” (Wiener, *Cybernetics*, p. 43)

“there is no reason... why the essential mode of functioning of the living organism should not be the same as that of the automaton” (Wiener, *Cybernetics*, p. 44)

W. Ross Ashby writes in his book *Introduction to Cybernetics* that “the worker in any of the biological sciences”, “The

ecologist”, “The economist”, “The sociologist”, “And the psychotherapist” all may want to apply cybernetic principles. Someone might argue that the same “simple mechanisms” of cybernetics are not adequate for these different fields. However, Ashby assures us that “This, however, is not so.” (p. 244)

In reality cybernetic “laws” are not laws at all, so it would be better to call them principles. These principles involve things like “loops” and “feedback”. According to cybernetics, everything transmits and reacts to “information” in loops: some kind of stimuli is received and it causes reactions. This process keeps going as a loop. Something like walking has often been used as an example by cyberneticists. As the process happens, the body receives new stimuli based on changing circumstances and corrects its actions based on this new information. This is called “feedback”. A process or “loop” which receives “information” and corrects itself according to “feedback mechanisms” is called “controlled” or even “self-controlled”.

These concepts are borrowed from actual fields of science or engineering, such as physiology, control engineering etc. They are often valid in their own fields, but cybernetics applies them arbitrarily to fields where they don’t belong, and applies them imprecisely. Principles describing the motion of mechanical machines are too crude to describe living beings, and principles describing the motion of non-conscious living beings are too crude to describe consciousness or society. Yet, cyberneticists have equated the media to a sensor which receives a stimuli from the people, and the president to a logic

circuit which reacts to the stimuli.

“Cyberneticians combined concepts from physiology (homeostasis and reflex), psychology (behavior and goal), control engineering (control and feedback), thermodynamics (entropy and order), and communication engineering (information, signal, and noise) **and generalized each of them to be equally applicable to living organisms, self-regulating machines** (such as servomechanisms and computers), **and human society.**” (Gerovitch, Newspeak to Cyberspeak, p. 87)

Wiener understood the difference between life and death, conscious and unconscious, not as qualitatively different levels of organization of matter, but as only quantitative differences, different amounts of entropy, a term which he borrowed from physics and imposed on every other field.

Wiener “suggested that it was “best to avoid all question-begging epithets such as ‘life,’ ‘soul,’ ... and the like” and speak merely of the decrease of entropy in both humans and machines.” (Gerovitch, Newspeak to Cyberspeak, p. 90)

An example of how unscientificly, imprecisely and loosely Wiener operated with his concepts, and how deeply vulgarizing this method was, is that Wiener even equated organization with beauty and entropy with ugliness, and presumably it would therefore be possible to demonstrate that a work of art is more beautiful if it is more organized and less entropic. (On what basis do we consider something to be more organized? That Wiener did not say) Therefore beauty and aesthetic value itself would be reduced to mere numbers and

quantities:

“For Wiener, the notion of entropy... became a measure of choice, randomness, and organization, with all the rich cultural connotations of these concepts, including beauty and melody.” (Gerovitch, Newspeak to Cyberspeak, p. 91)

The popularization of cybernetics in western academia relied on circular reasoning which Gerovitch describes in his book.

“The historian Geoffrey Bowker has described this circular process as a chief feature of the language of cybernetics. It served an important social function by supporting “legitimacy exchange” among scientists: “An isolated scientific worker making an outlandish claim could gain rhetorical legitimacy by pointing to support from another field—which in turn referenced the first worker’s field to support its claims. The language of cybernetics provided a site where this exchange could occur.” In Bowker’s words, the author of the “conditional probability machine,” A. M. Uttley, “used mathematics to support his physiology and physiology to support his mathematics, using cybernetic terminology to spiral between the formal properties of classification machines and the nature of the brain.”... [A similar trick was carried out by Wiener] On the first pages of his *Cybernetics*, Wiener suggested the computer as a model for the nervous system... A few pages down, he turned this analogy around and described the computer itself in neurophysiological terms... In another example, physiological homeostasis was conceptualized as a feedback-controlled servomechanism, while servomechanisms themselves were described in

anthropomorphic terms. The historian Lily Kay argued that “signifying homeostasis as negative feedback and then resignifying such servomechanisms as organismic homeostasis amounted to a circularity.”” (Gerovitch, Newspeak to Cyberspeak, pp. 94-95)

Cyberneticians then expanded this method of false equivocations to broad philosophical questions, and by using semantical tricks and logical fallacies came to their desired conclusions:

“First the cyberneticians asked grandiose questions: What is life? How do we know the world? What governs human behavior? Next they translated these questions into cyberspeak, then substituted for them much narrower versions that could be answered within a particular specialized field of study: mathematics, logic, control theory, or communication engineering. Then they said that these grandiose questions had now been “precisely defined.” After obtaining the answer to a “precisely defined” question, they claimed that it could be applied universally, far beyond the original specialized field. Thus cyberspeak became a universal language for answering grandiose questions.” (Gerovitch, Newspeak to Cyberspeak, p. 96)

3. Cybernetics is a form of mechanism

The problem which was often emphasized by the Soviets is that cybernetics is a modern form of mechanism or mechanical materialism. As the dictionary states, the mechanical materialism of the 17th and 18th centuries equated people and nature to simple mechanical machines. Cybernetics equates

everything to computers or electric calculators. This tendency is extremely widespread today and people have gotten so used to it that they hardly even question it.

However, it goes beyond simply equating living things and societies to dead machines. Cybernetics also sees everything mechanically, metaphysically, i.e. anti-dialectically. It reduces everything to simple “loops”, “feedback mechanisms”, “algorithms”, and “controls”. These loops, circuits and controls are all static and rigid, while reality is fluid, dynamic, complicated and contradictory. The only kind of development and change that cybernetics understands is feedback. It is blatantly evident that this worldview was developed by a bourgeois mathematician and not by a dialectical philosopher.

It is true that some revisionists have tried to explain feedback “dialectically”. Dialectics explains that things have self-motion, i.e. they develop due to their internal contradictions which develop towards something. Some revisionists have claimed that feedback can be understood as a dialectical contradiction. However, dialectical contradictions are not a simple process of action, reaction and another action. That is a simplification which characterizes them taking turns temporally. In reality the contradictions mutually define each other at every single instant. Sometimes a reaction can simply be caused by an action, but their temporal causality can also be reversed, or they can both happen simultaneously.

To make this easier to understand let's use an example. A commodity is a unity of two contradictory things, use-value and value. The contradictions exist within each other, and

cannot be separated into any kind of action at moment 1 and reaction at moment 2.

Let's take another example. In capitalism there exist such categories as wage-labour. This is a phenomenon created by capitalism and maintained by capitalism every day. However, labor is much older than capitalism. Chronologically it emerged much earlier. As such it could not be created by capitalism. The fact is that labor was the basis of capitalism just like capitalism is now the basis for wage-labor. Marx begins his analysis of capitalism with the analysis of the commodity, the product of capitalism. Yet, this product is also much older than capitalism. Capitalism is just as much the product of commodities as the other way around. Such a paradox is difficult to explain as a feedback mechanism.

Commenting on Zeno's paradoxes Engels actually defined motion itself as a paradox and a contradiction. At one moment a body is located at point A and the next at point B. At each separate instance the body is stationary at some point which can be clearly mapped, and yet it is moving and not stationary. How to depict this using cybernetics?

4. Cybernetics is merely a vulgarization of real science Cybernetics tries to explain phenomena similar to automation science, scientific physiology developed by I. P. Pavlov, laws of nature, society and thought discovered by dialectical materialism etc. However, cybernetics does it much more poorly than these other disciplines. In dealing with physiology cybernetics actually plagiarizes Pavlov, but distorts everything and dumbs it down by a factor of ten. This is

understandable since Norbert Wiener had read Pavlov and was aware of his work, but lacked an adequate grasp of physiology or Pavlov's theories. Wiener was a mathematician and if one only has a hammer, all problems look like nails.

5. Cybernetics supports idealism Cybernetics is fully compatible with idealistic notions in sociology, psychology and other sciences. Wiener denied the material basis of cybernetic processes saying "Information is information, not matter or energy." (Wiener, Cybernetics, p. 132)

6. Cybernetics depicts bourgeois inhumanity

Needless to say the capitalists would love to replace every worker with a machine. Machines don't need to be paid wages, and most importantly they will not go on strike or rebel. Imperialists have also harnessed automated or semi-automated machines such as drones for their purposes. The imperialist dream is to have automated weapons systems, which will unhesitatingly commit any atrocity.

Someone might point out that Wiener used pacifist phrases, and eventually did not want to support the USA war machine anymore. However, we are interested in the objective significance of his theory, not his subjective opinion. Wiener actually began developing his theory of cybernetics after his career as a weapons researcher for the military. His attempt had been to create anti-aircraft guns with aim-assisting functions, and later he often claimed that this experience was crucial for the invention of cybernetics. It turns out the guns developed by Wiener did not work, he was fired and the project was ended:

“his anti-aircraft predictor did not work very well, and in January of 1943 his wartime project was terminated”
(Gerovitch, Newspeak to Cyberspeak, p. 61)

“[David] Mindell argues that “cybernetics... recast military control in a civilian mold”... some view it as an extension of military patterns of thinking and behavior into the civilian realm” (Gerovitch, Newspeak to Cyberspeak, pp. 54-55)

Defenders of cybernetics have sometimes asked “how can cybernetics be a dangerous weapon of imperialism, if it is also a useless pseudo-science?”. The last few sentences in the dictionary make this perfectly clear. Cybernetics itself is a pseudo-science, but it is used in propaganda to attract scientists into the field of automation in service of capitalism and imperialism. The media hype about cybernetics all turned out to be false. It did not create superhuman robots which would easily replace men. It did not create any such thing. However, it served the imperialists in an ideological campaign against marxism, as a form of sabotage inside the USSR, and as propaganda in favor of automatic weapons systems. It also served as reactionary utopian propaganda which claimed that all the societal ills of capitalism could be solved with the introduction of cybernetics – thus it prolonged the existence of capitalism and defended it from criticisms.

THE PROPAGANDA TO PROMOTE CYBERNETICS IN THE CAPITALIST WORLD

When Wiener’s book “Cybernetics” was published, it was immediately promoted heavily by the imperialist media monopolies. The media companies praised the book to high heavens claiming it to be

an absolutely essential classic of our era:

“The Saturday Review of Literature noted that it appeared “impossible for anyone seriously interested in our civilization to ignore this book.” “It is,” the magazine commented, “a ‘must’ book for those in every branch of science.””

(Gerovitch, Newspeak to Cyberspeak, p. 96)

After reading the book, I can conclude that it is mostly very low level “pop science”, with very little scientific merit at all. The book consists of stories about Wiener’s career, philosophical ramblings and analogies about how there is no difference between societies, humans, animals and machines.

Couple of chapters consist of mathematical formulae, which I cannot comment on. Those chapters make exactly the same conclusions and claims as the rest of the book. In any case, it seems these chapters were intended to impress non-mathematicians and make the book seem more “scientific” and smarter than it actually is. But why would we ask a mathematician to answer philosophical, social, or even biological questions? Yet it seems these chapters really did impress people, and made them think that this “smart mathematician” could answer all questions about life. Cybernetics promised simple solutions to big problems:

“A large portion of the book was occupied by complex mathematical chapters, which a broad audience could not possibly understand. **These chapters, although “largely irrelevant,” fulfilled an important rhetorical function:** they greatly impressed lay readers, thus conferring legitimacy on the bold claims made in a plain language in the rest of the

book. Cybernetics promised solutions to a wide range of social, biological, and technological problems... Complex social and biological phenomena looked simpler... when described in cybernetic terms.” (Gerovitch, Newspeak to Cyberspeak, pp. 96-97)

The massive propaganda campaign continued until cybernetics became universally accepted in the West:

“The popular press hailed digital computers as “electronic brains.” Scientific American published an accessible account of cybernetics under the provocative title “Man Viewed as a Machine.” The computer specialist Frank H. George threw a challenge to the readers of the English journal Philosophy: “You can’t tell me anything that your wife can do that a machine can’t (in principle). [sic!!]” Political scientists spoke of the “nerves of government.”... Business consultants began to sell “management cybernetics.” (Gerovitch, Newspeak to Cyberspeak, p. 97)

The effects of this campaign are still very much present today. Cybernetic terminology is still widely used in politics, sociology etc. In the field of genetics simplistic cybernetic terminology has become the norm, genes or dna are described as carriers of information, codes, or as blueprints:

“Molecular biologists conceptualized the gene as “the smallest message unit”... Biological specificity was “re-represented through the scriptural tropes of information—message, alphabet, instructions, code, text, reading, program. The narratives of heredity and life [were] rewritten as programmed communication systems.”” (Gerovitch, Newspeak to

Cyberspeak, p. 97)

Let us now deal with the history of cybernetics in the USSR.

WERE CYBERNETICS BOOKS BANNED IN THE STALIN ERA?

A cyberneticist named Kopelev claims they were, but historian V. Shilov says that: “Kopelev’s story made in 1949 is hardly possible.” (Valery Shilov, Reefs of Myths: Towards the History of Cybernetics in the Soviet Union, p. 2)

The information about this is actually very conflicting. Perhaps some books were banned, but the sources don’t agree about this. The fact is that cybernetics books would have been available only in the foreign language libraries, for those who spoke foreign languages, and the general public or even most scientists didn’t care about them.

G. N. Povarov said that “in the Library of Foreign Literature one could get this book freely. There I read it. It was approximately in 1952–1953. So this book was not prohibited by censorship” [3, p. 12]] (Shilov, p. 2)

A.V. Shileyko claimed he had access to the book [Wiener’s “Cybernetics”] at a philosophical seminar in the early 1950s. (Shilov, p. 2)

V. A. Torgashev declares that “Wiener’s book “Cybernetics” published in 1948 was translated in USSR in 1949 (in fact its second edition appeared in the open sale only in 1958. However, the book was available in libraries earlier)” [7, p.48-49].” (Shilov, p. 2)

The notorious revisionist and defector Kolman seems to be the source of many of these myths:

“A. Kolman in the article published after his [defection to] the West wrote that he had read Wiener’s book due the help of some unnamed secretary (very important person!) of the Communist Party Central Committee. But in memoirs published 5 years later he told this story in another way – more extensively and heroically” (Shilov, p. 2)

Of course there would be nothing wrong in principal with refusing to publish cybernetics books, or to remove them from public libraries. The only reason cybernetics books should be and were available to some degree is so that people could criticize them.

THE ANTI-CYBERNETICS CAMPAIGN IN THE USSR

Gerovitch claims in his book, that soviet philosophers were not knowledgeable on cybernetics, and many had not read Wiener’s books but only his interviews. He claims the campaign was based on ignorance and strawmen. However, it seems his source for these statements is Khrushchev’s secret speech and other similar statements at the CPSU 20th Party Congress, which slandered and attacked previous policies and rehabilitated cybernetics. So Gerovitch’s claim is not very credible right off the bat. Secondly, it is clear that the authors of the Philosophical Dictionary were knowledgeable, and their criticism is still fundamentally not different, let alone contradictory, with the criticisms made by the earlier supposedly “ignorant” soviet critics.

It is true that the criticisms of cybernetics evolved somewhat, but that is only natural. During intellectual discussion views always develop and evolve. Initially certain philosophers linked cybernetics with semantic idealism, but this connection was later dropped. Different authors pointed out different aspects of cybernetics, but the main point was always the same: it is a form of modern mechanism and idealism.

But for the sake of argument, let's assume that some soviet critics really did not read Wiener's book *Cybernetics Or Control and Communication in the Animal and the Machine*. Indeed, it seems certain only some read it. Is it necessary to read Wiener's book, in order to conclude that Cybernetics is idealistic and mechanistic? No, it is not necessary at all. The basic premises of cybernetics are fundamentally idealistic and mechanistic and it is completely unnecessary to delve into the intricate details of it to come to this conclusion.

However, I read Wiener's *Cybernetics*, his later book *The Human Use of Human Beings*, as well as other influential cybernetics texts such as *Design for a brain* by W. R. Ashby and his textbook *Introduction to cybernetics*. These books are not worth reading. They are low quality philosophical ramblings and vulgar pop-science, with some mathematics thrown in. These books also did not change my perception of cybernetics one bit, but only confirmed what was already blatantly evident.

Geroovitch claims soviet critics took Wiener's statements out of context, but the same controversial claims demonstrating mechanism (equating humans and societies to machines, to

animals, to viruses etc.) and idealism (claims that “information” and “signals” are not material) are repeated numerous times in books by Wiener and also by Ashby, so this is not a case of taking quotes out of context or of mere slips of the pen on the part of Wiener.

THE SIZE OF THE CAMPAIGN

Marxist philosophers certainly opposed cybernetics. This is made clear by the entry in the short philosophical dictionary. However, it was not considered a very important problem and the “campaign” against it was small:

“the campaign against cybernetics... was not of large scale – there were near ten publications... Anti-cybernetics articles were not published in the occasional press organs” (Shilov, p. 3) but in specialist technical journals, philosophy journals etc.

Shilov is confident he has the complete list of anti-cybernetic articles, and the list includes only 10. However, many of the 10 publications which Shilov lists as “anti-cyberneticist” did not even mention cybernetics. Even the famous article mentioned by every historian “Mark III, a Calculator” by Boris Agapov which ridiculed the Times article “Can Man Build a Superman?” did not directly mention cybernetics. In the opinion of historian Loren Graham there were only 3-4 articles against cybernetics:

“At the beginning of 1950s Soviet ideologists were definitely hostile to cybernetics, despite that the total number of anti-cybernetics articles was probably not more than three or four” (Loren R. Graham, *Science, Philosophy, and Human Behavior*)

in the Soviet Union, p. 272)

If we assume Shilov is correct and Graham is wrong, than this is yet another example of the shoddy quality of bourgeois research. It probably also indicates that the campaign against cybernetics was indeed small, since some of the articles were in publications too niche for Graham to even know about them. However, I think Shilov is exaggerating and trying to increase the number of articles to the maximum, at least by including both the dictionary entry (which Graham doesn't include because it is not an article) and Agapov's "Mark III" (which doesn't mention cybernetics) as anti-cybernetic articles.

Shilov's list of "anti-cybernetics" articles:

-Boris Agapov, "Mark III, kal'kuliator", Literaturnaya Gazeta. 4 May 1950. P. 2.

-Mikhail G. Yaroshevsky, "Kibernetika – «nauka» mrakobesov", Literaturnaya Gazeta. 5 April 1952. P. 4.

-Bernard E. Bykhovskii, "Kibernetika – amerikanskaia lzhenauka", Priroda. 1952. 7. P. 125-127.

-Kirill A. Gladkov, "Kibernetika, ili toska po mekhanicheskim soldatam", Tekhnika – molodezhi. 1952. 8. P. 34-38.

-Yu. Klemanov, "«Kibernetika» mozga", Meditsinskii rabotnik. 25 July 1952. P. 4.

-Bernard E. Bykhovskii, "Nauka sovremennykh rabovladel'tsev", Nauka i zhizn'. 1953. 6. P. 42-44.

-Materialist, "Komu sluzhit kibernetika?", Voprosy filosofii. 1953. 5. P. 210-219.

-“Kibernetika”, Kratkii filosofskii slovar'. Moskva, 1954. P.

236-237.

-Theodor K. Gladkov, “Kibernetika – psevdonauka o mashinakh, zhivotnykh, cheloveke i obshchestve”, Vestnik Moskovskogo universiteta. 1955. 1. P. 57-67.

DID THE CAMPAIGN PREVENT DEVELOPMENT OF COMPUTER TECHNOLOGY?

Cybernetics is a confused and badly defined “science”. As a result it was very often confused with computer technology and automation in general. As a result many people questioned the very existence of the campaign against cybernetics since computer technology was simultaneously highly developed in the USSR:

“Many problems are still the object of acute disputes... Was it [an] anti-cybernetics campaign at all?” (Shilov, p. 1)

P. L. Kapitsa, a conservative but skilled physicist from the tsarist days is a perfect example of this confusion. He argued that since computers are very important, it was a bad idea to attack cybernetics. As if the two are somehow the same thing:

“In 1962 Academician P. L. Kapitsa remarked caustically that ... had our scientists back in the year 1954 paid attention to the philosophers, had they accepted that definition [of cybernetics as a reactionary pseudoscience] as a guide to further development of this particular science, we may safely say that our conquest of space, of which we are so proud and for which the whole world respects us, could never have been a reality, since it is wholly impossible to steer space vehicles without recourse to cybernetics.” (David Holloway, Innovation

in Science-The Case of Cybernetics in the Soviet Union, p. 309)

Iurii Zhdanov, the son of the party theoretician Andrei Zhdanov, also makes the same mistake. He argued that Stalin always supported computer technology and as a result he did not oppose cybernetics:

“Iurii Zhdanov, the former head of the Science Department of the Central Committee in 1951-53, recalled in his memoirs:

“While Stalin spoke against modern genetics, he never opposed cybernetics [by which Iurii means computer technology]. On the contrary, in connection with the space enterprise every effort was made to advance computer technology. In particular, our department had an assignment to help Academician S. A. Lebedev with the construction of the first machines of the BESM type (the High-Speed Electronic Calculating Machine [Bystrodeistvuiushchaia elektronnaia schetmaia mashina]). And that was done...”

The MESM, the first stored-program electronic digital computer in Europe, was already working in Kiev, and two more machines were under construction in Moscow... On 11 January 1950, following the first successful tests of the MESM, the government authorized two independent projects to build large high-speed digital computers: one at the Institute of Precise Mechanics and Computer Technology in Moscow (the BESM), the other at the Special Design Bureau No. 245, also in Moscow (the Arrow [Strela]).” (Slava Gerovitch, “Russian Scandals”: Soviet Readings of American Cybernetics in the Early Years of the Cold War, pp. 563-564)

Gerovitch states categorically:

“The myth that the anticybernetics campaign was a major obstacle to the development of Soviet computing has already been exposed... On the contrary, party and government authorities provided complete support to computing, control engineering, and communications engineering” (Slava Gerovitch, “Russian Scandals”, p. 566)

“Even though cybernetics was labeled in the Soviet press a “pseudoscience,” computers were not considered “pseudo-machines.” Soviet critics of the cybernetics campaign only branded as “idealistic” and “mechanistic” the use of man-machine analogies in the life sciences and the social sciences; they did not at all object to the use of computers for automation and scientific calculations, which were regarded as acceptable “materialistic” applications. The critics even called the invention of a computer a “real scientific and technical achievement” and argued that computers had “great value for the most diverse phases of economic construction.”

Computers, they claimed, could make “calculations of any degree of complexity in the shortest possible time,” being capable of “completely flawless operation and procurement of results.”” (Gerovitch, Newspeak to Cyberspeak, p. 142)

The USSR developed the first digital computers in Europe, the second in the world, and was at the cutting edge of computer technology in the Stalin era. Fields related to computer research and automation were rapidly being developed in the USSR exactly at the same time as the pseudo-science of

cybernetics was condemned:

“it is possible to find in Soviet literature mention of the rationalization of mental labor and of thinking machines as early as 1926” (Maxim W. Mikulak, *Cybernetics and Marxism-Leninism*, p. 454)

“As early as 1934 the Soviet Academy of Sciences had organized a commission on remote control and automation. The year 1936 witnessed the introduction of the journal *Avtomatika i telemekhanika*. In 1950 the Institute for Precision Mechanics and Computer Technology came into existence; its chief function was to develop the practical aspects of programming. And it took three volumes to record the reports made in 1953, at the Second All-Union Conference on the Theory of Automatic Regulation, on the progress of automation and cybernation from 1940 to 1953. Excellent textbooks on servomechanisms and control systems were written by B. S. Sotskov (1950), G. A. Shaumian (1952), and E. P. Popov (1956).” (Maxim W. Mikulak, *Cybernetics and Marxism-Leninism*, p. 464)

David Holloway is an anti-communist historian, but he describes this accurately:

“a distinction was drawn between computer technology and the theories of cybernetics. The former was regarded as an important technological advance, while the latter were seen as a malignant ideological growth on the real science of automatic control. Second, the central focus of cybernetics was seen to be the analogy drawn between the brain and the computer; and particular exception was taken to the view

ascribed to cyberneticians that the only feature distinguishing brain from computer is the former's size and capacity. Cybernetics was condemned for attempting to transfer the laws of motion peculiar to some forms of matter to qualitatively different forms where other, higher, laws operate. It was mechanistic in its disregard for such differences; but in so far as it ignored, dismissed, or failed to solve the problem of human consciousness, it was held to leave the door open to idealism and clericalism. Cybernetics was seen as an excrescence on the decaying body of capitalism, reflecting its inhumanity, its aggression, and its fear of the proletariat. The fascination of the 'thinking machine' for the bourgeoisie lay, it was said, in the hope of substituting automatic machines for recalcitrant workers, or for pilots who might refuse to bomb peasant women working in the rice fields. Finally cybernetics was said to embody the vain hope that 'the contemporary technocrats-the cyberneticians' would be able, with the help of computers to effect substantial changes in the social system. But these ambitions were doomed to failure, for the fundamental problems of capitalist society were not amenable to technological solutions. It was the character of the economic system that determined the course of technological development, not technology that determined social development." (David Holloway, *Innovation in Science-The Case of Cybernetics in the Soviet Union*, pp. 310-311)

"Soviet critics complained that the concept of feedback was much cruder than the Pavlovian concept of reflex. Moreover, cybernetics left open the question of the nature and origins of consciousness, which Pavlov was said to have explained by

reference to speech, the ‘second signalling system’ which was peculiar to man alone. This had developed as a result of man’s involvement in labour and social interaction, with the consequent need for extensive communication between man. Further, in neglecting the content of speech, cybernetics denied an active role to man’s mental activity.

One of the Soviet critics went on to comment on cybernetics as a social theory. He argued that cybernetics, by claiming that man is not, in essence, different from a machine, played down the crucial fact that man lives in society. Hence it made no distinction between different socio-economic formations, and conceived of society merely as a complex mechanism, consisting of a certain number of elements, and subject to mechanistic laws such as that of feedback. By focusing on the structure of communications it ignored the laws of social development; by ignoring the content of social information it made it impossible to grasp ‘the essence of the phenomena of social life’. As a social theory cybernetics rationalized capitalist society by explaining social change in terms of improvement in ‘group information’, without reference to the mode of production. The crisis of capitalist production could be explained away as the self-regulating mechanism of the market. Because of the need for centralized control the cyberneticians argued that world civilization should be centralized-with its headquarters in Washington.” (David Holloway, *Innovation in Science-The Case of Cybernetics in the Soviet Union*, p. 311)

One of the main advocates of cybernetics, the notorious revisionist Aksel Berg claimed that condemnation of

cybernetics had hindered computer research, but even anti-communist Holloway has shown this is completely false:

“In 1960 Academician Berg wrote that ‘it took such a long time to form a sensible attitude to cybernetics that undoubted harm was done to our science and technology ‘... Berg had referred to the way in which the fears of philosophers had held up the development of computer technology; but, as has been mentioned, computer technology was exempted from the initial attacks on cybernetics. In 1949 the first department of Computer Mathematics in the Soviet Union had been set up at Moscow University, and in the following year the Academy of Sciences established an Institute of Precision Mechanics and Computer Engineering. Work on digital computers had begun in the late 1940s, and by 1953 several different computers had been completed.” (David Holloway, *Innovation in Science-The Case of Cybernetics in the Soviet Union*, p. 312)

“In the 1990s, the cybernetics boom was blamed for numerous shortcomings of Soviet science. “This doctrine, which called itself a science of control, chained the technological élan of a great nation,” wrote one commentator in a Russian on-line magazine. “Domestic science wasted immeasurable time and effort on the chimera of cybernetics, while the field of computer technology was deprived of full-scale funding.”” (Gerovitch, *Newspeak to Cyberspeak*, p. 4)

**DID SCIENCE SUFFER UNDER STALIN AND
FLOURISH UNDER KHRUSHCHEV?**

Anti-communist Gerovitch finds it “paradoxical” that science actually developed much better in the Stalin era. There are two simple reasons why this happened: 1) the government gave more funding to science 2) the party gave more guidance to scientists and encouraged criticism of false and fruitless ideas. However, anti-communists have always called this guidance and criticism as something tyrannical which hinders science.

“this image of science suppressed by political interference is hard to reconcile with the impressive scientific achievements of the Stalinist era, which earned Soviet scientists a host of Nobel Prizes in physics and chemistry. In the postwar period, scientific and engineering institutions and large-scale industrial and construction projects aimed at fulfilling Stalin’s ambitious plan of the “great transformation of nature” mushroomed, and the Soviet Union celebrated an unprecedented “cult” of science and technology. It was during this period that Soviet scientists built their first atomic and hydrogen bombs. **Paradoxically, Soviet science appeared to thrive under Stalin’s totalitarian rule better than in the relatively liberal climate of the Khrushchev regime.**”

(Gerovitch, Newspeak to Cyberspeak, p. 5)

“[Loren] Graham has dispelled the popular myth of Soviet scientists’ being blinded by Marxist ideology and has shown how dialectical materialism, the official Soviet philosophy of science, was fruitfully integrated into the scientific outlook of many Soviet scholars.” (Gerovitch, Newspeak to Cyberspeak, p. 5)

“Although Soviet science enjoyed reform and looser

ideological constraints under Khrushchev, it is worth noting that, strictly speaking, Soviet science may have accomplished more under Stalin... Under Stalin, Soviet physicists and chemists pioneered work for which chemist Nikolai Semyonov, physicist Igor Tamm, economist Leonid Kantorovich, and physicist Pyotr Kapitsa received Nobel Prizes decades later. Other Soviet scientists – including Igor Kurchatov, Lev Landau, Yakov Frenkel... and other world-renowned figures – also developed atomic and thermonuclear bombs, a lynchpin in Stalin's rapid and forceful industrialization of the remnants of the Russian Empire from a backwater country into a global superpower in only a few decades... Many Soviet scientists successfully employed dialectical materialism as a genuine source of inspiration, not a forced ideology, in their scientific work.“ (Benjamin Peters, Normalizing Soviet Cybernetics, in *Information & Culture* Vol. 47, No. 2 (2012), p. 153)

CYBERNETICS PROMOTED BY REVISIONISTS

The first stages

In the mid-1950s the revisionists supported cybernetic ideas being advocated. In 1955 a new edition of the Short Philosophical Dictionary was issued, where the entry on cybernetics was removed. In the late-50s cybernetics was no longer called a pseudo-science. However, Soviet scientists, philosophers and engineers still resisted the western pseudo-science. Because they could no longer condemn it as a pseudo-

science, they merely pointed out that it did not have an original subject-matter and did not contribute anything that wasn't already being performed better by actual sciences:

“Ernest Kolman... confirmed the nihilistic state of mind of some of his colleagues toward Wiener's theory and other branches of Western science and revealed the continuing Soviet antagonism to cybernetics; its opponents no longer referred to the theory of control and communication in the machine and living organism as pseudoscience but now argued that it was identical with automation and therefore deserved no separate title to existence. It was apparent to Kolman from the sessions on automation sponsored by the Soviet Academy of Sciences in October 1956 and from the discussions held by the Moscow Mathematical Society in April 1957 that **the very same engineers, technicians, and mathematicians who were furthering automation opposed Wiener's cybernetics** and that the narrow specialists in biology, physiology, psychology, and linguistics could not reconcile themselves to cybernetics because it represented a misalliance” of incongruous disciplines.”” (Maxim W. Mikulak, *Cybernetics and Marxism-Leninism*, *Slavic Review* Vol. 24, No. 3 Sep., 1965, p. 453)

In other words, real scientists opposed cybernetics even after the communist party had stopped condemning it and had adopted a tone of approval. The opposition to cybernetics was not simply imposed on the scientific community by any “tyrannical stalinist official”. The scientists opposed it even on their own.

“It is important to note, however, that it was not the

philosophers alone who rejected cybernetics: In the arguments which were carried on about cybernetics some engineers, technologists and mathematicians, who were themselves doing both practical and theoretical work in the field of automatic systems, came forward as its opponents. They asserted that cybernetics had no right to existence as an independent science, that theories of automata were sufficient.” (David Holloway, *Innovation in Science-The Case of Cybernetics in the Soviet Union*, p. 314)

Kolman Cybernetics was heavily promoted in the USSR by Ernest Kolman who Benjamin Peters in his article “Normalizing Soviet Cybernetics” characterizes as “a failed mathematician” (p. 159). Kolman, who saw himself as a philosopher of science was described as a “true stalinist” but in reality he was only a careerist. His commitment to marxism had always been self-serving and disingenuous. He was hardly someone defending the integrity of marxism from bourgeois pseudo-science and “had spent time in a Stalinist labor camp after World War II for straying from the party line in his interpretation of Marxism.” (Peters, p. 160). This is probably not the actual reason for his imprisonment, but in any case it suggests he was at best guilty of ideological deviations and in all likelihood guilty of crimes against the Soviet Union.

Later Kolman defected to Sweden where he openly rejected Leninism entirely and strongly criticized both Marx and Engels. Many of his stories about his past have also been debunked, so nobody should really trust him.

In the late 50s he began promoting cybernetics through

writings and speeches. To give cybernetics some credibility Kolman actually linked it to the idealist revisionist Bogdanov, and revisionist traitor Bukharin:

“Along with Bogdanov’s tectology, Kolman also numbers Bucharin’s praxeology among the first beginnings of Soviet cybernetic research” (Michael Csizmas and Patrick McNally, *Cybernetics, Marxism, Jurisprudence, Studies in Soviet Thought* Vol. 11, No. 2 (1971), p. 90)

The other main supporter of cybernetics, Aksel Berg, also described cybernetics as a universal science of government similar to the ‘universal organizing science’ or tectology of Bogdanov, which also had a large influence on Bukharin:

“Berg actively used his huge influence and connections in the party and government to promote cybernetics as a universal “science of government,”” (Slava Gerovitch, “Russian Scandals”, p. 566)

Other revisionists, for example the East German Georg Klaus made the laughable claim that developers of cybernetics Ashby and Wiener both “produce... clearly recognizable dialectic and materialistic trains of ideas” (*Kybernetik in philosophischer Sicht*, p. 23, quoted and translated in Gotthard Günther, *Cybernetics and the dialectic Materialism of Marx and Lenin*, p. 8)

The trio Sobolev, Liapunov and Kitov

Together with Kolman and Berg, the originators of cybernetics in the USSR were mathematicians Sergei Sobolev, Aleksei Liapunov and computer engineer Anatoly Kitov. Together they

wrote the influential early pro-cybernetics article “The Main Features of Cybernetics”. (Gerovitch, Newspeak to Cyberspeak, p. 173)

“In the autumn of 1954 Liapunov organized a “seminar on machine mathematics” at Moscow University. He did not limit seminar topics to purely mathematical problems, however. Liapunov... incorporated the entire range of cybernetic issues into the seminar’s agenda. Liapunov’s seminar met regularly for several years and served as a nexus of public exchange of cybernetic ideas... While cybernetics was still referred to in the press as a “reactionary pseudoscience,” the participants of Liapunov’s seminar openly discussed most recent Western cybernetic works” (Gerovitch, Newspeak to Cyberspeak, pp. 174-175)

During the discussion of the article “The Main Features of Cybernetics” by Sobolev, Liapunov and Kitov “The Deputy Editor-in-Chief of Voprosy filosofii, Mark Rozental’, objected to the use of the word memory with respect to computers, arguing that memory was a mental attribute. Kitov replied that memory was nothing more than “the ability to preserve information” and contended that “one should not be afraid of calling this thing memory both here and there [in men and machines].” “Why can’t we say memory but have to say storage device?” he asked. “The matter is to preserve a difference between man and machine,” Rozental’ explained. “The real difference is that man is a social being; he is formed under the influence of his [social] environment. There is no need to see a difference where it is not even tangible,” Kitov retorted.” (Gerovitch, Newspeak to Cyberspeak, p. 181)

“In October of 1958, speaking on cybernetics at the All-Union Conference on Philosophical Problems of Natural Science, Sobolev brushed aside the philosophical critique of cybernetics as utterly irrelevant:

“We [Sobolev and Liapunov] admit that we do not even understand some of these [philosophical] questions in relation to cybernetics... One cannot divide physics into materialistic physics and idealistic physics... There is no such thing.”

...Sobolev did not use any philosophical arguments to refute the charge of idealism; instead, he claimed that philosophical terminology simply was not applicable to cybernetics.”
(Gerovitch, Newspeak to Cyberspeak, pp. 181-182)

One could ask, if the cyberneticians even admit that they do not understand philosophical questions or philosophical objections to cybernetic claims, how can they be so arrogant as to simply reject these criticisms without even understanding them?

Sobolev and Liapunov also clearly were not familiar with Lenin’s words that:

“no natural science... can hold its own in the struggle against the onslaught of bourgeois ideas and the restoration of the bourgeois world outlook unless it stands on solid philosophical ground. In order to hold his own in this struggle and carry it to a victorious finish, the natural scientist must be a modern materialist, a conscious adherent of the materialism represented by Marx, i.e., he must be a dialectical materialist.”
(Lenin, On the significance of militant materialism)

Cybernetics is accepted officially by the Khrushchevites

Cybernetics was finally adopted officially by the revisionists at the 20th party congress, and adopted into the party program at the 22nd party congress:

“In 1961 the Central Committee began promoting cybernetics at the Twenty-Second Party Congress as “one of the major tools of the creation of a communist society.” First Secretary Nikita Khrushchev in particular promoted a far-reaching application of cybernetics.” (Benjamin Peters, “Normalizing Soviet Cybernetics”, *Information & Culture* Vol. 47, No. 2 (2012), p. 164)

“In 1958 an entry on cybernetics finally appeared in the additional volume 51 of *The Great Soviet Encyclopedia*... This article acknowledged Norbert Wiener’s pioneering role in the development of cybernetics and effectively legitimized this field in the Soviet Union. The author of this article was none other than Andrei Kolmogorov [famous mathematician and cybernetist]. A separate article, co-authored by Kolmogorov’s student, was devoted to Wiener...” (Gerovitch, *Newspeak to Cyberspeak*, p. 151)

To rehabilitate cybernetics its supporters avoided discussing philosophical problems, instead going for a “neutral” technocratic approach. Cybernetics terminology was changed to hide its mechanistic character, the word “mechanism” was removed from all descriptions of cybernetics by its developers, Wiener’s “feedback mechanism” was renamed “the theory of feedback”. The revisionist authors emphasized the theoretical

nature of cybernetics to distance it from American pragmatism. (Benjamin Peters, “Normalizing Soviet Cybernetics”, p. 156)

By the 1960s the revisionist leaders had decided that cybernetics was so important, that it should be given its entire division in Soviet science. Keep in mind, the entire scientific establishment in the USSR consisted of only three large divisions: physico-technical and mathematical, chemico-technical, and biological. The revisionists claimed that the fashionable western pseudo-science was as important as these major divisions of science!

“In the later 1960s the Academy of Sciences of the USSR vaunted cybernetics as an entire division of Soviet science, one of only four divisions.” (Benjamin Peters, “Normalizing Soviet Cybernetics”, p. 167)

Things became even more ridiculous, when revisionists began arguing that really all the other fields should be subordinated under cybernetics, and seen as mere subcategories of it:

“Others waxed extravagant in arguing that even the remaining three divisions – “the physico-technical and mathematical sciences, chemico-technical and biological sciences, and social sciences” – could be read, without much conceptual violence, as subfields of the overarching expanse of Soviet cybernetics, given its ecumenical commitment to stitching together the mechanical, the organic, and the social: a totalizing mission begun with Wiener’s attempt to analogize (in his subtitle to his 1948 *Cybernetics*) “the animal and the machine” and later (in his subtitle to 1950’s *The Human Use of Human Beings*)

“cybernetics and society.”” (Benjamin Peters, “Normalizing Soviet Cybernetics”, p. 167)

Cybernetics departments kept multiplying like viruses.

Cybernetic were created for everything imaginable. Cybernetic psychology, cybernetic geography, cybernetic economics.

What’s next? Cybernetic art and cybernetic cuisine?

“Adopting this broad view institutionally, the Academy of Sciences originally categorized cybernetics into eight sections, including mathematics, engineering, economics, mathematical machines, biology, linguistics, reliability theory, and a “special” military section. With Berg’s influence on the Council on Cybernetics, the number of recognized subfields grew to envelop “geological cybernetics,” “agricultural cybernetics,” “geographical cybernetics,” “theoretical cybernetics” (mathematics), “biocybernetics” (sometimes “bionics” or biological sciences) , and, the most prominent of the Soviet cybernetic social sciences, “economic cybernetics.””(Benjamin Peters, “Normalizing Soviet Cybernetics”, p. 167)

Cybernetic legal theory was added, and naturally the new western fad “semiotics” developed by bourgeois linguists and idealist philosophers, was thrown in and given its own department:

“By 1967 the range of sections had expanded to include information theory, information systems, bionics, chemistry, psychology, energy systems, transportation, and justice, with semiotics joining the linguistic section and medicine uniting with biology.” (Benjamin Peters, “Normalizing Soviet

Cybernetics”, p. 167)

CYBERNETICS AS A SHIELD FOR OTHER

REACTIONARY THEORIESLeading cyberneticists were reactionaries who had been fighting against genuine science.”In July 1954 Sobolev published an article in the leading Party organ, Pravda... Using dogmatism as a euphemism for the Stalinist legacy in Soviet science, Sobolev specifically attacked the schools of Lysenkoist biology and “Pavlovian” physiology” (Gerovitch, Newspeak to Cyberspeak, p. 164)

Cybernetics became a haven for all kinds of idealists and revisionists, pseudo-scientists in all fields from psychology, linguistics to law and natural science:

“Sheltering a huddling crowd of unorthodox sciences, including “non-Pavlovian physiology (‘psychological cybernetics’), structural linguistics (‘cybernetic linguistics’), and new approaches in experiment planning (‘chemical cybernetics’) and legal studies (‘legal cybernetics’),”” (Benjamin Peters, “Normalizing Soviet Cybernetics”, p. 167)

The acceptance of cybernetics did not only mean that a useless pseudo-science was adopted in the field of automation or electronics. It served to promote pseudo-science and to attack real sciences in many other fields, particularly in physiology, but also psychology, biology etc.

“Cybernetics began to serve as an institutional umbrella for various unorthodox research trends previously suppressed by dominant Stalinist schools... “biological cybernetics” (genetics), “physiological cybernetics” (non-Pavlovian

“physiology of activity”), and “cybernetic linguistics” (structural linguistics).” (Gerovitch, Newspeak to Cyberspeak, p. 8)

In 1960 “there appeared an article by Ljapunov and Sobol’ev, ‘Cybernetics and Natural Science’, in which the thesis of acquired inheritance was rejected” and the authors attacked michurinism and defended mendelism by saying that “classical genetics is in agreement with cybernetics.” (Michael Csizmas and Patrick McNally, Cybernetics, Marxism, Jurisprudence, p. 94)

“Problemy kibernetiki, for example, published papers on the application of cybernetics to genetics, thereby providing a haven for geneticists.” (David Holloway, Innovation in Science-The Case of Cybernetics in the Soviet Union, p. 327)

Pavlovian physiology was not compatible with cybernetics, and therefore it had to be destroyed. The council setup to maintain Pavlov’s work was dissolved:

“Of the more specific objections raised to cybernetics, that based on Pavlovian theories about higher nervous activity no longer carried the same force, since the Pavlovian orthodoxy had been greatly weakened in the mid-1950s... The Council on the Problem of the Physiological Teaching of Academician I. P. Pavlov, which had been set up to ensure that the resolutions of the 1950 Conference were enforced, seems to have held its last meeting in 1953. See Vestnik Akademii Nauk 0953, 6), 6I-2.” (David Holloway, Innovation in Science-The Case of Cybernetics in the Soviet Union, p. 331)”The frontiers between physiology and engineering are

those where cybernetics has had most effect on the conduct of research, and here the situation was more complex.

Cybernetics was condemned as incompatible with Pavlov's theories; consequently the reaffirmation of Pavlovian teaching in 1950, and the subsequent purge of those who had attempted to revise his work, provided a powerful obstacle to cybernetics. One of those purged in 1950 exemplifies this clearly. In the 1930s P. K. Anokhin... had introduced into the physiology of the nervous system the idea of the 'return afferentation' of the results of an action to the actor-almost identical with the concept of feedback. This work, however, was condemned for conflicting with the Pavlovian theory of the reflex arc. Anokhin had attempted to rehabilitate his own work in the light of cybernetics:

When cybernetics appeared on the scene and when I began to talk of our Soviet priority in the theoretical treatment of physiology, friends told me: 'Give up talking about that!' It's alright to outstrip a scientific discovery by eleven years, but we don't advise you to outstrip bourgeois obscurantism by eleven years. In as much as research in physiology was held up it was by the stress on Pavlovian orthodoxy, and only at second remove by the attacks on cybernetics." (David Holloway, *Innovation in Science-The Case of Cybernetics in the Soviet Union*, pp. 312-313)

"Nikolai Aleksandrovich Bernshtein (1896–1966), who would later play the leading role in Soviet "physiological cybernetics." Throughout his career, Bernshtein spoke openly and consistently about his disagreement with Pavlov's doctrine of conditional reflexes... As early as 1934, Bernshtein

proposed to replace the classical Pavlovian concept of the “reflex arc” with a “reflex circle.”” (Gerovitch, Newspeak to Cyberspeak, pp. 44-45)

“Bernshtein... disagreed with Pavlov conceptually and did not even attempt to portray himself as an orthodox Pavlovian, became a prominent target of ideological criticism... His critics... accused him of attempting to “belittle” Pavlov’s significance. Furthermore, since Bernshtein cited foreign [imperialist] authors, he was charged with “kowtowing before foreign scientists” and “anti-patriotism.” The critics also attached to Bernshtein’s doctrine the usual labels: idealism (for using mathematical analysis) and mechanicism (for regarding the human body as a self-regulating mechanism). They even accused him of holding onto the “false theory of mutations” (i.e., genetics). At the 1950 “Pavlov session,” critics alleged that he knew “neither the letter nor the spirit of Pavlov’s teachings.”” (Gerovitch, Newspeak to Cyberspeak, p. 46)

“The “father of Soviet cybernetics,” Aleksei Liapunov, had developed a longterm friendship with a number of leading Soviet geneticists since the early 1940s, when he was involved in a controversy between Kolmogorov and Lysenko over the validity of statistical analysis in the interpretation of genetic experiments. In the late 1940s, Liapunov organized a kruzhok (a “circle,” a home study group)... he offered informal courses on genetics and the theory of probabilities and statistics, which were not taught to biology students at the university. Risking his position as a Party member and a researcher at a closed institution working on classified projects, Liapunov often invited persecuted geneticists to give guest lectures and

transmit their “forbidden knowledge” to this select group. Geneticists... seized this opportunity... Such prominent biologists as Dubinin, Romashov, Sakharov, Timoféeff-Ressovsky, Zavadovskii, and Zhebrak spoke at the meetings of Liapunov’s kruzhok.” (Gerovitch, Newspeak to Cyberspeak, p. 183)

Liapunov was involved in signing the anti-lysenko letter of 94 reactionary scientists in 1955 which was expanded in 1956 to the so-called “letter of 300”.

“Liapunov signed the addendum and took an active part in soliciting signatures from influential Soviet scientists; in particular, he managed to obtain Sobolev’s support” (Gerovitch, Newspeak to Cyberspeak, p. 184)

“Liapunov’s propagation of cybernetic ideas was closely connected with his defense of genetics.” (Gerovitch, Newspeak to Cyberspeak, p. 186)

“The cybernetics movement began to spread over a wide range of disciplines. “Biological cyberneticians” challenged the Lysenkoites in biology; “physiological cyberneticians” opposed the Pavlovian school in physiology; “cybernetic linguists” confronted the traditionalists in linguistics. The opponents of dominant schools in various fields began speaking the language of cybernetics.” (Gerovitch, Newspeak to Cyberspeak, p. 204)

“As the historian Mark Adams has demonstrated, genetics “hid under protective language: to cognoscenti, such terms as ‘radio-biology,’ ‘radiation bio-physics,’ and ‘physico-chemical

biology' functioned as a kind of protective mimicry, serving as euphemisms for both orthodox genetics and molecular biology." Genetic research was conducted not in biological institutions (which were controlled by the Lysenkoites) but under the roofs of physical and chemical research institutes. One of the code names for genetics in this period was cybernetic biology." (Newspeak to Cyberspeak, p. 211)

"In October of 1958, at the All-Union Conference on Philosophical Problems of Natural Science, Aleksei Liapunov and Sergei Sobolev delivered a paper in which they portrayed [mendelian] genetics as an implementation of the cybernetic approach in biology" (Newspeak to Cyberspeak, p. 211)

"Liapunov became the head of the Biological Section of the Council on Cybernetics; as the editor of the series Problemy kibernetiki... he published works on genetics. In particular, Liapunov helped his close friend Nikolai Timoféeff-Ressovsky [a mendelist who had defected to Germany and worked for the Third Reich]... to resume active research and publications after returning from Stalinist labor camps. Timoféeff-Ressovsky's first lecture after his return to Moscow was given at an informal gathering in Liapunov's apartment... Thanks to Liapunov's efforts, however, this article, written in collaboration with the geneticist Raisa Berg, appeared in the fifth volume of Problemy kibernetiki in 1962. To justify this publication, Timoféeff-Ressovsky and Berg injected a few cybernetic terms in their article." (Newspeak to Cyberspeak, p. 212)

"Speaking at the 1962 conference, the leading specialist in

pattern recognition, the mathematician Mikhail Bongard of the Institute of Biophysics, argued that Pavlovian reflex theory, if subjected to a cybernetic test, failed to explain pivotal physiological mechanisms” (Newspeak to Cyberspeak, p. 222)

“Bongard argued that reflex theory was clearly not adequate for explaining higher nervous activity... Instead, Bongard argued, one must look for a solution by building cybernetic models.” (Newspeak to Cyberspeak, pp. 222-223)

“Sobolev, in particular, argued that there was no limit to the applicability of notions of cybernetics to living organisms: “In cybernetics, a machine is defined as a system capable of accomplishing actions that lead to a certain goal. Therefore, all living organisms, and human beings in particular, are in this sense machines. Man is the most perfect of all known cybernetic machines. . . . There is no doubt that all human activity manifests the functioning of a mechanism, which in all its parts obeys the same laws of mathematics, physics, and chemistry, as does any machine.” Pavlovian physiologists tried to oppose this trend, but they could hardly resist the thrust of the cybernetics wave.” (Newspeak to Cyberspeak, p. 224)

TECHNOCRACY Ever since the rise of Khrushchev, the Soviet revisionists had tried to create a “less political” technocratic system. Western imperialist ideas were not seen as questionable by the revisionists, instead they were embraced in the hope of gaining somekind of pragmatic usefulness. Khrushchev’s corn fiasco, which attempted to transplant American hybrid corn into the USSR is only one notorious example. The technocrats also encouraged Soviets to

not criticize Western imperialist “innovations”, and as a result doctrines like cybernetics, “brutalism” in architecture etc. were imported from the West to the USSR. The technocrats wanted optimal pragmatic solutions, and considered them “non-ideological”—their use of brutalism being a prime example. But brutalism is also a prime example of how this kind of supposedly non-ideological system is actually completely ideological. Brutalism, an imperialist Western trend, replaced Socialist Realism in architecture.

Lenin said:

“to belittle the socialist ideology in any way, to turn aside from it in the slightest degree means to strengthen bourgeois ideology.” (Lenin, What is to be done?)

The revisionists gleefully accepted “pragmatic” technocratic solutions very similar to right-deviators of the past, such as Bukharin and his use of Bogdanov’s “universal organizing science”:

“In the 1960s, “optimal planning and control” became a motto of the cybernetic movement. Soviet cyberneticians assumed that the main problem of the Soviet economy lay in the inefficient mechanisms of data collection, information processing, and control, and offered a solution based on mathematical modeling and computer-aided decision making. They believed that computers produced a politically neutral, “optimal” solution” (Gerovitch, Newspeak to Cyberspeak, p. 256)

“In the late 1960s, cybernetic ideas were incorporated into the

writings of a leading Party theoretician, the philosopher Viktor Afanas'ev... Adopting terms from cyberspeak, Afanas'ev began talking of “social information” and “the scientific management [upravlenie] of society.”... During the early anti-cybernetics campaign, Soviet critics had attacked cybernetics for being a “technocratic theory.” Now the ideological attitude toward technocratic aspirations of cyberneticians was completely reversed. In 1967 the authors of the fifth volume of Cybernetics—in the Service of Communism wrote with pride that “the view of society as a complex cybernetic system with a multi-dimensional network of direct and feedback links and a mechanism of optimization, functioning towards a set goal, is increasingly gaining prestige as the main theoretical idea of the ‘technology’ of managing society.”... Berg’s Council on Cybernetics played a crucial role in the ideological rehabilitation of the legacy of Aleksei Gastev and other Soviet pioneers of the [bourgeois anti-communist theory of] “scientific management” movement of the 1920s.” (Gerovitch, Newspeak to Cyberspeak, p. 285)

As Lenin had said, belittling Marxism would of course lead to it being replaced by bourgeois ideology more and more.

RE-WRITING OF MARXISM TO SERVE CYBERNETICS

First in the Khrushchev era cybernetics was fully rehabilitated:

Under A. Berg’s leadership a philosophical section was created “to reconcile cybernetics with dialectical materialism **by adapting dialectical materialism to cybernetics.**

Philosophers loyal to cybernetics duly accomplished this task.

First, **they managed to incorporate the concept of information into the canonical list of categories** of dialectical materialism.” (Gerovitch, Newspeak to Cyberspeak, p. 258)

“Cybernetics occupied a prominent place in the fundamental five-volume Philosophical Encyclopedia, published in 1960–1970. The philosopher Aleksandr Spirkin, head of the Philosophical Section, served as Deputy Editor-in-Chief of the encyclopedia, and he secured the publication of an 11-page article on cybernetics. (The article on mathematics was only 6 pages long.) The encyclopedia also included as separate entries such terms as **control systems, information theory... thus turning them into philosophical categories.** The encyclopedia article on cybernetics fully reflected the new domination of cybernetic discourse over the old philosophical clichés [i.e. over marxism]. The first draft, written by Ernest Kolman, was mildly critical of cybernetic claims, but after a discussion at the Philosophical Section of the Council on Cybernetics it was forcefully rejected. Kolman emphasized the “qualitative differences” between humans and machines, and argued that cybernetic devices did not have consciousness and therefore could not think. Cybernetics supporters brushed such formulations aside... The new version, which was eventually published, placed no philosophical limits on cybernetics” (Gerovitch, Newspeak to Cyberspeak, p. 259)

In the Brezhnev era this went even further:

“Afanas’ev quickly translated the basic principles of operation of the Soviet government into cyberspeak... The government,

the Communist Party, and other political and public organizations constituted the controlling subsystem, while the economy, science, and other social activities made up the controlled subsystem. The Party, “the most important element of the scientific control of socialist society,” played, of course, the role of the chief controller” (Gerovitch, Newspeak to Cyberspeak, p. 285)

Thus the brezhnevites reduced even Marxism to cybernetics, the Marxist theory of the party and state was now being replaced by bourgeois pseudo-science!

“the Party principle of “democratic centralism,” for example, could easily be interpreted as control by means of feedback.” (Gerovitch, Newspeak to Cyberspeak, p. 286)

ECONOMIC CYBERNETICS Naturally, Western imperialist economic theories were also studied by the revisionists, and they experimented with market mechanisms. Revisionist theories were also rehabilitated. Khrushchev had created the system of de-centralized regional planning. The Kosygin-Liebermann reforms of 1965 introduced profitability or the profit-principle as the guide for enterprises (which had explicitly been condemned by Stalin in his “Economic Problems of Socialism in the USSR). Cyberneticists also suggested de-centralized planning.”The idea of indirect centralization, introduced by [cyberneticist] Viktor Novozhilov, was based on a mathematical theorem stating that the equilibrium point in a many-person non-coalition game would be an optimum. Applying the results of game theory to the Soviet economy, economic cyberneticians argued that the

central government did not need to impose specific output quotas on individual enterprises; instead, it could set “optimal” prices and investment efficiency norms, then allow individual enterprises to make their own decisions. If the criteria of economic performance were properly formulated, the independent activity of individual enterprises should lead to the fulfillment of the national plan. In contrast to the accepted view, economic cyberneticians argued that the ideal of “optimal planning” could be achieved by a radical decentralization of economic decision making and a regulated use of the market mechanism:

“The finding of an optimum may take place in a decentralized way, i.e. the equilibrium point, or optimum, can be found as a result of an exchange of information between economic organs, each of which independently solves the problem of optimization guided by its own individual (local) criterion of optimality. . . . **In this way, it is possible to use the market mechanism** for organizing the process of the decentralized working out of the optimal plan.”” (Gerovitch, Newspeak to Cyberspeak, p. 274)

“Describing the Soviet economy in quintessential cybernetic terms, Novozhilov argued that the market mechanism was equivalent to the feedback principle:

“By now it is already widely known that cybernetics justifies khozraschet [the profit-principle] as the compensator of randomness in a planned economy. A socialist economy is a very complicated system subject to the activity of a multiplicity of random factors and not lending itself to

description in full detail. The control of such systems is possible **only on the condition that there exists a self-regulator with feedback... the market mechanism is such a regulatory mechanism...** The detailing, correction and fulfillment of the plan must be regulated by khozraschet.””
(Gerovitch, Newspeak to Cyberspeak, p. 275)

Novozhilov argued that rational planning was impossible and that a socialist economy was impossible without a mindless “self-regulator” and that this regulator must be the market.

The cyberneticians tried to refute Marxism and considered value to be entirely irrelevant when it comes to prices. That is an anti-marxist statement in line with unscientific vulgar economics.

“Economic cyberneticians strongly emphasized their reliance on “objective” computation and “objective” valuations. Contrasting their approach with the traditional discourse of Soviet political economy, which was loaded with ideological formulas borrowed from the Marxist theory of value, they strongly asserted the discursive autonomy of economic cybernetics from political economy: “[The Marxist concept of] value and objective valuations are two completely different and incommensurable things. Value is a category of political economy and objective valuations are an algorithmic formula for the calculation of equilibrium prices in an optimal plan. [footnote 82, chapter 6]” (Gerovitch, Newspeak to Cyberspeak, p. 275)

The arrogance of the revisionists was shown by the fact that they assumed cybernetics must be correct, and since political

economy doesn't fit with cybernetics – so much the worse for political economy, it must be thrown into the trash. Keep in mind that this was being argued by Kantorovich, who himself was not an economist at all, but an engineer. Glushkov was not an economics expert either, but a mathematician:

“Sharply criticizing orthodox economists at a 1959 session of the Academy of Sciences, Kantorovich argued that the impossibility to translate their theories into cyberspeak made the shallowness of these theories self-evident” (Gerovitch, Newspeak to Cyberspeak, p. 276)

FEW REMARKS ON OGAS – A NATIONWIDE COMPUTER NETWORK

In the 1960s cyberneticists advocated building a nationwide network of computers, which could be used to plan the economy. Of course, this would've meant their distorted view of planning with market mechanisms. This project was supported by all cyberneticists, but its main architect was Glushkov.

The computer network (known as OGAS) was supposed to link each production facility, each warehouse and each shop to a network which would connect them to computer centers. These centers would track the amounts of products and resources and carry out necessary calculations. The plan eventually failed because of its impracticality. It would've been astronomically expensive. There were also bureaucratic problems, as different government organs, both civilian and military, would've had to share information and even share the

same computers.

In principle a computer network for economic planning is not a bad idea, but its also not a universal panacea, or a magic fix, like the cyberneticians claimed. They believed that the only problems in the revisionist Soviet society were problems of optimal organization. They believed that all problems could be solved through technology, which is deeply misguided. The truth is that 1) problems of the revisionist Soviet society could have been solved even without such a computer network, and 2) such a computer network on its own would not have solved the problems.

Let's discuss what exactly the computer network was intended to achieve.

“Glushkov indeed admitted that his project for a nationwide network of computation centers would cost more than the space program and the atomic project put together.”

(Gerovitch, Newspeak to Cyberspeak, p. 278)

Yet, how much more could be achieved if these massive funds were put into other projects? The cost of the project strongly hindered it from being completed, but we must also ask if the project itself even made any sense. The idea of a fully computerized planning system, where every factory, enterprise, warehouse and shop are connected to computer networks sounds very good. It would improve efficiency because people wouldn't need to write as many reports, wouldn't need to make calculations in their head, and the computer would tell people how to organize scheduling of shipments, organize construction etc. more efficiently.

But we must ask, if there is an industrial plant which uses technology of the 1930s, 1940s or 1950s, is adding computers to the plant really the best use of resources? Doubling the budget could massively improve the technology used in heavy industry. Hydraulics were being improved, coal boilers were used but gradually diesel generators became more prevalent. Electronics replaced mechanics. These kinds of improvements helped the Soviet economy grow massively in the post-WWII era, and also allowed for growth of the productive forces in the West. Computers would have improved production much less, but their cost would have been astronomical. It simply wouldn't make sense. Imagine for the sake of argument that a computer improves efficiency by 10% so that we need 9 people to do what previously required 10. By giving every collective farm new better tractors, repairing old tractors, or by giving miners new drills, construction workers new excavators, would "free up" much more labor, much more cheaply.

Buying a computer in the 1960s, just so that a warehouse – let alone a simple shop – could track its inventory, would be madness, when the computer would cost so much that we could hire the necessary personnel to check the inventory 100 times over. Nowadays the situation is different. Computers and networks are cheap, wages are high, and it is more difficult to improve production through inventions in heavy machinery. But we shouldn't impose our modern context back to the 1960s.

"Several pilot projects aimed at the development of small-scale computerized systems for production control and

information management at individual factories had little success. “Optimal” control yielded poor results when the technology of production was old and obsolete, as was often the case at Soviet factories. At a metallurgical plant in Dneprodzerzhinsk, the use of computers to control a technological process saved minutes, while hours were wasted because of inefficient technology, faulty sensors, and lack of coordination among the stages of production. Glushkov admitted that any potential profit from management-information systems was also lost because of constant interruptions in supply and the inefficient organization of the industry as a whole. “Optimal planning and control” turned into a pure mathematical abstraction.” (Gerovitch, Newspeak to Cyberspeak, p. 278)

It is quite funny to hear anti-communists like Gerovitch, and revisionists like Glushkov lament the supposedly bad state of the Soviet economy. They talk about “old machines”, meaning machines less than 20 years old. In heavy industry it is common and often even rational to use machines for 15 years. They were talking about interruptions in supply etc. and blamed it all on “communism”. But these problems were never unique to the USSR. The same exact issues are part of production, a fact of life, even today in the most high-tech capitalist countries. Their complaints simply show how out of touch with the reality of production these cybernetic utopians were.

In the factory where I work, there is constant massive inefficiency due to “human errors”, due to shipments of raw materials not arriving on time, due to bottlenecks because of

bad planning or due to mistakes, due to unpredictable breakdowns of machines, due to repair staff being too busy, due to constant problems with faulty raw materials etc. etc. And yet, all the inventories are tracked by computers automatically. A custom-built computer system is used for calling repair crews (often times they don't respond to the computer system, so workers have to walk to their office physically, or call them on the phone). At best, the computer automatically tells us if we are running out of materials – but that wouldn't be very difficult for a human to do. The computer tracks how many orders still need to be fulfilled, it tracks the production quotas of workers etc. which is a legitimate help, but not something revolutionary. Perhaps the most innovative thing is that the computers automatically track error messages from machines in the production process, which can alert managers that there is a problem in production. But often times these systems don't work – or it is entirely redundant, because the workers themselves always immediately recognize the problem themselves.

This is not to detract from the usefulness of computers. Computers serve useful functions, and they should also be used to aid economic planning.

So what would've been the appropriate use for computers in the 1950s and 1960s in the USSR? Computers should've been used as massive calculators, to calculate the most difficult problems which humans practically could not do. They should've been used in science and in every field where mathematics is needed. Military and scientific computers should be allocated based on the needs of various institutes, so

that smaller institutes might get their own smaller computers, or many institutes would share one big computer. This, in fact, is exactly what was done in the late Stalin-era.

Eventually, automatic information collection and processing, and telecommunication could be used, when it became economically viable i.e. cheaper and more useful. Instead of trying to spread computers everywhere, they should be centralized because they were so expensive and scarce. There was also a lot of room for the economy to grow even without computers. In the late Stalin-era the USSR was attempting to massively increase agricultural yield through mechanization and agricultural practices, to massively increase industrial production by building new plants, equipping them with new machines etc., and trying to improve education through numerous ambitious projects. To accomplish these necessary and extremely rewarding tasks (which the revisionists never fulfilled) computers had only very limited applicability, but they were put to good use for scientific problems, military ballistic calculations, weather forecasting etc.

“Glushkov argued that, unless the processing of economic information was automated, by the mid 1980s nearly the entire adult population of the Soviet Union would be engaged in planning, accounting, and management.” (Gerovitch, Newspeak to Cyberspeak, p. 281)

This is simply a gross exaggeration. It also assumes that the cybernetic de-centralized planning system was not an economic plan at all. In reality the cybernetic “plan” included increased market mechanisms.

THE FAILURE OF CYBERNETICISTS TO DEFINE WHAT THEIR “SCIENCE” EVEN IS
“Cyberneticians, who aspired to make other scientific disciplines more objective by “cybernetizing” them, could hardly agree, however, on exactly what cybernetics meant.” (Newspeak to Cyberspeak, p. 246)

Cyberneticists couldn't even agree on what cybernetics is. It was becoming very evident that this “science” was sterile and had reached a dead end. Years went by, and the task of explaining what this new “science” was, remained unfulfilled:

“the internal discord among mathematical cyberneticists swelled, suggesting anything but a unified front. Leading Soviet cyberneticists defined the field in dramatically different terms: Kolmogorov fought to claim information as the base of cybernetics, whereas Markov preferred probabilistic causal networks, Lyapunov set theory, and Iablonskii algebraic logic. In 1958, only three years after their initial article, Kitov, Lyapunov, and Sobolev published an article outlining four more definitions of cybernetics in the Soviet Union, emphasizing the dominant study of “control systems,” Wiener's interest in “governance and control in machines, living organisms, and human society,” Kolmogorov's “processes of transmission, processing, and storing information,” and Lyapunov's methods for manipulating the “structure of algorithms.”” (Benjamin Peters, “Normalizing Soviet Cybernetics”, p. 166)

Like true cosmopolitans they romanticized the American founder of cybernetics and appealed to him as some kind of

mythic authority. All these claims about the efficacy and clearness of cybernetics were totally fictitious. Just as fictional was the status of Wiener as an authority:

“Igor Poletaev, a leading Soviet information theorist... argued in 1964 against the then-plastic understanding of cybernetics. He legitimated his call for disciplinary coherence by invoking the iconic and mythically clear foreign founder, Norbert Wiener, claiming that “‘terminological inaccuracy’ is unacceptable, for it leads (and has already led) to a departure from Wiener’s original vision...” (Benjamin Peters, “Normalizing Soviet Cybernetics”, p. 166)

“Poletaev continued, “the specificity of the cybernetic subject matter completely disappears, and cybernetics turns into an ‘all-encompassing science of sciences,’ which is against its true nature.”” (Benjamin Peters, “Normalizing Soviet Cybernetics”, p. 166) However, in reality, this confusion precisely is the true nature of cybernetics.

“The mathematician Nikolai Timofeef-Ressovsky, a practicing cyberneticist, once put the same sentiment in lighter terms... he replaced the Russian word for “confusion” or “mess” with the term “cybernetics,”” (Benjamin Peters, “Normalizing Soviet Cybernetics”, p. 166)”In 1961, a Soviet philosopher concluded from a survey of the methodological problems of cybernetics that... cybernetics is connected with dialectical materialist philosophy as its natural and necessary world-view basis.”, Even in 1961, and certainly in the late 1950s, **this was little more than a pious hope**, and it was not until some years later that serious philosophical analysis of cybernetics was

under way. Moreover, the initial arguments about cybernetics had shown great differences of view about its relationship to dialectical materialism.” (David Holloway, *Innovation in Science-The Case of Cybernetics in the Soviet Union*, p. 329)

Computers and automatic information processing had never been criticized and had always been supported in Stalin’s USSR. However, the revisionists now falsely gave all credit for computer technology to cybernetics, even though it had had nothing to do with it. By doing this they dishonestly gave cybernetics a veneer of being practically useful and having some contributions to science.

But at the same time they actually demonstrated that cybernetics is not a scientific discipline at all. Although the cyberneticists could never define what exactly cybernetics is, it was agreed that it was supposed to be some kind of universal theory dealing with information, and not merely a theory of computer automation. By equating it with computer automation they totally undermined the claim that cybernetics was a new independent discipline with its own subject-matter:

“What is most interesting about the use of the term cybernetics is the way in which it now came to embrace computers and automatic control systems, which had been excluded from the attacks on cybernetics. This usage undoubtedly created some difficulties for the advocates of cybernetics by drawing attention away from the general theory of control processes and focusing it on computers. But it was also of the utmost importance in helping to legitimate cybernetics. For the practical usefulness of computers was being more clearly

realized in the Soviet Union, and military and space successes were claimed by the advocates of cybernetics as evidence of the practical value of their science.” (David Holloway, *Innovation in Science-The Case of Cybernetics in the Soviet Union*, p. 318)

“Undoubtedly many Soviet scientists saw in cybernetics and the traditional theory of control and communication a duplication of effort since the traditional theory was well established **before Wiener’s entrance into this area...** Soviet philosophers have not as yet established to their own satisfaction any clear relationship between Wiener’s theory and the other sciences, nor have they sharply delineated the area of operation for cybernetics.” (Maxim W. Mikulak, *Cybernetics and Marxism-Leninism*, pp. 457-458)

“The Rumanian scholar I. N. Belenescu pinpointed the following characteristics of matter in motion: (1) all motion exists in time and space; (2) all forms of motion involve the interactions of things and events; and (3) all forms of motion contain within themselves contradictions and a unity of contradictions, and a unity of continuity and noncontinuity. In his estimation Wiener’s cybernetics did not possess any particular form of motion of its own; therefore, it could not be treated as a science in the same sense as physics, chemistry, or biology. Pursuing Belenescu’s thinking to its logical conclusion, Ukraintsev, in 1961, did not anticipate that cybernetics would make any new discoveries or establish any new laws of moving matter.” (Maxim W. Mikulak, *Cybernetics and Marxism-Leninism*, p. 458)

By the 1970s the emperor had absolutely no clothes left. Nobody could explain what cybernetics even is, but somehow it included absolutely everything and absolutely nothing:

“cybernetics had grown to a nearly all-encompassing size... By the 1970s seemingly little more than a name (kibernetika) and a common interest in computer modeling held together this loose patchwork of institutions, disciplines, fields, and topics.” (Benjamin Peters, “Normalizing Soviet Cybernetics”, p. 167)

By the 1980s cybernetics, a term which nobody can define, and which not many people remember today, was discarded:

“By the 1980s the term “cybernetics,” which, although no longer new, had failed to mobilize consensus, diffused in relevance to the point that it gave way to the rise of its replacement, “informatics.”” (Benjamin Peters, “Normalizing Soviet Cybernetics”, p. 167)

Cyberneticists claimed they would make everything precise but in reality their own system was incredibly confused and meaningless:

“The computer came to symbolize a new spirit of rigorous thinking, logical clarity, and quantitative precision, contrasting sharply with the vague and manipulative language of Stalinist ideological discourse [sic]... Soviet cyberneticians sought a new foundation of scientific objectivity in the rigor of mathematical formulas and computer algorithms and in the “precise” concepts of cybernetics... they put forward a computer-based cybernetic criterion of objectivity as overtly

non-ideological, non-philosophical, non-class-oriented, and non-Partyminded. The cyberneticians aspired to bring computer-based objectivity to the entire family of the life sciences and the social sciences by translating these sciences into cyberspeak.” (Gerovitch, *Newspeak to Cyberspeak*, p. 8)

And how did the cybernetic project fulfill its goals and promises? It turned out to be an utter failure.

HOW DID IT ALL END?

Kolman defected to the West, but things did not necessarily go any better there—quite the opposite. Norbert Wiener himself had become disgusted with American militarism and how his ideas were used. He became more and more pessimistic over time. As a stupid liberal he hoped for some kind of “third way” between capitalism and socialism.

The other leading American cybernetics pioneer Claude Shannon wrote already in 1956:

“[Information theory] has perhaps been ballooned to an importance beyond its actual accomplishments. Our fellow scientists in many different fields, attracted by the fanfare and by the new avenues opened to scientific analysis, are using these ideas in their own problems. . . . It will be all too easy for our somewhat **artificial prosperity to collapse overnight when it is realized that the use of a few exciting words like information, entropy, redundancy, do not solve all our problems.**” (Claude Shannon, “The Bandwagon”, quoted in Gerovitch, *Newspeak to Cyberspeak*, p. 98)

“Eventually, Shannon withdrew from the public eye and refused to speak about his “information theory.”” (Gerovitch, Newspeak to Cyberspeak, p. 98)

Many of the founders of Soviet cybernetics themselves were totally disappointed. Liapunov abandoned his position already in the 1960s:

“Liapunov began to distance himself from the fussy activity of [Berg’s cybernetics] council... Liapunov, the accepted “father of Soviet cybernetics,” declined to write for the series Cybernetics—in the Service of Communism... As one memoirist put it, after Liapunov’s departure “the center that had unified cybernetics disappeared” (Gerovitch, Newspeak to Cyberspeak, p. 263)

In the 70s the long time linguistic cyberneticist, structural linguist “Mel’cuk... no longer wanted to play the cybernetics game. He even called one of his own articles on the connection between cybernetics and linguistics “showy and shallow.”” (Gerovitch, Newspeak to Cyberspeak, p. 281)

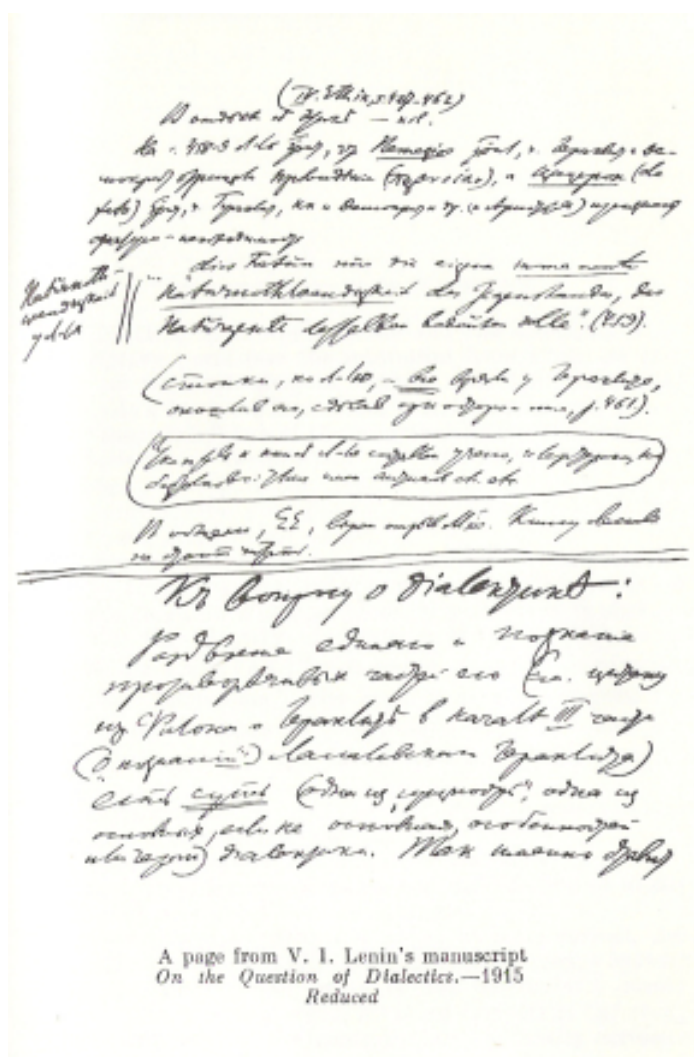
“Igor’ Poletaev (a close associate of Liapunov and the author of the first Soviet book on cybernetics), who had once fought to legitimize cybernetic research, bitterly told his friends in the 1970s: **“Now it is I who will say that cybernetics is a pseudo-science.”**” (Gerovitch, Newspeak to Cyberspeak, p. 289)

On the Question of Dialectics

Vladimir Lenin

11–14 minutes

Vladimir Ilyich Lenin



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The fragment *On the Question of Dialectics* is contained in a notebook between the conspectus of Lassalle’s book on Heraclitus and the conspectus of Aristotle’s *Metaphysics*. Written in 1915 in Bern.

Note that this document has undergone special formatting to ensure that Lenin’s sidenotes fit on the page, marking as best as possible where they were located in the original manuscript.

The splitting of a single whole and the cognition of its contradictory parts (see the quotation from Philo on [Heraclitus](#) at the beginning of Section III, “On Cognition,” in [Lasalle’s](#) book on Heraclitus^[1]) is the *essence* (one of the “essentials,” one of the principal, if not the principal, characteristics or features) of dialectics. That is precisely how [Hegel](#), too, puts the matter ([Aristotle](#) in his *Metaphysics* continually *grapples* with it and *combats* Heraclitus and Heraclitean ideas).

The correctness of this aspect of the content of [dialectics](#) must be tested by the history of science. This aspect of dialectics (e.g. in [Plekhanov](#)) usually receives inadequate attention: the identity of opposites is taken as the sum-total of *examples* [“for example, a seed,” “for example, primitive communism.”] The same is true of [Engels](#). But it is “in the interests of popularisation...”] and not as a *law of cognition* (and as a law of the objective world).

In mathematics: + and —. Differential and integral.

In mechanics: action and reaction.

In physics: positive and negative electricity.

In chemistry: the combination and dissociation of atoms.

In social science: the class struggle.

The [identity of opposites](#) (it would be more correct, perhaps, to say their “unity,”—although the difference between the terms identity and unity is not particularly important here. In a certain sense both are correct) is the recognition (discovery) of the contradictory, *mutually exclusive*, opposite tendencies in *all* phenomena and processes of nature (*including* mind and society). The condition for the knowledge of all processes of the world in their “*self-movement*,” in their spontaneous development, in their real life, is the knowledge of them as a unity of opposites. Development is the “struggle” of opposites. The two basic (or two possible? Or two historically observable?) conceptions of development (evolution) are: development as decrease and increase, as repetition, *and* development as a unity of opposites (the division of a unity into mutually exclusive opposites and their reciprocal relation).

In the first conception of motion, *self* - movement, its *driving* force, its source, its motive, remains in the shade (or this source is made *external*—God, subject, etc.). In the second conception the chief attention is directed precisely to knowledge of the source of “*self*” - movement.

The first conception is lifeless, pale and dry. The second is living. The second *alone* furnishes the key to the “self-movement” of everything existing; it alone furnishes the key to “leaps,” to the “break in continuity,” to the “transformation into the opposite,” to the destruction of the old and the emergence of the new.

The unity (coincidence, identity, equal action) of opposites is conditional, temporary, transitory, relative. The struggle of mutually exclusive opposites is absolute, just as development and motion are absolute.

NB: The distinction between [subjectivism](#) (scepticism, sophistry, etc.) and dialectics, incidentally, is that in ([objective](#)) dialectics the difference between the [relative and the absolute](#) is itself relative. For objective dialectics there *is* an absolute *within* the relative. For subjectivism and sophistry the relative is only relative and excludes the absolute.

In his [Capital](#), Marx first analyses the simplest, most ordinary and fundamental, most common and everyday *relation* of bourgeois (commodity) society, a relation encountered billions of times, viz., the exchange of commodities. In this very simple phenomenon (in this “cell” of [bourgeois society](#))

analysis reveals *all* the contradictions (or the germs of *all* contradictions) of modern society. The subsequent exposition shows us the development (*both growth and movement*) of these contradictions and of this society in the Σ ^[2] of its individual parts. From its beginning to its end.

Such must also be the method of exposition (i.e., study) of dialectics in general (for with Marx the dialectics of bourgeois society is only a particular case of dialectics). To begin with what is the simplest, most ordinary, common, etc., with **any proposition**: the leaves of a tree are green; John is a man: Fido is a dog, etc. Here already we have *dialectics* (as Hegel's genius recognised): the **individual** is the *universal*. (cf. Aristoteles, *Metaphisik*, translation by Schegler, Bd. II, S. 40, 3. Buch, 4. Kapitel, 8-9: "denn natürlich kann man nicht der Meinung sin, daß es ein Haus (a house in general) gebe außer den sichtbaren Häusern," "ού γρ άν ὁείημεν εἶναι τινα οἰχίαν παρα τχς τινάς οἰχίας").^[3] Consequently, the opposites (the individual is opposed to the universal) are identical: the individual exists only in the connection that leads to the universal. The universal exists only in the individual and through the individual. Every individual is (in one way or another) a universal. Every universal is (a fragment, or an aspect, or the essence of) an individual. Every universal only approximately embraces all the individual objects. Every individual enters incompletely into the universal, etc., etc. Every individual is connected by thousands of transitions with other **kinds** of individuals (things, phenomena, processes) etc. *Here already* we have the elements, the germs, the concepts of *necessity*, of objective connection in nature, etc. Here already

we have the contingent and the necessary, the phenomenon and the essence; for when we say: John is a man, Fido is a dog, *this* is a leaf of a tree, etc., we *disregard* a number of attributes as *contingent*; we separate the essence from the appearance, and counterpose the one to the other.

Thus in any proposition we can (and must) disclose as in a “nucleus” (“cell”) the germs of *all* the elements of dialectics, and thereby show that dialectics is a property of all human knowledge in general. And natural science shows us (and here again it must be demonstrated in *any* simple instance) objective nature with the same qualities, the transformation of the individual into the universal, of the contingent into the necessary, transitions, modulations, and the reciprocal connection of opposites. Dialectics *is* the theory of knowledge of (Hegel and) Marxism. This is the “aspect” of the matter (it is not “an aspect” but the *essence* of the matter) to which Plekhanov, not to speak of other Marxists, paid no attention.

* * *

Knowledge is represented in the form of a series of circles both by Hegel (see [Logic](#)) and by the modern “epistemologist” of natural science, the eclectic and foe of Hegelianism (which he did not understand!), Paul Volkmann (see his *Erkenntnistheoretische Grundzüge*,^[4] S.)

Dialectics as *living*, many-sided knowledge (with the number of sides eternally increasing), with an infinite number of shades of every approach and approximation to reality (with a philosophical system growing into a whole out of each shade)

—here we have an immeasurably rich content as compared with “metaphysical” [materialism](#), the fundamental *misfortune* of which is its inability to apply dialectics to the Bildertheorie, [\[5\]](#) to the process and development of knowledge.

<p>Philosophical idealism is <i>only</i> nonsense from the stand-point of crude, simple, metaphysical materialism. From the standpoint of <i>dialectical</i> materialism, on the other hand, philosophical idealism is a <i>one-sided</i>, exaggerated, überschwengliches (Dietzgen)[6] development (inflation, distension) of one of the features, aspects, facets of knowledge, into an absolute, <i>divorced</i> from matter, from nature,</p>		
<p>apotheosised. Idealism is clerical obscurantism. True. But philosophical idealism is (“<i>more correctly</i>” and “<i>in addition</i>”) a <i>road</i> to clerical obscurantism <i>through one of the shades</i> of the infinitely complex <i>knowledge</i> (dialectical) of man.</p>		<p>NB this aphorism</p>

Human knowledge is not (or does not follow) a straight line, but a curve, which endlessly approximates a series of circles, a spiral. Any fragment, segment, section of this curve can be transformed (transformed one-sidedly) into an independent, complete, straight line, which then (if one does not see the wood for the trees) leads into the quagmire, into clerical obscurantism (where it is *anchored* by the class interests of the ruling classes). Rectilinearity and one-sidedness, woodenness and petrification, subjectivism and subjective blindness—voilà the epistemological roots of idealism. And clerical obscurantism (= philosophical idealism), of course, has *epistemological* roots, it is not groundless; it is a *sterile flower* undoubtedly, but a sterile flower that grows on the living tree of living, fertile, genuine, powerful, omnipotent, objective, absolute human knowledge.

Notes

[1] See [p. 348](#) of this volume—*Ed.*

[2] summation—*Ed.*

[3] “for, of course, one cannot hold the opinion that there can be a house (in general) apart from visible houses.”—*Ed.*

[4] P. Volkmann, *Erkenntnistheoretische Grundzüge der Naturwissenschaften*, Leipzig-Berlin, 1910, p. 35.—*Ed.*

[5] theory of reflection—*Ed.*

[6] The reference to the use by [Josef Dietzgen](#) of the term

“überschwenglich,” which means: exaggerated, excessive, infinite; for example, in the book *Kleinere philosophische Schriften (Minor Philosophical Writings)*, Stuttgart, 1903, p. 204, Dietzgen uses this term as follows: “absolute and relative are not infinitely separated.”

Role and Functions of the Trade Unions Under The New Economic Policy

Vladimir Lenin

28–35 minutes

V. I. Lenin

Under The New Economic Policy

Decision Of The C.C., R.C.P.(B.), January 12, 1922^[1]

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1. The New Economic Policy And The Trade Unions

The New Economic Policy introduces a number of important changes in the position of the proletariat and, consequently, in that of the trade unions. The great bulk of the means of production in industry and the transport system remains in the hands of the proletarian state. This, together with the nationalisation of the land, shows that the New Economic Policy does not change the nature of the workers' state, although it does substantially alter the methods and forms of socialist development for it permits of economic rivalry between socialism, which is now being built, and capitalism, which is trying to revive by supplying the needs of the vast masses of the peasantry through the medium of the market.

Changes in the forms of socialist development are necessary because the Communist Party and the Soviet government are now adopting special methods to implement the general policy of transition from capitalism to socialism and in many respects are operating differently from the way they operated before: they are capturing a number of positions by a "new flanking movement", so to speak; they are retreating in order to make better preparations for a new offensive against capitalism. In particular, a free market and capitalism, both subject to state control, are now being permitted and are developing; on the other hand, the socialised state enterprises are being put on what is called a profit basis, i. e., they are being reorganised on commercial lines, which, in view of the general cultural backwardness and exhaustion of the country, will, to a greater

or lesser degree, inevitably give rise to the impression among the masses that there is an antagonism of interest between the management of the different enterprises and the workers employed in them.

2. State Capitalism In The Proletarian State And The Trade Unions

The proletarian state may, without changing its own nature, permit freedom to trade and the development of capitalism only within certain bounds, and only on the condition that the state regulates (supervises, controls, determines the forms and methods of, etc.) private trade and private capitalism. The success of such regulation will depend not only on the state authorities but also, and to a larger extent, on the degree of maturity of the proletariat and of the masses of the working people generally, on their cultural level, etc. But even if this regulation is completely successful, the antagonism of class interests between labour and capital will certainly remain. Consequently, one of the main tasks that will henceforth confront the trade unions is to protect in every way the class interests of the proletariat in its struggle against capital. This task should be openly put in the forefront, and the machinery of the trade unions must be reorganised, changed or supplemented accordingly (conflict commissions, strike funds, mutual aid funds, etc., should be formed, or rather, built up).

3. The State Enterprises That Are Being Put On A Profit Basis And The Trade Unions

The transfer of state enterprises to the so-called profit basis is inevitably and inseparably connected with the New Economic

Policy; in the near future this is bound to become the predominant, if not the sole, form of state enterprise. In actual fact, this means that with the free market now permitted and developing the state enterprises will to a large extent be put on a commercial basis. In view of the urgent need to increase the productivity of labour and make every state enterprise pay its way and show a profit, and in view of the inevitable rise of narrow departmental interests and excessive departmental zeal, this circumstance is bound to create a certain conflict of interests in matters concerning labour conditions between the masses of workers and the directors and managers of the state enterprises, or the government departments in charge of them. Therefore, as regards the socialised enterprises, it is undoubtedly the duty of the trade unions to protect the interests of the working people, to facilitate as far as possible the improvement of their standard of living, and constantly to correct the blunders and excesses of business organisations resulting from bureaucratic distortions of the state apparatus.

4. The Essential Difference Between The Class Struggle Of The Proletariat In A State Which Recognises Private Ownership Of The Land, Factories, Etc., And Where Political Power Is In The Hands Of The Capitalist Class, And The Economic Struggle Of The Proletariat In A State Which Does Not Recognise Private Ownership Of The Land And The Majority Of The Large Enterprises And Where Political Power Is In The Hands Of The Proletariat

As long as classes exist, the class struggle is inevitable. In the period of transition from capitalism to socialism the existence of classes is inevitable; and the Programme of the Russian

Communist Party definitely states that we are taking only the first steps in the transition from capitalism to socialism.

Hence, the Communist Party, the Soviet government and the trade unions must frankly admit the existence of an economic struggle and its inevitability until the electrification of industry and agriculture is completed—at least in the main—and until small production and the supremacy of the market are thereby cut off at the roots.

On the other hand, it is obvious that under capitalism the ultimate object of the strike struggle is to break up the state machine and to overthrow the given class state power. Under the transitional type of proletarian state such as ours, however, the ultimate object of every action taken by the working class can only be to fortify the proletarian state and the state power of the proletarian class by combating the bureaucratic distortions, mistakes and flaws in this state, and by curbing the class appetites of the capitalists who try to evade its control, etc. Hence, the Communist Party, the Soviet government and the trade unions must never forget and must never conceal from the workers and the mass of the working people that the strike struggle in a state where the proletariat holds political power can be explained and justified only by the bureaucratic distortions of the proletarian state and by all sorts of survivals of the old capitalist system in the government offices on the one hand, and by the political immaturity and cultural backwardness of the mass of the working people on the other.

Hence, when friction and disputes arise between individual contingents of the working class and individual departments and organs of the workers' state, the task of the trade unions is

to facilitate the speediest and smoothest settlement of these disputes to the maximum advantage of the groups of workers they represent, taking care, however, not to prejudice the interests of other groups of workers and the development of the workers' state and its economy as a whole; for only this development can lay the foundations for the material and cultural welfare of the working class. The only correct, sound and expedient method of removing friction and of settling disputes between individual contingents of the working class and the organs of the workers' state is for the trade unions to act as mediators, and through their competent bodies either to enter into negotiations with the competent business organisations on the basis of precise demands and proposals formulated by both sides, or appeal to higher state bodies.

In cases where wrong actions of business organisations, the backwardness of certain sections of workers, the provocations of counter-revolutionary elements or, lastly, lack of foresight on the part of the trade union organisations themselves lead to open disputes in the form of strikes in state enterprises, and so forth, the task of the trade unions is to bring-about the speediest settlement of a dispute by taking measures in conformity with the general nature of trade union activities, that is, by taking steps to remove the real injustices and irregularities and to satisfy the lawful and practicable demands of the masses, by exercising political influence on the masses, and so forth.

One of the most important and infallible tests of the correctness and success of the activities of the trade unions is the degree to which they succeed in averting mass disputes in

state enterprises by pursuing a far-sighted policy with a view to effectively protecting the interests of the masses of the workers in all respects and to removing in time all causes of dispute.

5. Reversion To Voluntary Trade Union Membership

The formal attitude of the trade unions to the automatic enrolment of all wage-workers as union members has introduced a certain degree of bureaucratic distortion in the trade unions and has caused the latter to lose touch with the broad mass of their membership. Hence, it is necessary most resolutely to implement voluntary enrolment both of individuals and of groups into trade unions. Under no circumstances must trade union members be required to subscribe to any specific political views; in this respect, as well as in respect of religion, the trade unions must be non-partisan. All that must be required of trade union members in the proletarian state is that they should understand comradely discipline and the necessity of uniting the workers' forces for the purpose of protecting the interests of the working people and of assisting the working people's government, i. e., the Soviet government. The proletarian state must encourage the workers to organise in trade unions both by juridical and material means; but the trade unions can have no rights without duties.

6. The Trade Unions And The Management Of Industry

Following its seizure of political power, the principal and fundamental interest of the proletariat lies in securing an enormous increase in the productive forces of society and in

the output of manufactured goods. This task, which is clearly formulated in the Programme of the Russian Communist Party, is particularly urgent in our country today owing to post-war ruin, famine and dislocation. Hence, the speediest and most enduring success in restoring large-scale industry is a condition without which no success can be achieved in the general cause of emancipating labour from the yoke of capital and securing the victory of socialism. To achieve this success in Russia, in her present state, it is absolutely essential that all authority in the factories should be concentrated in the hands of the management. The factory management, usually built up on the principle of one-man responsibility, must have authority independently to fix and pay out wages, and also distribute rations, working clothes, and all other supplies on the basis and within the limits of collective agreements concluded with the trade unions; it must enjoy the utmost freedom to manoeuvre, exercise strict control of the actual successes achieved in increasing production, in making the factory pay its way and in increasing profits, and carefully select the most talented and capable administrative personnel, etc.

Under these circumstances, all direct interference by the trade unions in the management of factories must be regarded as positively harmful and impermissible.

It would be absolutely wrong, however, to interpret this indisputable axiom to mean that the trade unions must play no part in the socialist organisation of industry and in the management of state industry. Their participation in this is necessary in the following strictly defined forms.

7. The Role And Functions Of The Trade Unions In The Business And Administrative Organisations Of The Proletarian State

The proletariat is the class foundation of the state accomplishing the transition from capitalism to socialism. In a country where the small peasantry is overwhelmingly predominant the proletariat can successfully fulfil this function only if it very skilfully, cautiously and gradually establishes an alliance with the vast majority of the peasantry. The trade unions must collaborate closely and constantly with the government, all the political and economic activities of which are guided by the class-conscious vanguard of the working class—the Communist Party. Being a school of communism in general, the trade unions must, in particular, be a school for training the whole mass of workers, and eventually all working people, in the art of managing socialist industry (and gradually also agriculture).

Proceeding from these principles, the trade unions' part in the activities of the business and administrative organisations of the proletarian state should, in the immediate period, take the following main forms:

1. The trade unions should help to staff all the state business and administrative bodies connected with economies: nominate their candidates for them, stating their length of service, experience, and so forth. Right of decision lies solely with the business organisations, which also bear full responsibility for the activities of the respective organisations. The business organisations, however, must give careful

consideration to the views on all candidates expressed by the trade unions concerned.

2. One of the most important functions of the trade unions is to promote and train factory managers from among the workers and the masses of the working people generally. At the present time we have scores of such factory managers who are quite satisfactory, and hundreds who are more or less satisfactory, but very soon, however, we must have hundreds of the former and thousands of the latter. The trade unions must much more carefully and regularly than hitherto keep a systematic register of all workers and peasants capable of holding posts of this kind, and thoroughly, efficiently and from every aspect verify the progress they make in learning the art of management.

3. The trade unions must take a far greater part in the activities of all the planning bodies of the proletarian state, in drawing up economic plans and also programmes of production and expenditure of stocks of material supplies for the workers, in selecting the factories that are to continue to receive state supplies, to be leased, or to be given out as concessions, etc. The trade unions should undertake no direct functions of controlling production in private and leased enterprises, but participate in the regulation of private capitalist production exclusively by sharing in the activities of the competent state bodies. In addition to participating in all cultural and educational activities and in production propaganda, the trade unions must also, on an increasing scale, enlist the working class and the masses of the working people generally for all branches of the work of building up the state economy; they must make them familiar with all aspects of economic life and

with all details of industrial operations—from the procurement of raw materials to the marketing of the product; give them a more and more concrete understanding of the single state plan of socialist economy and the worker's and peasant's practical interest in its implementation.

4. The drawing up of scales of wages and supplies, etc., is one of the essential functions of the trade unions in the building of socialism and in their participation in the management of industry. In particular, disciplinary courts should steadily improve labour discipline and proper ways of promoting it and achieving increased productivity; but they must not interfere with the functions of the People's Courts in general or with the functions of factory managements.

This list of the major functions of the trade unions in the work of building up socialist economy should, of course, be drawn up in greater detail by the competent trade union and government bodies. Taking into account the experience of the enormous work accomplished by the unions in organising the economy and its management, and also the mistakes which have caused no little harm and which resulted from direct, unqualified, incompetent and irresponsible interference in administrative matters, it is most important, in order to restore the economy and strengthen the Soviet system, deliberately and resolutely to start persevering practical activities calculated to extend over a long period of years and designed to give the workers and all working people generally practical training in the art of managing the economy of the whole country.

8. Contact With The Masses—The Fundamental Condition For All Trade Union Activity

Contact with the masses, i. e., with the overwhelming majority of the workers (and eventually of all the working people), is the most important and most fundamental condition for the success of all trade union activity. In all the trade union organisations and their machinery, from bottom up, there should be instituted, and tested in practice over a period of many years, a system of responsible comrades—who must not all be Communists—who should live right among the workers, study their lives in every detail, and be able unerringly, on any question, and at any time, to judge the mood, the real aspirations, needs and thoughts of the masses. They must be able without a shadow of false idealisation to define the degree of their class-consciousness and the extent to which they are influenced by various prejudices and survivals of the past; and they must be able to win the boundless confidence of the masses by comradeship and concern for their needs. One of the greatest and most serious dangers that confront the numerically small Communist Party which, as the vanguard of the working class, is guiding a vast country in the process of transition to socialism (for the time being without the direct support of the more advanced countries), is isolation from the masses, the danger that the vanguard may run too far ahead and fail to "straighten out the line", fail to maintain firm contact with the whole army of labour, i. e., with the overwhelming majority of workers and peasants. Just as the very best factory, with the very best motors and first-class machines, will be forced to remain idle if the transmission

belts from the motors to the machines are damaged, so our work of socialist construction must meet with inevitable disaster if the trade unions—the transmission belts from the Communist Party to the masses—are badly fitted or function badly. It is not sufficient to explain, to reiterate and corroborate this truth; it must be backed up organisationally by the whole structure of the trade unions and by their everyday activities.

9. The Contradictions In The Status Of The Trade Unions Under The Dictatorship Of The Proletariat

From all the foregoing it is evident that there are a number of contradictions in the various functions of the trade unions. On the one hand, their principal method of operation is that of persuasion and education; on the other hand, as participants in the exercise of state power they cannot refuse to share in coercion. On the one hand, their main function is to protect the interests of the masses of the working people in the most direct and immediate sense of the term; on the other hand, as participants in the exercise of state power and builders of the economy as a whole they cannot refuse to resort to pressure. On the one hand, they must operate in military fashion, for the dictatorship of the proletariat is the fiercest, most dogged and most desperate class war; on the other hand, specifically military methods of operation are least of all applicable to the trade unions. On the one hand, they must be able to adapt themselves to the masses, to their level; on the other hand, they must never pander to the prejudices and backwardness of the masses, but steadily raise them to a higher and higher level, etc., etc. These contradictions are no accident, and they

will persist for several decades; for as long as survivals of capitalism and small production remain, contradictions between them and the young shoots of socialism are inevitable throughout the social system.

Two practical conclusions must be drawn from this. First, for the successful conduct of trade union activities it is not enough to understand their functions correctly, it is not enough to organise them properly. In addition, special tact is required, ability to approach the masses in a special way in each individual case for the purpose of raising these masses to a higher cultural, economic and political stage with the minimum of friction.

Second, the afore-mentioned contradictions will inevitably give rise to disputes, disagreements, friction, etc. A higher body is required with sufficient authority to settle these at once. This higher body is the Communist Party and the international federation of the Communist Parties of all countries—the Communist International.

10. The Trade Unions And The Specialists

The main principles of this question are set forth in the Programme of the Russian Communist Party; but these will remain paper principles if constant attention is not paid to the facts which indicate the degree to which they are put into practice. Recent facts of this kind are: first, cases of the murder of engineers by workers in socialised mines not only in the Urals, but also in the Donets Basin; second the suicide of V. V. Oldenborger, Chief Engineer of the Moscow Waterworks, because of the intolerable working conditions

due to the incompetent and impermissible conduct of the members of the Communist group, as well as of organs of the Soviet government, which prompted the All-Russia Central Executive Committee to turn the whole matter over to the judicial authorities.

The Communist Party and the Soviet government as a whole bear a far greater share of the blame for cases of this kind than the trade unions. But the present issue is not one of establishing the degree of political guilt, but of drawing certain political conclusions. Unless our leading bodies, i. e., the Communist Party, the Soviet government and the trade unions, guard as the apple of their eye every specialist who does his work conscientiously and knows and loves it—even though the ideas of communism are totally alien to him—it will be useless to expect any serious progress in socialist construction. We may not be able to achieve it soon, but we must at all costs achieve a situation in which specialists—as a separate social stratum, which will persist until we have reached the highest stage of development of communist society—can enjoy better conditions of life under socialism than they enjoyed under capitalism insofar as concerns their material and legal status, comradely collaboration with the workers and peasants, and in the mental plane, i. e., finding satisfaction in their work, realising that it is socially useful and independent of the sordid interests of the capitalist class. Nobody will regard a government department as being tolerably well organised if it does not take systematic measures to provide for all the needs of the specialists, to reward the best of them, to safeguard and protect their interests, etc., and does not secure practical

results in this.

The trade unions must conduct all the activities of the type indicated (or systematically collaborate in the activities of all the government departments concerned) not from the point of view of the interests of the given department, but from the point of view of the interests of labour and of the economy as a whole. With regard to the specialists, on the trade unions devolves the very arduous duty of daily exercising influence on the broad masses of the working people in order to create proper relations between them and the specialists. Only such activities can produce really important practical results.

11. The Trade Unions And Petty-Bourgeois Influence On The Working Class

Trade unions are really effective only when they unite very broad strata of the non-Party workers. This must give rise—particularly in a country in which the peasantry greatly predominates—to relative stability, specifically among the trade unions, of those political influences that serve as the superstructure over the remnants of capitalism and over small production. These influences are petty-bourgeois, i. e., Socialist-Revolutionary and Menshevik (the Russian variety of the parties of the Second and Two-and-a-Half Internationals) on the one hand, and anarchist on the other. Only among these trends has any considerable number of people remained who defend capitalism ideologically and not from selfish class motives, and continue to believe in the non-class nature of the "democracy", "equality", and "liberty " in general that they preach.

It is to this socio-economic cause and not to the role of individual groups, still less of individual persons, that we must attribute the survivals (sometimes even the revival) in our country of such petty-bourgeois ideas among the trade unions. The Communist Party, the Soviet bodies that conduct cultural and educational activities and all Communist members of trade unions must therefore devote far more attention to the ideological struggle against petty-bourgeois influences, trends and deviations among the trade unions, especially because the New Economic Policy is bound to lead to a certain strengthening of capitalism. It is urgently necessary to counteract this by intensifying the struggle against petty-bourgeois influences upon the working class.

Central Committee

Russian Communist Party (Bolsheviks)

Endnotes

[1] The role and tasks of the trade unions under the conditions created by the New Economic Policy were examined at a Plenary Meeting of the C.C., R.C.P.(B.) on December 28, 1921. The draft of the decision on the trade unions adopted by the C.C., R.C.P.(B.) was written by Lenin.

The theses of January 12, 1922 were examined by the Political Bureau of the Central Committee which unanimously approved them and submitted them without amendments to the Eleventh Party Congress. They were unanimously passed at that Congress (see *KPSS v rezolyutsiakh i resheniyakh syezdov, konferentsi i plenumov Ts.K. [C.P.S.U. in Resolutions*

and Decisions of Congresses, Conferences and C.C. Plenary Meetings], Part 1, 1954, pp. 603-12)

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Economic Manuscripts: Capital Vol. I

Karl Marx

246–313 minutes

Karl Marx. Capital Volume One

Chapter Twenty-Five: The General Law of Capitalist Accumulation

Contents

Section 1 - [The Increased Demand for labour power that Accompanies Accumulation, the Composition of Capital Remaining the same](#)

Section 2 - [Relative Diminution of the Variable Part of Capital Simultaneously with the Progress of Accumulation and of the Concentration that Accompanies it](#)

Section 3 - [Progressive Production of a Relative surplus population or Industrial Reserve Army](#)

Section 4 - [Different Forms of the Relative surplus population. The General Law of Capitalistic Accumulation](#)

Section 5 - [Illustrations of the General Law of Capitalist Accumulation](#)

- A. [England from 1846-1866](#)
 - B. [The Badly Paid Strata of the British Industrial Class](#)
 - C. [The Nomad Population](#)
 - D. [Effect of Crises on the Best Paid Part of the working class](#)
 - E. [The British Agricultural Proletariat](#)
 - F. [Ireland](#)
-

Section 1.

The Increased Demand for labour power that Accompanies Accumulation, the Composition of Capital Remaining the Same

In this chapter we consider the influence of the growth of capital on the lot of the labouring class. The most important factor in this inquiry is the composition of capital and the changes it undergoes in the course of the process of accumulation.

The composition of capital is to be understood in a two-fold sense. On the side of value, it is determined by the proportion in which it is divided into constant capital or value of the means of production, and variable capital or value of labour power, the sum total of wages. On the side of material, as it functions in the process of production, all capital is divided into means of production and living labour power. This latter composition is determined by the relation between the mass of the means of production employed, on the one hand, and the mass of labour necessary for their employment on the other. I call the former the *value-composition*, the latter the *technical*

composition of capital.

Between the two there is a strict correlation. To express this, I call the value composition of capital, in so far as it is determined by its technical composition and mirrors the changes of the latter, the *organic composition* of capital.

Wherever I refer to the composition of capital, without further qualification, its organic composition is always understood.

The many individual capitals invested in a particular branch of production have, one with another, more or less different compositions. The average of their individual compositions gives us the composition of the total capital in this branch of production. Lastly, the average of these averages, in all branches of production, gives us the composition of the total social capital of a country, and with this alone are we, in the last resort, concerned in the following investigation.

Growth of capital involves growth of its variable constituent or of the part invested in labour power. A part of the surplus-value turned into additional capital must always be re-transformed into variable capital, or additional labour fund. If we suppose that, all other circumstances remaining the same, the composition of capital also remains constant (*i.e.*, that a definite mass of means of production constantly needs the same mass of labour power to set it in motion), then the demand for labour and the subsistence-fund of the labourers clearly increase in the same proportion as the capital, and the more rapidly, the more rapidly the capital increases. Since the capital produces yearly a surplus-value, of which one part is yearly added to the original capital; since this increment itself

grows yearly along with the augmentation of the capital already functioning; since lastly, under special stimulus to enrichment, such as the opening of new markets, or of new spheres for the outlay of capital in consequence of newly developed social wants, &c., the scale of accumulation may be suddenly extended, merely by a change in the division of the surplus-value or surplus-product into capital and revenue, the requirements of accumulating capital may exceed the increase of labour power or of the number of labourers; the demand for labourers may exceed the supply, and, therefore, wages may rise. This must, indeed, ultimately be the case if the conditions supposed above continue. For since in each year more labourers are employed than in its predecessor, sooner or later a point must be reached, at which the requirements of accumulation begin to surpass the customary supply of labour, and, therefore, a rise of wages takes place. A lamentation on this score was heard in England during the whole of the fifteenth, and the first half of the eighteenth centuries. The more or less favourable circumstances in which the wage working class supports and multiplies itself, in no way alter the fundamental character of capitalist production. As simple reproduction constantly reproduces the capital relation itself, *i.e.*, the relation of capitalists on the one hand, and wage workers on the other, so reproduction on a progressive scale, *i.e.*, accumulation, reproduces the capital relation on a progressive scale, more capitalists or larger capitalists at this pole, more wage workers at that. The reproduction of a mass of labour power, which must incessantly re-incorporate itself with capital for that capital's self-expansion; which cannot get

free from capital, and whose enslavement to capital is only concealed by the variety of individual capitalists to whom it sells itself, this reproduction of labour power forms, in fact, an essential of the reproduction of capital itself. Accumulation of capital is, therefore, increase of the proletariat. [\[1\]](#)

Classical economy grasped this fact so thoroughly that Adam Smith, Ricardo, &c., as mentioned earlier, inaccurately identified accumulation with the consumption, by the productive labourers, of all the capitalised part of the surplus-product, or with its transformation into additional wage labourers. As early as 1696 John Bellers says:

“For if one had a hundred thousand acres of land and as many pounds in money, and as many cattle, without a labourer, what would the rich man be, but a labourer? And as the labourers make men rich, so the more labourers there will be, the more rich men ... the labour of the poor being the mines of the rich.”

[\[2\]](#)

So also Bernard de Mandeville at the beginning of the eighteenth century:

“It would be easier, where property is well secured, to live without money than without poor; for who would do the work? ... As they [the poor] ought to be kept from starving, so they should receive nothing worth saving. If here and there one of the lowest class by uncommon industry, and pinching his belly, lifts himself above the condition he was brought up in, nobody ought to hinder him; nay, it is undeniably the wisest course for every person in the society, and for every private

family to be frugal; but it is the interest of all rich nations, that the greatest part of the poor should almost never be idle, and yet continually spend what they get.... Those that get their living by their daily labour ... have nothing to stir them up to be serviceable but their wants which it is prudence to relieve, but folly to cure. The only thing then that can render the labouring man industrious, is a moderate quantity of money, for as too little will, according as his temper is, either dispirit or make him desperate, so too much will make him insolent and lazy.... From what has been said, it is manifest, that, in a free nation, where slaves are not allowed of, the surest wealth consists in a multitude of laborious poor; for besides, that they are the never-failing nursery of fleets and armies, without them there could be no enjoyment, and no product of any country could be valuable. “To make the society” [which of course consists of non-workers] “happy and people easier under the meanest circumstances, it is requisite that great numbers of them should be ignorant as well as poor; knowledge both enlarges and multiplies our desires, and the fewer things a man wishes for, the more easily his necessities may be supplied.” [\[3\]](#)

What Mandeville, an honest, clear-headed man, had not yet seen, is that the mechanism of the process of accumulation itself increases, along with the capital, the mass of “labouring poor,” *i.e.*, the wage labourers, who turn their labour power into an increasing power of self-expansion of the growing capital, and even by doing so must eternise their dependent relation on their own product, as personified in the capitalists. In reference to this relation of dependence, Sir F. M. Eden in

his “The State of the Poor, an History of the Labouring Classes in England,” says,

“the natural produce of our soil is certainly not fully adequate to our subsistence; we can neither be clothed, lodged nor fed but in consequence of some previous labour. A portion at least of the society must be indefatigably employed There are others who, though they ‘neither toil nor spin,’ can yet command the produce of industry, but who owe their exemption from labour solely to civilisation and order They are peculiarly the creatures of civil institutions, [\[4\]](#) which have recognised that individuals may acquire property by various other means besides the exertion of labour.... Persons of independent fortune ... owe their superior advantages by no means to any superior abilities of their own, but almost entirely ... to the industry of others. It is not the possession of land, or of money, but the command of labour which distinguishes the opulent from the labouring part of the community This [scheme approved by Eden] would give the people of property sufficient (but by no means too much) influence and authority over those who ... work for them; and it would place such labourers, not in an abject or servile condition, but in such a state of easy and liberal dependence as all who know human nature, and its history, will allow to be necessary for their own comfort.” [\[5\]](#)

Sir F. M. Eden, it may be remarked in passing, is the only disciple of Adam Smith during the eighteenth century that produced any work of importance. [\[6\]](#)

Under the conditions of accumulation supposed thus far,

which conditions are those most favourable to the labourers, their relation of dependence upon capital takes on a form endurable or, as Eden says: “easy and liberal.” Instead of becoming more intensive with the growth of capital, this relation of dependence only becomes more extensive, *i.e.*, the sphere of capital’s exploitation and rule merely extends with its own dimensions and the number of its subjects. A larger part of their own surplus-product, always increasing and continually transformed into additional capital, comes back to them in the shape of means of payment, so that they can extend the circle of their enjoyments; can make some additions to their consumption-fund of clothes, furniture, &c., and can lay by small reserve funds of money. But just as little as better clothing, food, and treatment, and a larger peculium, do away with the exploitation of the slave, so little do they set aside that of the wage worker. A rise in the price of labour, as a consequence of accumulation of capital, only means, in fact, that the length and weight of the golden chain the wage worker has already forged for himself, allow of a relaxation of the tension of it. In the controversies on this subject the chief fact has generally been overlooked, viz., the *differentia specifica* {defining characteristic} of capitalistic production. Labour power is sold today, not with a view of satisfying, by its service or by its product, the personal needs of the buyer. His aim is augmentation of his capital, production of commodities containing more labour than he pays for, containing therefore a portion of value that costs him nothing, and that is nevertheless realised when the commodities are sold. Production of surplus-value is the absolute law of this

mode of production. Labour power is only saleable so far as it preserves the means of production in their capacity of capital, reproduces its own value as capital, and yields in unpaid labour a source of additional capital. [7] The conditions of its sale, whether more or less favourable to the labourer, include therefore the necessity of its constant re-selling, and the constantly extended reproduction of all wealth in the shape of capital. Wages, as we have seen, by their very nature, always imply the performance of a certain quantity of unpaid labour on the part of the labourer. Altogether, irrespective of the case of a rise of wages with a falling price of labour, &c., such an increase only means at best a quantitative diminution of the unpaid labour that the worker has to supply. This diminution can never reach the point at which it would threaten the system itself. Apart from violent conflicts as to the rate of wages (and Adam Smith has already shown that in such a conflict, taken on the whole, the master is always master), a rise in the price of labour resulting from accumulation of capital implies the following alternative:

Either the price of labour keeps on rising, because its rise does not interfere with the progress of accumulation. In this there is nothing wonderful, for, says Adam Smith, “after these (profits) are diminished, stock may not only continue to increase, but to increase much faster than before.... A great stock, though with small profits, generally increases faster than a small stock with great profits.” (l. c., ii, p. 189.) In this case it is evident that a diminution in the unpaid labour in no way interferes with the extension of the domain of capital. — Or, on the other hand, accumulation slackens in consequence of the rise in the price

of labour, because the stimulus of gain is blunted. The rate of accumulation lessens; but with its lessening, the primary cause of that lessening vanishes, *i.e.*, the disproportion between capital and exploitable labour power. The mechanism of the process of capitalist production removes the very obstacles that it temporarily creates. The price of labour falls again to a level corresponding with the needs of the self-expansion of capital, whether the level be below, the same as, or above the one which was normal before the rise of wages took place. We see thus: In the first case, it is not the diminished rate either of the absolute, or of the proportional, increase in labour power, or labouring population, which causes capital to be in excess, but conversely the excess of capital that makes exploitable labour power insufficient. In the second case, it is not the increased rate either of the absolute, or of the proportional, increase in labour power, or labouring population, that makes capital insufficient; but, conversely, the relative diminution of capital that causes the exploitable labour power, or rather its price, to be in excess. It is these absolute movements of the accumulation of capital which are reflected as relative movements of the mass of exploitable labour power, and therefore seem produced by the latter's own independent movement. To put it mathematically: the rate of accumulation is the independent, not the dependent, variable; the rate of wages, the dependent, not the independent, variable. Thus, when the industrial cycle is in the phase of crisis, a general fall in the price of commodities is expressed as a rise in the value of money, and, in the phase of prosperity, a general rise in the price of commodities, as a fall in the value of money. The so-

called currency school concludes from this that with high prices too much, with low prices too little [8] money is in circulation. Their ignorance and complete misunderstanding of facts [9] are worthily paralleled by the economists, who interpret the above phenomena of accumulation by saying that there are now too few, now too many wage labourers.

The law of capitalist production, that is at the bottom of the pretended “natural law of population,” reduces itself simply to this: The correlation between accumulation of capital and rate of wages is nothing else than the correlation between the unpaid labour transformed into capital, and the additional paid labour necessary for the setting in motion of this additional capital. It is therefore in no way a relation between two magnitudes, independent one of the other: on the one hand, the magnitude of the capital; on the other, the number of the labouring population; it is rather, at bottom, only the relation between the unpaid and the paid labour of the same labouring population. If the quantity of unpaid labour supplied by the working class, and accumulated by the capitalist class, increases so rapidly that its conversion into capital requires an extraordinary addition of paid labour, then wages rise, and, all other circumstances remaining equal, the unpaid labour diminishes in proportion. But as soon as this diminution touches the point at which the surplus labour that nourishes capital is no longer supplied in normal quantity, a reaction sets in: a smaller part of revenue is capitalised, accumulation lags, and the movement of rise in wages receives a check. The rise of wages therefore is confined within limits that not only leave intact the foundations of the capitalistic system, but also

secure its reproduction on a progressive scale. The law of capitalistic accumulation, metamorphosed by economists into pretended law of Nature, in reality merely states that the very nature of accumulation excludes every diminution in the degree of exploitation of labour, and every rise in the price of labour, which could seriously imperil the continual reproduction, on an ever-enlarging scale, of the capitalistic relation. It cannot be otherwise in a mode of production in which the labourer exists to satisfy the needs of self-expansion of existing values, instead of, on the contrary, material wealth existing to satisfy the needs of development on the part of the labourer. As, in religion, man is governed by the products of his own brain, so in capitalistic production, he is governed by the products of his own hand. [\[10\]](#)

Section 2.

Relative Diminution of the Variable Part of Capital Simultaneously with the Progress of Accumulation and of the Concentration that Accompanies it

According to the economists themselves, it is neither the actual extent of social wealth, nor the magnitude of the capital already functioning, that lead to a rise of wages, but only the constant growth of accumulation and the degree of rapidity of that growth. (Adam Smith, Book I., chapter 8.) So far, we have only considered one special phase of this process, that in which the increase of capital occurs along with a constant technical composition of capital. But the process goes beyond

this phase.

Once given the general basis of the capitalistic system, then, in the course of accumulation, a point is reached at which the development of the productivity of social labour becomes the most powerful lever of accumulation.

“The same cause,” says Adam Smith, “which raises the wages of labour, the increase of stock, tends to increase its productive powers, and to make a smaller quantity of labour produce a greater quantity of work.” [\[11\]](#)

Apart from natural conditions, such as fertility of the soil, &c., and from the skill of independent and isolated producers (shown rather qualitatively in the goodness than quantitatively in the mass of their products), the degree of productivity of labour, in a given society, is expressed in the relative extent of the means of production that one labourer, during a given time, with the same tension of labour power, turns into products. The mass of the means of production which he thus transforms, increases with the productiveness of his labour. But those means of production play a double part. The increase of some is a consequence, that of the others a condition of the increasing productivity of labour. *E.g.*, with the division of labour in manufacture, and with the use of machinery, more raw material is worked up in the same time, and, therefore, a greater mass of raw material and auxiliary substances enter into the labour process. That is the consequence of the increasing productivity of labour. On the other hand, the mass of machinery, beasts of burden, mineral manures, drain-pipes, &c., is a condition of the increasing

productivity of labour. So also is it with the means of production concentrated in buildings, furnaces, means of transport, &c. But whether condition or consequence, the growing extent of the means of production, as compared with the labour power incorporated with them, is an expression of the growing productiveness of labour. The increase of the latter appears, therefore, in the diminution of the mass of labour in proportion to the mass of means of production moved by it, or in the diminution of the subjective factor of the labour process as compared with the objective factor.

This change in the technical composition of capital, this growth in the mass of means of production, as compared with the mass of the labour power that vivifies them, is reflected again in its value composition, by the increase of the constant constituent of capital at the expense of its variable constituent. There may be, *e.g.*, originally 50 per cent. of a capital laid out in means of production, and 50 per cent. in labour power; later on, with the development of the productivity of labour, 80 per cent. in means of production, 20 per cent. in labour power, and so on. This law of the progressive increase in constant capital, in proportion to the variable, is confirmed at every step (as already shown) by the comparative analysis of the prices of commodities, whether we compare different economic epochs or different nations in the same epoch. The relative magnitude of the element of price, which represents the value of the means of production only, or the constant part of capital consumed, is in direct, the relative magnitude of the other element of price that pays labour (the variable part of capital) is in inverse proportion to the advance of accumulation.

This diminution in the variable part of capital as compared with the constant, or the altered value-composition of the capital, however, only shows approximately the change in the composition of its material constituents. If, *e.g.*, the capital-value employed today in spinning is $\frac{7}{8}$ constant and $\frac{1}{8}$ variable, whilst at the beginning of the 18th century it was $\frac{1}{2}$ constant and $\frac{1}{2}$ variable, on the other hand, the mass of raw material, instruments of labour, &c., that a certain quantity of spinning labour consumes productively today, is many hundred times greater than at the beginning of the 18th century. The reason is simply that, with the increasing productivity of labour, not only does the mass of the means of production consumed by it increase, but their value compared with their mass diminishes. Their value therefore rises absolutely, but not in proportion to their mass. The increase of the difference between constant and variable capital, is, therefore, much less than that of the difference between the mass of the means of production into which the constant, and the mass of the labour power into which the variable, capital is converted. The former difference increases with the latter, but in a smaller degree.

But, if the progress of accumulation lessens the relative magnitude of the variable part of capital, it by no means, in doing this, excludes the possibility of a rise in its absolute magnitude. Suppose that a capital-value at first is divided into 50 per cent. of constant and 50 per cent. of variable capital; later into 80 per cent. of constant and 20 per cent. of variable. If in the meantime the original capital, say £6,000, has increased to £18,000, its variable constituent has also

increased. It was £3,000, it is now £3,600. But where as formerly an increase of capital by 20 per cent. would have sufficed to raise the demand for labour 20 per cent., now this latter rise requires a tripling of the original capital.

In Part IV, it was shown, how the development of the productiveness of social labour presupposes co-operation on a large scale; how it is only upon this supposition that division and combination of labour can be organised, and the means of production economised by concentration on a vast scale; how instruments of labour which, from their very nature, are only fit for use in common, such as a system of machinery, can be called into being; how huge natural forces can be pressed into the service of production; and how the transformation can be effected of the process of production into a technological application of science. On the basis of the production of commodities, where the means of production are the property of private persons, and where the artisan therefore either produces commodities, isolated from and independent of others, or sells his labour power as a commodity, because he lacks the means for independent industry, co-operation on a large scale can realise itself only in the increase of individual capitals, only in proportion as the means of social production and the means of subsistence are transformed into the private property of capitalists. The basis of the production of commodities can admit of production on a large scale in the capitalistic form alone. A certain accumulation of capital, in the hands of individual producers of commodities, forms therefore the necessary preliminary of the specifically capitalistic mode of production. We had, therefore, to assume

that this occurs during the transition from handicraft to capitalistic industry. It may be called primitive accumulation, because it is the historic basis, instead of the historic result of specifically capitalist production. How it itself originates, we need not here inquire as yet. It is enough that it forms the starting point. But all methods for raising the social productive power of labour that are developed on this basis, are at the same time methods for the increased production of surplus-value or surplus-product, which in its turn is the formative element of accumulation. They are, therefore, at the same time methods of the production of capital by capital, or methods of its accelerated accumulation. The continual re-transformation of surplus-value into capital now appears in the shape of the increasing magnitude of the capital that enters into the process of production. This in turn is the basis of an extended scale of production, of the methods for raising the productive power of labour that accompany it, and of accelerated production of surplus-value. If, therefore, a certain degree of accumulation of capital appears as a condition of the specifically capitalist mode of production, the latter causes conversely an accelerated accumulation of capital. With the accumulation of capital, therefore, the specifically capitalistic mode of production develops, and with the capitalist mode of production the accumulation of capital. Both these economic factors bring about, in the compound ratio of the impulses they reciprocally give one another, that change in the technical composition of capital by which the variable constituent becomes always smaller and smaller as compared with the constant.

Every individual capital is a larger or smaller concentration of means of production, with a corresponding command over a larger or smaller labour-army. Every accumulation becomes the means of new accumulation. With the increasing mass of wealth which functions as capital, accumulation increases the concentration of that wealth in the hands of individual capitalists, and thereby widens the basis of production on a large scale and of the specific methods of capitalist production. The growth of social capital is effected by the growth of many individual capitals. All other circumstances remaining the same, individual capitals, and with them the concentration of the means of production, increase in such proportion as they form aliquot parts of the total social capital. At the same time portions of the original capitals disengage themselves and function as new independent capitals. Besides other causes, the division of property, within capitalist families, plays a great part in this. With the accumulation of capital, therefore, the number of capitalists grows to a greater or less extent. Two points characterise this kind of concentration which grows directly out of, or rather is identical with, accumulation. First: The increasing concentration of the social means of production in the hands of individual capitalists is, other things remaining equal, limited by the degree of increase of social wealth. Second: The part of social capital domiciled in each particular sphere of production is divided among many capitalists who face one another as independent commodity-producers competing with each other. Accumulation and the concentration accompanying it are, therefore, not only scattered over many points, but the increase

of each functioning capital is thwarted by the formation of new and the sub-division of old capitals. Accumulation, therefore, presents itself on the one hand as increasing concentration of the means of production, and of the command over labour; on the other, as repulsion of many individual capitals one from another.

This splitting-up of the total social capital into many individual capitals or the repulsion of its fractions one from another, is counteracted by their attraction. This last does not mean that simple concentration of the means of production and of the command over labour, which is identical with accumulation. It is concentration of capitals already formed, destruction of their individual independence, expropriation of capitalist by capitalist, transformation of many small into few large capitals. This process differs from the former in this, that it only presupposes a change in the distribution of capital already to hand, and functioning; its field of action is therefore not limited by the absolute growth of social wealth, by the absolute limits of accumulation. Capital grows in one place to a huge mass in a single hand, because it has in another place been lost by many. This is centralisation proper, as distinct from accumulation and concentration.

The laws of this centralisation of capitals, or of the attraction of capital by capital, cannot be developed here. A brief hint at a few facts must suffice. The battle of competition is fought by cheapening of commodities. The cheapness of commodities demands, *caeteris paribus*, on the productiveness of labour, and this again on the scale of production. Therefore, the larger capitals beat the smaller. It will further be remembered that,

with the development of the capitalist mode of production, there is an increase in the minimum amount of individual capital necessary to carry on a business under its normal conditions. The smaller capitals, therefore, crowd into spheres of production which Modern Industry has only sporadically or incompletely got hold of. Here competition rages in direct proportion to the number, and in inverse proportion to the magnitudes, of the antagonistic capitals. It always ends in the ruin of many small capitalists, whose capitals partly pass into the hands of their conquerors, partly vanish. Apart from this, with capitalist production an altogether new force comes into play — the credit system, which in its first stages furtively creeps in as the humble assistant of accumulation, drawing into the hands of individual or associated capitalists, by invisible threads, the money resources which lie scattered, over the surface of society, in larger or smaller amounts; but it soon becomes a new and terrible weapon in the battle of competition and is finally transformed into an enormous social mechanism for the centralisation of capitals.

Commensurately with the development of capitalist production and accumulation there develop the two most powerful levers of centralisation — competition and credit. At the same time the progress of accumulation increases the material amenable to centralisation, *i.e.*, the individual capitals, whilst the expansion of capitalist production creates, on the one hand, the social want, and, on the other, the technical means necessary for those immense industrial undertakings which require a previous centralisation of capital for their accomplishment. Today, therefore, the force of

attraction, drawing together individual capitals, and the tendency to centralisation are stronger than ever before. But if the relative extension and energy of the movement towards centralisation is determined, in a certain degree, by the magnitude of capitalist wealth and superiority of economic mechanism already attained, progress in centralisation does not in any way depend upon a positive growth in the magnitude of social capital. And this is the specific difference between centralisation and concentration, the latter being only another name for reproduction on an extended scale.

Centralisation may result from a mere change in the distribution of capitals already existing, from a simple alteration in the quantitative grouping of the component parts of social capital. Here capital can grow into powerful masses in a single hand because there it has been withdrawn from many individual hands. In any given branch of industry centralisation would reach its extreme limit if all the individual capitals invested in it were fused into a single capital. [\[12\]](#) In a given society the limit would be reached only when the entire social capital was united in the hands of either a single capitalist or a single capitalist company.

Centralisation completes the work of accumulation by enabling industrial capitalists to extend the scale of their operations. Whether this latter result is the consequence of accumulation or centralisation, whether centralisation is accomplished by the violent method of annexation — when certain capitals become such preponderant centres of attraction for others that they shatter the individual cohesion of the latter and then draw the separate fragments to themselves — or

whether the fusion of a number of capitals already formed or in process of formation takes place by the smoother process of organising joint-stock companies — the economic effect remains the same. Everywhere the increased scale of industrial establishments is the starting point for a more comprehensive organisation of the collective work of many, for a wider development of their material motive forces — in other words, for the progressive transformation of isolated processes of production, carried on by customary methods, into processes of production socially combined and scientifically arranged.

But accumulation, the gradual increase of capital by reproduction as it passes from the circular to the spiral form, is clearly a very slow procedure compared with centralisation, which has only to change the quantitative groupings of the constituent parts of social capital. The world would still be without railways if it had had to wait until accumulation had got a few individual capitals far enough to be adequate for the construction of a railway. Centralisation, on the contrary, accomplished this in the twinkling of an eye, by means of joint-stock companies. And whilst centralisation thus intensifies and accelerates the effects of accumulation, it simultaneously extends and speeds those revolutions in the technical composition of capital which raise its constant portion at the expense of its variable portion, thus diminishing the relative demand for labour.

The masses of capital fused together overnight by centralisation reproduce and multiply as the others do, only more rapidly, thereby becoming new and powerful levers in social accumulation. Therefore, when we speak of the progress

of social accumulation we tacitly include — today — the effects of centralisation.

The additional capitals formed in the normal course of accumulation (see [Chapter XXIV, Section 1](#)) serve particularly as vehicles for the exploitation of new inventions and discoveries, and industrial improvements in general. But in time the old capital also reaches the moment of renewal from top to toe, when it sheds its skin and is reborn like the others in a perfected technical form, in which a smaller quantity of labour will suffice to set in motion a larger quantity of machinery and raw materials. The absolute reduction in the demand for labour which necessarily follows from this is obviously so much the greater the higher the degree in which the capitals undergoing this process of renewal are already massed together by virtue of the centralisation movement.

On the one hand, therefore, the additional capital formed in the course of accumulation attracts fewer and fewer labourers in proportion to its magnitude. On the other hand, the old capital periodically reproduced with change of composition, repels more and more of the labourers formerly employed by it.

Section 3.

Progressive Production of a Relative surplus population or Industrial Reserve Army

The accumulation of capital, though originally appearing as its quantitative extension only, is effected, as we have seen, under

a progressive qualitative change in its composition, under a constant increase of its constant, at the expense of its variable constituent. [\[13\]](#)

The specifically capitalist mode of production, the development of the productive power of labour corresponding to it, and the change thence resulting in the organic composition of capital, do not merely keep pace with the advance of accumulation, or with the growth of social wealth. They develop at a much quicker rate, because mere accumulation, the absolute increase of the total social capital, is accompanied by the centralisation of the individual capitals of which that total is made up; and because the change in the technological composition of the additional capital goes hand in hand with a similar change in the technological composition of the original capital. With the advance of accumulation, therefore, the proportion of constant to variable capital changes. If it was originally say 1:1, it now becomes successively 2:1, 3:1, 4:1, 5:1, 7:1, &c., so that, as the capital increases, instead of $\frac{1}{2}$ of its total value, only $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{6}$, $\frac{1}{8}$, &c., is transformed into labour-power, and, on the other hand, $\frac{2}{3}$, $\frac{3}{4}$, $\frac{4}{5}$, $\frac{5}{6}$, $\frac{7}{8}$ into means of production. Since the demand for labour is determined not by the amount of capital as a whole, but by its variable constituent alone, that demand falls progressively with the increase of the total capital, instead of, as previously assumed, rising in proportion to it. It falls relatively to the magnitude of the total capital, and at an accelerated rate, as this magnitude increases. With the growth of the total capital, its variable constituent or the labour incorporated in it, also does increase, but in a

constantly diminishing proportion. The intermediate pauses are shortened, in which accumulation works as simple extension of production, on a given technical basis. It is not merely that an accelerated accumulation of total capital, accelerated in a constantly growing progression, is needed to absorb an additional number of labourers, or even, on account of the constant metamorphosis of old capital, to keep employed those already functioning. In its turn, this increasing accumulation and centralisation becomes a source of new changes in the composition of capital, of a more accelerated diminution of its variable, as compared with its constant constituent. This accelerated relative diminution of the variable constituent, that goes along with the accelerated increase of the total capital, and moves more rapidly than this increase, takes the inverse form, at the other pole, of an apparently absolute increase of the labouring population, an increase always moving more rapidly than that of the variable capital or the means of employment. But in fact, it is capitalistic accumulation itself that constantly produces, and produces in the direct ratio of its own energy and extent, a relatively redundant population of labourers, *i.e.*, a population of greater extent than suffices for the average needs of the self-expansion of capital, and therefore a surplus population.

Considering the social capital in its totality, the movement of its accumulation now causes periodical changes, affecting it more or less as a whole, now distributes its various phases simultaneously over the different spheres of production. In some spheres a change in the composition of capital occurs without increase of its absolute magnitude, as a consequence

of simple centralisation; in others the absolute growth of capital is connected with absolute diminution of its variable constituent, or of the labour power absorbed by it; in others again, capital continues growing for a time on its given technical basis, and attracts additional labour power in proportion to its increase, while at other times it undergoes organic change, and lessens its variable constituent; in all spheres, the increase of the variable part of capital, and therefore of the number of labourers employed by it, is always connected with violent fluctuations and transitory production of surplus population, whether this takes the more striking form of the repulsion of labourers already employed, or the less evident but not less real form of the more difficult absorption of the additional labouring population through the usual channels. ^[14] With the magnitude of social capital already functioning, and the degree of its increase, with the extension of the scale of production, and the mass of the labourers set in motion, with the development of the productiveness of their labour, with the greater breadth and fulness of all sources of wealth, there is also an extension of the scale on which greater attraction of labourers by capital is accompanied by their greater repulsion; the rapidity of the change in the organic composition of capital, and in its technical form increases, and an increasing number of spheres of production becomes involved in this change, now simultaneously, now alternately. The labouring population therefore produces, along with the accumulation of capital produced by it, the means by which it itself is made relatively superfluous, is turned into a relative surplus population; and it

does this to an always increasing extent. [\[15\]](#) This is a law of population peculiar to the capitalist mode of production; and in fact every special historic mode of production has its own special laws of population, historically valid within its limits and only in so far as man has not interfered with them.

But if a surplus labouring population is a necessary product of accumulation or of the development of wealth on a capitalist basis, this surplus population becomes, conversely, the lever of capitalistic accumulation, nay, a condition of existence of the capitalist mode of production. It forms a disposable industrial reserve army, that belongs to capital quite as absolutely as if the latter had bred it at its own cost. Independently of the limits of the actual increase of population, it creates, for the changing needs of the self-expansion of capital, a mass of human material always ready for exploitation. With accumulation, and the development of the productiveness of labour that accompanies it, the power of sudden expansion of capital grows also; it grows, not merely because the elasticity of the capital already functioning increases, not merely because the absolute wealth of society expands, of which capital only forms an elastic part, not merely because credit, under every special stimulus, at once places an unusual part of this wealth at the disposal of production in the form of additional capital; it grows, also, because the technical conditions of the process of production themselves — machinery, means of transport, &c. — now admit of the rapidest transformation of masses of surplus-product into additional means of production. The mass of social wealth, overflowing with the advance of accumulation, and

transformable into additional capital, thrusts itself frantically into old branches of production, whose market suddenly expands, or into newly formed branches, such as railways, &c., the need for which grows out of the development of the old ones. In all such cases, there must be the possibility of throwing great masses of men suddenly on the decisive points without injury to the scale of production in other spheres. Overpopulation supplies these masses. The course characteristic of modern industry, *viz.*, a decennial cycle (interrupted by smaller oscillations), of periods of average activity, production at high pressure, crisis and stagnation, depends on the constant formation, the greater or less absorption, and the re-formation of the industrial reserve army or surplus population. In their turn, the varying phases of the industrial cycle recruit the surplus population, and become one of the most energetic agents of its reproduction. This peculiar course of modern industry, which occurs in no earlier period of human history, was also impossible in the childhood of capitalist production. The composition of capital changed but very slowly. With its accumulation, therefore, there kept pace, on the whole, a corresponding growth in the demand for labour. Slow as was the advance of accumulation compared with that of more modern times, it found a check in the natural limits of the exploitable labouring population, limits which could only be got rid of by forcible means to be mentioned later. The expansion by fits and starts of the scale of production is the preliminary to its equally sudden contraction; the latter again evokes the former, but the former is impossible without disposable human material, without an increase, in the

number of labourers independently of the absolute growth of the population. This increase is effected by the simple process that constantly “sets free” a part of the labourers; by methods which lessen the number of labourers employed in proportion to the increased production. The whole form of the movement of modern industry depends, therefore, upon the constant transformation of a part of the labouring population into unemployed or half-employed hands. The superficiality of Political Economy shows itself in the fact that it looks upon the expansion and contraction of credit, which is a mere symptom of the periodic changes of the industrial cycle, as their cause. As the heavenly bodies, once thrown into a certain definite motion, always repeat this, so is it with social production as soon as it is once thrown into this movement of alternate expansion and contraction. Effects, in their turn, become causes, and the varying accidents of the whole process, which always reproduces its own conditions, take on the form of periodicity. When this periodicity is once consolidated, even Political Economy then sees that the production of a relative surplus population — *i.e.*, surplus with regard to the average needs of the self-expansion of capital — is a necessary condition of modern industry.

“Suppose,” says H. Merivale, formerly Professor of Political Economy at Oxford, subsequently employed in the English Colonial Office, “suppose that, on the occasion of some of these crises, the nation were to rouse itself to the effort of getting rid by emigration of some hundreds of thousands of superfluous arms, what would be the consequence? That, at the first returning demand for labour, there would be a

deficiency. However rapid reproduction may be, it takes, at all events, the space of a generation to replace the loss of adult labour. Now, the profits of our manufacturers depend mainly on the power of making use of the prosperous moment when demand is brisk, and thus compensating themselves for the interval during which it is slack. This power is secured to them only by the command of machinery and of manual labour. They must have hands ready by them, they must be able to increase the activity of their operations when required, and to slacken it again, according to the state of the market, or they cannot possibly maintain that pre-eminence in the race of competition on which the wealth of the country is founded.”

[\[16\]](#)

Even Malthus recognises overpopulation as a necessity of modern industry, though, after his narrow fashion, he explains it by the absolute over-growth of the labouring population, not by their becoming relatively supernumerary. He says:

“Prudential habits with regard to marriage, carried to a considerable extent among the labouring class of a country mainly depending upon manufactures and commerce, might injure it.... From the nature of a population, an increase of labourers cannot be brought into market in consequence of a particular demand till after the lapse of 16 or 18 years, and the conversion of revenue into capital, by saving, may take place much more rapidly: a country is always liable to an increase in the quantity of the funds for the maintenance of labour faster than the increase of population.” [\[17\]](#)

After Political Economy has thus demonstrated the constant

production of a relative surplus population of labourers to be a necessity of capitalistic accumulation, she very aptly, in the guise of an old maid, puts in the mouth of her “beau ideal” of a capitalist the following words addressed to those supernumeraries thrown on the streets by their own creation of additional capital: —

“We manufacturers do what we can for you, whilst we are increasing that capital on which you must subsist, and you must do the rest by accommodating your numbers to the means of subsistence.” [\[18\]](#)

Capitalist production can by no means content itself with the quantity of disposable labour power which the natural increase of population yields. It requires for its free play an industrial reserve army independent of these natural limits.

Up to this point it has been assumed that the increase or diminution of the variable capital corresponds rigidly with the increase or diminution of the number of labourers employed.

The number of labourers commanded by capital may remain the same, or even fall, while the variable capital increases. This is the case if the individual labourer yields more labour, and therefore his wages increase, and this although the price of labour remains the same or even falls, only more slowly than the mass of labour rises. Increase of variable capital, in this case, becomes an index of more labour, but not of more labourers employed. It is the absolute interest of every capitalist to press a given quantity of labour out of a smaller, rather than a greater number of labourers, if the cost is about the same. In the latter case, the outlay of constant capital

increases in proportion to the mass of labour set in action; in the former that increase is much smaller. The more extended the scale of production, the stronger this motive. Its force increases with the accumulation of capital.

We have seen that the development of the capitalist mode of production and of the productive power of labour — at once the cause and effect of accumulation — enables the capitalist, with the same outlay of variable capital, to set in action more labour by greater exploitation (extensive or intensive) of each individual labour power. We have further seen that the capitalist buys with the same capital a greater mass of labour power, as he progressively replaces skilled labourers by less skilled, mature labour power by immature, male by female, that of adults by that of young persons or children.

On the one hand, therefore, with the progress of accumulation, a larger variable capital sets more labour in action without enlisting more labourers; on the other, a variable capital of the same magnitude sets in action more labour with the same mass of labour power; and, finally, a greater number of inferior labour powers by displacement of higher.

The production of a relative surplus population, or the setting free of labourers, goes on therefore yet more rapidly than the technical revolution of the process of production that accompanies, and is accelerated by, the advance of accumulation; and more rapidly than the corresponding diminution of the variable part of capital as compared with the constant. If the means of production, as they increase in extent and effective power, become to a less extent means of

employment of labourers, this state of things is again modified by the fact that in proportion as the productiveness of labour increases, capital increases its supply of labour more quickly than its demand for labourers. The overwork of the employed part of the working class swells the ranks of the reserve, whilst conversely the greater pressure that the latter by its competition exerts on the former, forces these to submit to overwork and to subjugation under the dictates of capital. The condemnation of one part of the working class to enforced idleness by the overwork of the other part, and the converse, becomes a means of enriching the individual capitalists, [\[19\]](#) and accelerates at the same time the production of the industrial reserve army on a scale corresponding with the advance of social accumulation. How important is this element in the formation of the relative surplus population, is shown by the example of England. Her technical means for saving labour are colossal. Nevertheless, if to-morrow morning labour generally were reduced to a rational amount, and proportioned to the different sections of the working class according to age and sex, the working population to hand would be absolutely insufficient for the carrying on of national production on its present scale. The great majority of the labourers now “unproductive” would have to be turned into “productive” ones.

Taking them as a whole, the general movements of wages are exclusively regulated by the expansion and contraction of the industrial reserve army, and these again correspond to the periodic changes of the industrial cycle. They are, therefore, not determined by the variations of the absolute number of the

working population, but by the varying proportions in which the working class is divided into active and reserve army, by the increase or diminution in the relative amount of the surplus population, by the extent to which it is now absorbed, now set free. For Modern Industry with its decennial cycles and periodic phases, which, moreover, as accumulation advances, are complicated by irregular oscillations following each other more and more quickly, that would indeed be a beautiful law, which pretends to make the action of capital dependent on the absolute variation of the population, instead of regulating the demand and supply of labour by the alternate expansion and contraction of capital, the labour-market now appearing relatively under-full, because capital is expanding, now again over-full, because it is contracting. Yet this is the dogma of the economists. According to them, wages rise in consequence of accumulation of capital. The higher wages stimulate the working population to more rapid multiplication, and this goes on until the labour-market becomes too full, and therefore capital, relatively to the supply of labour, becomes insufficient. Wages fall, and now we have the reverse of the medal. The working population is little by little decimated as the result of the fall in wages, so that capital is again in excess relatively to them, or, as others explain it, falling wages and the corresponding increase in the exploitation of the labourer again accelerates accumulation, whilst, at the same time, the lower wages hold the increase of the working class in check. Then comes again the time, when the supply of labour is less than the demand, wages rise, and so on. A beautiful mode of motion this for developed capitalist production! Before, in

consequence of the rise of wages, any positive increase of the population really fit for work could occur, the time would have been passed again and again, during which the industrial campaign must have been carried through, the battle fought and won.

Between 1849 and 1859, a rise of wages practically insignificant, though accompanied by falling prices of corn, took place in the English agricultural districts. In Wiltshire, *e.g.*, the weekly wages rose from 7s. to 8s.; in Dorsetshire from 7s. or 8s., to 9s., &c. This was the result of an unusual exodus of the agricultural surplus population caused by the demands of war, the vast extension of railroads, factories, mines, &c. The lower the wages, the higher is the proportion in which ever so insignificant a rise of them expresses itself. If the weekly wage, *e.g.*, is 20s. and it rises to 22s., that is a rise of 10 per cent.; but if it is only 7s. and it rises to 9s., that is a rise of $28 \frac{4}{7}$ per cent., which sounds very fine. Everywhere the farmers were howling, and the London *Economist*, with reference to these starvation-wages, prattled quite seriously of “a general and substantial advance.” [\[20\]](#) What did the farmers do now? Did they wait until, in consequence of this brilliant remuneration, the agricultural labourers had so increased and multiplied that their wages must fall again, as prescribed by the dogmatic economic brain? They introduced more machinery, and in a moment the labourers were redundant again in a proportion satisfactory even to the farmers. There was now “more capital” laid out in agriculture than before, and in a more productive form. With this the demand for labour fell, not only relatively, but absolutely.

The above economic fiction confuses the laws that regulate the general movement of wages, or the ratio between the working class — *i.e.*, the total labour power — and the total social capital, with the laws that distribute the working population over the different spheres of production. If, *e.g.*, in consequence of favourable circumstances, accumulation in a particular sphere of production becomes especially active, and profits in it, being greater than the average profits, attract additional capital, of course the demand for labour rises and wages also rise. The higher wages draw a larger part of the working population into the more favoured sphere, until it is glutted with labour power, and wages at length fall again to their average level or below it, if the pressure is too great. Then, not only does the immigration of labourers into the branch of industry in question cease; it gives place to their emigration. Here the political economist thinks he sees the why and wherefore of an absolute increase of workers accompanying an increase of wages, and of a diminution of wages accompanying an absolute increase of labourers. But he sees really only the local oscillation of the labour-market in a particular sphere of production — he sees only the phenomena accompanying the distribution of the working population into the different spheres of outlay of capital, according to its varying needs.

The industrial reserve army, during the periods of stagnation and average prosperity, weighs down the active labour-army; during the periods of over-production and paroxysm, it holds its pretensions in check. Relative surplus population is therefore the pivot upon which the law of demand and supply

of labour works. It confines the field of action of this law within the limits absolutely convenient to the activity of exploitation and to the domination of capital.

This is the place to return to one of the grand exploits of economic apologetics. It will be remembered that if through the introduction of new, or the extension of old, machinery, a portion of variable capital is transformed into constant, the economic apologist interprets this operation which “fixes” capital and by that very act sets labourers “free,” in exactly the opposite way, pretending that it sets free capital for the labourers. Only now can one fully understand the effrontery of these apologists. What are set free are not only the labourers immediately turned out by the machines, but also their future substitutes in the rising generation, and the additional contingent, that with the usual extension of trade on the old basis would be regularly absorbed. They are now all “set free,” and every new bit of capital looking out for employment can dispose of them. Whether it attracts them or others, the effect on the general labour demand will be nil, if this capital is just sufficient to take out of the market as many labourers as the machines threw upon it. If it employs a smaller number, that of the supernumeraries increases; if it employs a greater, the general demand for labour only increases to the extent of the excess of the employed over those “set free.” The impulse that additional capital, seeking an outlet, would otherwise have given to the general demand for labour, is therefore in every case neutralised to the extent of the labourers thrown out of employment by the machine. That is to say, the mechanism of capitalistic production so manages matters that the absolute

increase of capital is accompanied by no corresponding rise in the general demand for labour. And this the apologist calls a compensation for the misery, the sufferings, the possible death of the displaced labourers during the transition period that banishes them into the industrial reserve army! The demand for labour is not identical with increase of capital, nor supply of labour with increase of the working class. It is not a case of two independent forces working on one another. Les dés sont pipés.

Capital works on both sides at the same time. If its accumulation, on the one hand, increases the demand for labour, it increases on the other the supply of labourers by the “setting free” of them, whilst at the same time the pressure of the unemployed compels those that are employed to furnish more labour, and therefore makes the supply of labour, to a certain extent, independent of the supply of labourers. The action of the law of supply and demand of labour on this basis completes the despotism of capital. As soon, therefore, as the labourers learn the secret, how it comes to pass that in the same measure as they work more, as they produce more wealth for others, and as the productive power of their labour increases, so in the same measure even their function as a means of the self-expansion of capital becomes more and more precarious for them; as soon as they discover that the degree of intensity of the competition among themselves depends wholly on the pressure of the relative surplus population; as soon as, by Trades’ Unions, &c., they try to organise a regular co-operation between employed and unemployed in order to destroy or to weaken the ruinous

effects of this natural law of capitalistic production on their class, so soon capital and its sycophant, Political Economy, cry out at the infringement of the “eternal” and so to say “sacred” law of supply and demand. Every combination of employed and unemployed disturbs the “harmonious” action of this law. But, on the other hand, as soon as (in the colonies, *e.g.*) adverse circumstances prevent the creation of an industrial reserve army and, with it, the absolute dependence of the working class upon the capitalist class, capital, along with its commonplace Sancho Panza, rebels against the “sacred” law of supply and demand, and tries to check its inconvenient action by forcible means and State interference.

Section 4.

Different Forms of the Relative surplus population. The General Law of Capitalistic Accumulation

The relative surplus population exists in every possible form. Every labourer belongs to it during the time when he is only partially employed or wholly unemployed. Not taking into account the great periodically recurring forms that the changing phases of the industrial cycle impress on it, now an acute form during the crisis, then again a chronic form during dull times — it has always three forms, the floating, the latent, the stagnant.

In the centres of modern industry — factories, manufactures, ironworks, mines, &c. — the labourers are sometimes repelled, sometimes attracted again in greater masses, the

number of those employed increasing on the whole, although in a constantly decreasing proportion to the scale of production. Here the surplus population exists in the floating form.

In the automatic factories, as in all the great workshops, where machinery enters as a factor, or where only the modern division of labour is carried out, large numbers of boys are employed up to the age of maturity. When this term is once reached, only a very small number continue to find employment in the same branches of industry, whilst the majority are regularly discharged. This majority forms an element of the floating surplus population, growing with the extension of those branches of industry. Part of them emigrates, following in fact capital that has emigrated. One consequence is that the female population grows more rapidly than the male, *teste* England. That the natural increase of the number of labourers does not satisfy the requirements of the accumulation of capital, and yet all the time is in excess of them, is a contradiction inherent to the movement of capital itself. It wants larger numbers of youthful labourers, a smaller number of adults. The contradiction is not more glaring than that other one that there is a complaint of the want of hands, while at the same time many thousands are out of work, because the division of labour chains them to a particular branch of industry. [\[21\]](#)

The consumption of labour power by capital is, besides, so rapid that the labourer, half-way through his life, has already more or less completely lived himself out. He falls into the

ranks of the supernumeraries, or is thrust down from a higher to a lower step in the scale. It is precisely among the work-people of modern industry that we meet with the shortest duration of life. Dr. Lee, Medical Officer of Health for Manchester, stated

“that the average age at death of the Manchester ... upper middle class was 38 years, while the average age at death of the labouring class was 17; while at Liverpool those figures were represented as 35 against 15. It thus appeared that the well-to-do classes had a lease of life which was more than double the value of that which fell to the lot of the less favoured citizens.” [\[22\]](#)

In order to conform to these circumstances, the absolute increase of this section of the proletariat must take place under conditions that shall swell their numbers, although the individual elements are used up rapidly. Hence, rapid renewal of the generations of labourers (this law does not hold for the other classes of the population). This social need is met by early marriages, a necessary consequence of the conditions in which the labourers of modern industry live, and by the premium that the exploitation of children sets on their production.

As soon as capitalist production takes possession of agriculture, and in proportion to the extent to which it does so, the demand for an agricultural labouring population falls absolutely, while the accumulation of the capital employed in agriculture advances, without this repulsion being, as in non-agricultural industries, compensated by a greater attraction.

Part of the agricultural population is therefore constantly on the point of passing over into an urban or manufacturing proletariat, and on the look-out for circumstances favourable to this transformation. (Manufacture is used here in the sense of all non-agricultural industries.) [\[23\]](#) This source of relative surplus population is thus constantly flowing. But the constant flow towards the towns pre-supposes, in the country itself, a constant latent surplus population, the extent of which becomes evident only when its channels of outlet open to exceptional width. The agricultural labourer is therefore reduced to the minimum of wages, and always stands with one foot already in the swamp of pauperism.

The third category of the relative surplus population, the stagnant, forms a part of the active labour army, but with extremely irregular employment. Hence it furnishes to capital an inexhaustible reservoir of disposable labour power. Its conditions of life sink below the average normal level of the working class; this makes it at once the broad basis of special branches of capitalist exploitation. It is characterised by maximum of working-time, and minimum of wages. We have learnt to know its chief form under the rubric of “domestic industry.” It recruits itself constantly from the supernumerary forces of modern industry and agriculture, and specially from those decaying branches of industry where handicraft is yielding to manufacture, manufacture to machinery. Its extent grows, as with the extent and energy of accumulation, the creation of a surplus population advances. But it forms at the same time a self-reproducing and self-perpetuating element of the working class, taking a proportionally greater part in the

general increase of that class than the other elements. In fact, not only the number of births and deaths, but the absolute size of the families stand in inverse proportion to the height of wages, and therefore to the amount of means of subsistence of which the different categories of labourers dispose. This law of capitalistic society would sound absurd to savages, or even civilised colonists. It calls to mind the boundless reproduction of animals individually weak and constantly hunted down. [\[24\]](#)

The lowest sediment of the relative surplus population finally dwells in the sphere of pauperism. Exclusive of vagabonds, criminals, prostitutes, in a word, the “dangerous” classes, this layer of society consists of three categories. First, those able to work. One need only glance superficially at the statistics of English pauperism to find that the quantity of paupers increases with every crisis, and diminishes with every revival of trade. Second, orphans and pauper children. These are candidates for the industrial reserve army, and are, in times of great prosperity, as 1860, *e.g.*, speedily and in large numbers enrolled in the active army of labourers. Third, the demoralised and ragged, and those unable to work, chiefly people who succumb to their incapacity for adaptation, due to the division of labour; people who have passed the normal age of the labourer; the victims of industry, whose number increases with the increase of dangerous machinery, of mines, chemical works, &c., the mutilated, the sickly, the widows, &c. Pauperism is the hospital of the active labour-army and the dead weight of the industrial reserve army. Its production is included in that of the relative surplus population, its necessity in theirs; along with the surplus population,

pauperism forms a condition of capitalist production, and of the capitalist development of wealth. It enters into the *faux frais* of capitalist production; but capital knows how to throw these, for the most part, from its own shoulders on to those of the working class and the lower middle class.

The greater the social wealth, the functioning capital, the extent and energy of its growth, and, therefore, also the absolute mass of the proletariat and the productiveness of its labour, the greater is the industrial reserve army. The same causes which develop the expansive power of capital, develop also the labour power at its disposal. The relative mass of the industrial reserve army increases therefore with the potential energy of wealth. But the greater this reserve army in proportion to the active labour army, the greater is the mass of a consolidated surplus population, whose misery is in inverse ratio to its torment of labour. The more extensive, finally, the Lazarus layers of the working class, and the industrial reserve army, the greater is official pauperism. *This is the absolute general law of capitalist accumulation.* Like all other laws it is modified in its working by many circumstances, the analysis of which does not concern us here.

The folly is now patent of the economic wisdom that preaches to the labourers the accommodation of their number to the requirements of capital. The mechanism of capitalist production and accumulation constantly effects this adjustment. The first word of this adaptation is the creation of a relative surplus population, or industrial reserve army. Its last word is the misery of constantly extending strata of the active army of labour, and the dead weight of pauperism.

The law by which a constantly increasing quantity of means of production, thanks to the advance in the productiveness of social labour, may be set in movement by a progressively diminishing expenditure of human power, this law, in a capitalist society — where the labourer does not employ the means of production, but the means of production employ the labourer — undergoes a complete inversion and is expressed thus: the higher the productiveness of labour, the greater is the pressure of the labourers on the means of employment, the more precarious, therefore, becomes their condition of existence, viz., the sale of their own labour power for the increasing of another's wealth, or for the self-expansion of capital. The fact that the means of production, and the productiveness of labour, increase more rapidly than the productive population, expresses itself, therefore, capitalistically in the inverse form that the labouring population always increases more rapidly than the conditions under which capital can employ this increase for its own self-expansion.

We saw in Part IV., when analysing the production of relative surplus-value: within the capitalist system all methods for raising the social productiveness of labour are brought about at the cost of the individual labourer; all means for the development of production transform themselves into means of domination over, and exploitation of, the producers; they mutilate the labourer into a fragment of a man, degrade him to the level of an appendage of a machine, destroy every remnant of charm in his work and turn it into a hated toil; they estrange from him the intellectual potentialities of the labour process in

the same proportion as science is incorporated in it as an independent power; they distort the conditions under which he works, subject him during the labour process to a despotism the more hateful for its meanness; they transform his life-time into working-time, and drag his wife and child beneath the wheels of the Juggernaut of capital. But all methods for the production of surplus-value are at the same time methods of accumulation; and every extension of accumulation becomes again a means for the development of those methods. It follows therefore that in proportion as capital accumulates, the lot of the labourer, be his payment high or low, must grow worse. The law, finally, that always equilibrates the relative surplus population, or industrial reserve army, to the extent and energy of accumulation, this law rivets the labourer to capital more firmly than the wedges of Vulcan did Prometheus to the rock. It establishes an accumulation of misery, corresponding with accumulation of capital. Accumulation of wealth at one pole is, therefore, at the same time accumulation of misery, agony of toil slavery, ignorance, brutality, mental degradation, at the opposite pole, *i.e.*, on the side of the class that produces its own product in the form of capital. [\[25\]](#) This antagonistic character of capitalistic accumulation is enunciated in various forms by political economists, although by them it is confounded with phenomena, certainly to some extent analogous, but nevertheless essentially distinct, and belonging to pre-capitalistic modes of production.

The Venetian monk Ortes, one of the great economic writers of the 18th century, regards the antagonism of capitalist production as a general natural law of social wealth.

“In the economy of a nation, advantages and evils always balance one another (il bene ed il male economico in una nazione sempre all, istessa misura): the abundance of wealth with some people, is always equal to the want of it with others (la copia dei beni in alcuni sempre eguale alia mancanza di essi in altri): the great riches of a small number are always accompanied by the absolute privation of the first necessities of life for many others. The wealth of a nation corresponds with its population, and its misery corresponds with its wealth. Diligence in some compels idleness in others. The poor and idle are a necessary consequence of the rich and active,” &c.

[\[26\]](#)

In a thoroughly brutal way about 10 years after Ortes, the Church of England parson, Townsend, glorified misery as a necessary condition of wealth.

“Legal constraint (to labour) is attended with too much trouble, violence, and noise, whereas hunger is not only a peaceable, silent, unremitted pressure, but as the most natural motive to industry and labour, it calls forth the most powerful exertions.”

Everything therefore depends upon making hunger permanent among the working class, and for this, according to Townsend, the principle of population, especially active among the poor, provides.

“It seems to be a law of Nature that the poor should be to a certain degree improvident” [*i.e.*, so improvident as to be born *without* a silver spoon in the mouth], “that there may always be some to fulfil the most servile, the most sordid, and the

most ignoble offices in the community. The stock of human happiness is thereby much increased, whilst the more delicate are not only relieved from drudgery ... but are left at liberty without interruption to pursue those callings which are suited to their various dispositions ... it” [the Poor Law] “tends to destroy the harmony and beauty, the symmetry and order of that system which God and Nature have established in the world.” [\[27\]](#) If the Venetian monk found in the fatal destiny that makes misery eternal, the *raison d’être* of Christian charity, celibacy, monasteries and holy houses, the Protestant prebendary finds in it a pretext for condemning the laws in virtue of which the poor possessed a right to a miserable public relief.

“The progress of social wealth,” says Storch, “begets this useful class of society ... which performs the most wearisome, the vilest, the most disgusting functions, which takes, in a word, on its shoulders all that is disagreeable and servile in life, and procures thus for other classes leisure, serenity of mind and conventional” [c’est bon!] “dignity of character.” [\[28\]](#)

Storch asks himself in what then really consists the progress of this capitalistic civilisation with its misery and its degradation of the masses, as compared with barbarism. He finds but one answer: security!

“Thanks to the advance of industry and science,” says Sismondi, “every labourer can produce every day much more than his consumption requires. But at the same time, whilst his labour produces wealth, that wealth would, were he called on

to consume it himself, make him less fit for labour.” According to him, “men” [*i.e.*, non-workers] “would probably prefer to do without all artistic perfection, and all the enjoyments that manufacturers procure for us, if it were necessary that all should buy them by constant toil like that of the labourer.... Exertion today is separated from its recompense; it is not the same man that first works, and then reposes; but it is because the one works that the other rests.... The indefinite multiplication of the productive powers of labour can then only have for result the increase of luxury and enjoyment of the idle rich.” [\[29\]](#)

Finally Destutt de Tracy, the fish-blooded bourgeois doctrinaire, blurts out brutally:

“In poor nations the people are comfortable, in rich nations they are generally poor.” [\[30\]](#)

Section 5.

Illustrations of the General Law of Capitalist Accumulation

A. England from 1846-1866

No period of modern society is so favourable for the study of capitalist accumulation as the period of the last 20 years. It is as if this period had found Fortunatus' purse. But of all countries England again furnishes the classical example, because it holds the foremost place in the world-market,

because capitalist production is here alone completely developed, and lastly, because the introduction of the Free-trade millennium since 1846 has cut off the last retreat of vulgar economy. The titanic advance of production — the latter half of the 20 years' period again far surpassing the former — has been already pointed out sufficiently in Part IV.

Although the absolute increase of the English population in the last half century was very great, the relative increase or rate of growth fell constantly, as the following table borrowed from the census shows.

Annual increase per cent. of the population of England and Wales in decimal numbers:

1811-1821	1.533 <i>per cent.</i>
1821-1831	1.446 <i>per cent.</i>
1831-1841	1.326 <i>per cent.</i>
1841-1851	1.216 <i>per cent.</i>
1851-1861	1.141 <i>per cent.</i>

Let us now, on the other hand, consider the increase of wealth. Here the movement of profit, rent of land, &c., that come under the income tax, furnishes the surest basis. The increase of profits liable to income tax (farmers and some other categories not included) in Great Britain from 1853 to 1864 amounted to 50.47% or 4.58% as the annual average, [\[31\]](#) that of the population during the same period to about 12%. The augmentation of the rent of land subject to taxation (including houses, railways, mines, fisheries, &c.), amounted for 1853 to

1864 to 38% or 3 5/12% annually. Under this head the following categories show the greatest increase:

Excess of annual income of 1864 over that of 1853		Increase per year
Houses	38.60%	3.50%
Quarries	84.76%	7.70%
Mines	68.85%	6.26%
Ironworks	39.92%	3.63%
Fisheries	57.37%	5.21%
Gasworks	126.02%	11.45%
Railways	83.29%	7.57%

If we compare the years from 1853 to 1864 in three sets of four consecutive years each, the rate of augmentation of the income increases constantly. [\[32\]](#) It is, *e.g.*, for that arising from profits between 1853 to 1857, 1.73% yearly; 1857-1861, 2.74%, and for 1861-64, 9.30% yearly. The sum of the incomes of the United Kingdom that come under the income tax was in 1856, £307,068,898; in 1859, £328,127,416; in 1862, £351,745,241; in 1863, £359,142,897; in 1864, £362,462,279; in 1865, £385,530,020. [\[33\]](#)

The accumulation of capital was attended at the same time by its concentration and centralisation. Although no official statistics of agriculture existed for England (they did for Ireland), they were voluntarily given in 10 counties. These

statistics gave the result that from 1851 to 1861 the number of farms of less than 100 acres had fallen from 31,583 to 26,597, so that 5,016 had been thrown together into larger farms. [\[34\]](#)

From 1815 to 1825 no personal estate of more than £1,000,000 came under the succession duty; from 1825 to 1855, however, 8 did; and 4 from 1856 to June, 1859, *i.e.*, in 4½ years. [\[35\]](#)

The centralisation will, however, be best seen from a short analysis of the Income Tax Schedule D (profits, exclusive of farms, &c.), in the years 1864 and 1865. I note beforehand that incomes from this source pay income tax on everything over £60. These incomes liable to taxation in England, Wales and Scotland, amounted in 1864 to £95,844,222, in 1865 to £105,435,579. [\[36\]](#) The number of persons taxed were in 1864, 308,416, out of a population of 23,891,009; in 1865, 332,431 out of a population of 24,127,003. The following table shows the distribution of these incomes in the two years:

	Year ending April 5th, 1864.		Year ending April 5th, 1865.	
	Income from Profits	Income from People	Income from Profits	Income from People
Total Income	£95,844,222	308,416	105,435,738	332,431
of these	57,028,289	23,334	64,554,297	24,265
of these	36,415,225	3,619	42,535,576	4,021

of these	22,809,781	832	27,555,313	973
of these	8,744,762	91	11,077,238	107

In 1855 there were produced in the United Kingdom 61,453,079 tons of coal, of value £16,113,167; in 1864, 92,787,873 tons, of value £23,197,968; in 1855, 3,218,154 tons of pig-iron, of value £8,045,385; 1864, 4,767,951 tons, of value £11,919,877. In 1854 the length of the railroads worked in the United Kingdom was 8,054 miles, with a paid-up capital of £286,068,794; in 1864 the length was 12,789 miles, with capital paid up of £425,719,613. In 1854 the total sum of the exports and imports of the United Kingdom was £268,210,145; in 1865, £489,923,285. The following table shows the movement of the exports:

1846	£58,842,377
1849	63,596,052
1856	115,826,948
1860	135,842,817
1865	165,862,402
1866 ^[37]	188,917,563

After these few examples one understands the cry of triumph of the Registrar-General of the British people:

“Rapidly as the population has increased, it has not kept pace with the progress of industry and wealth.” ^[38]

Let us turn now to the direct agents of this industry, or the

producers of this wealth, to the working class.

“It is one of the most melancholy features in the social state of this country,” says Gladstone, “that while there was a decrease in the consuming powers of the people, and while there was an increase in the privations and distress of the labouring class and operatives, there was at the same time a constant accumulation of wealth in the upper classes, and a constant increase of capital.” [\[39\]](#)

Thus spake this unctuous minister in the House of Commons of February 13th, 1843. On April 16th, 1863, 20 years later, in the speech in which he introduced his Budget:

“From 1842 to 1852 the taxable income of the country increased by 6 per cent.... In the 8 years from 1853 to 1861 it had increased from the basis taken in 1853 by 20 per cent.! The fact is so astonishing as to be almost incredible ... this intoxicating augmentation of wealth and power ... entirely confined to classes of property ... must be of indirect benefit to the labouring population, because it cheapens the commodities of general consumption. While the rich have been growing richer, the poor have been growing less poor. At any rate, whether the extremes of poverty are less, I do not presume to say.” [\[40\]](#)

How lame an anti-climax! If the working class has remained “poor,” only “less poor” in proportion as it produces for the wealthy class “an intoxicating augmentation of wealth and power,” then it has remained relatively just as poor. If the extremes of poverty have not lessened, they have increased,

because the extremes of wealth have. As to the cheapening of the means of subsistence, the official statistics, *e.g.*, the accounts of the London Orphan Asylum, show an increase in price of 20% for the average of the three years 1860-1862, compared with 1851-1853. In the following three years, 1863-1865, there was a progressive rise in the price of meat, butter, milk, sugar, salt, coals, and a number of other necessary means of subsistence. [\[41\]](#) Gladstone's next Budget speech of April 7th, 1864, is a Pindaric dithyrambus on the advance of surplus-value-making and the happiness of the people "tempered by poverty." He speaks of masses "on the border" of pauperism, of branches of trade in which "wages have not increased," and finally sums up the happiness of the working class in the words:

"human life is but, in nine cases out of ten, a struggle for existence." [\[42\]](#)

Professor Fawcett, not bound like Gladstone by official considerations, declares roundly:

"I do not, of course, deny that money wages have been augmented by this increase of capital (in the last ten years), but this apparent advantage is to a great extent lost, because many of the necessities of life are becoming dearer" (he believes because of the fall in value of the precious metals)... "the rich grow rapidly richer, whilst there is no perceptible advance in the comfort enjoyed by the industrial classes.... They (the labourers) become almost the slaves of the tradesman, to whom they owe money." [\[43\]](#)

In the chapters on the “working-day” and “machinery,” the reader has seen under what circumstances the British working class created an “intoxicating augmentation of wealth and power” for the propertied classes. There we were chiefly concerned with the social functioning of the labourer. But for a full elucidation of the law of accumulation, his condition outside the workshop must also be looked at, his condition as to food and dwelling. The limits of this book compel us to concern ourselves chiefly with the worst paid part of the industrial proletariat, and with the agricultural labourers, who together form the majority of the working class.

But first, one word on official pauperism, or on that part of the working class which has forfeited its condition of existence (the sale of labour power), and vegetates upon public alms.

The official list of paupers numbered in England [\[44\]](#) 851,369 persons; in 1856, 877,767; in 1865, 971,433. In consequence of the cotton famine, it grew in the years 1863 and 1864 to 1,079,382 and 1,014,978. The crisis of 1866, which fell most heavily on London, created in this centre of the world market, more populous than the kingdom of Scotland, an increase of pauperism for the year 1866 of 19.5% compared with 1865, and of 24.4% compared with 1864, and a still greater increase for the first months of 1867 as compared with 1866. From the analysis of the statistics of pauperism, two points are to be taken. On the one hand, the fluctuation up and down of the number of paupers, reflects the periodic changes of the industrial cycle. On the other, the official statistics become more and more misleading as to the actual extent of pauperism in proportion as, with the accumulation of capital, the class-

struggle, and, therefore, the class consciousness of the working men, develop. *E.g.*, the barbarity in the treatment of the paupers, at which the English Press (*The Times*, *Pall Mall Gazette*, etc.) have cried out so loudly during the last two years, is of ancient date. F. Engels showed in 1844 exactly the same horrors, exactly the same transient canting outcries of “sensational literature.” But frightful increase of “deaths by starvation” in London during the last ten years proves beyond doubt the growing horror in which the working-people hold the slavery of the workhouse, that place of punishment for misery. [\[45\]](#)

B. The Badly Paid Strata of the British Industrial Class

During the cotton famine of 1862, Dr. Smith was charged by the Privy Council with an inquiry into the conditions of nourishment of the distressed operatives in Lancashire and Cheshire. His observations during many preceding years had led him to the conclusion that “to avert starvation diseases,” the daily food of an average woman ought to contain at least 3,900 grains of carbon with 180 grains of nitrogen; the daily food of an average man, at least 4,300 grains of carbon with 200 grains of nitrogen; for women, about the same quantity of nutritive elements as are contained in 2 lbs. of good wheaten bread, for men $\frac{1}{9}$ more; for the weekly average of adult men and women, at least 28,600 grains of carbon and 1,330 grains of nitrogen. His calculation was practically confirmed in a surprising manner by its agreement with the miserable quantity of nourishment to which want had forced down the

consumption of the cotton operatives. This was, in December, 1862, 29,211 grains of carbon, and 1,295 grains of nitrogen weekly.

In the year 1863, the Privy Council ordered an inquiry into the state of distress of the worst-nourished part of the English working class. Dr. Simon, medical officer to the Privy Council, chose for this work the above-mentioned Dr. Smith. His inquiry ranges on the one hand over the agricultural labourers, on the other, over silk-weavers, needlewomen, kid-glovers, stocking-weavers, glove-weavers, and shoemakers. The latter categories are, with the exception of the stocking-weavers, exclusively town-dwellers. It was made a rule in the inquiry to select in each category the most healthy families, and those comparatively in the best circumstances.

As a general result it was found that

“in only one of the examined classes of in-door operatives did the average nitrogen supply just exceed, while in another it nearly reached, the estimated standard of bare sufficiency [*i.e.*, sufficient to avert starvation diseases], and that in two classes there was defect — in one, a very large defect — of both nitrogen and carbon. Moreover, as regards the examined families of the agricultural population, it appeared that more than a fifth were with less than the estimated sufficiency of carbonaceous food, that more than one-third were with less than the estimated sufficiency of nitrogenous food, and that in three counties (Berkshire, Oxfordshire, and Somersetshire), insufficiency of nitrogenous food was the average local diet.”

Among the agricultural labourers, those of England, the wealthiest part of the United Kingdom, were the worst fed. [47]

The insufficiency of food among the agricultural labourers, fell, as a rule, chiefly on the women and children, for “the man must eat to do his work.” Still greater penury ravaged the town-workers examined.

“They are so ill fed that assuredly among them there must be many cases of severe and injurious privation.” [48]

(“Privation” of the capitalist all this! *i.e.*, “abstinence” from paying for the means of subsistence absolutely necessary for the mere vegetation of his “hands.”) [49]

The following table shows the conditions of nourishment of the above-named categories of purely town-dwelling work-people, as compared with the minimum assumed by Dr. Smith, and with the food-allowance of the cotton operatives during the time of their greatest distress:

Both Sexes	Average weekly carbon	Average weekly nitrogen
Five in-door occupations	28,876 grains	1,192 grains
Unemployed Lancashire Operatives	28,211 grains	1,295 grains
Minimum quantity to be	28,600 grains	1,330 grains

allowed to the Lancashire Operatives, equal number of males and females		
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One half, or 60/125, of the industrial labour categories investigated, had absolutely no beer, 28% no milk. The weekly average of the liquid means of nourishment in the families varied from seven ounces in the needle-women to $24\frac{3}{4}$ ounces in the stocking-makers. The majority of those who did not obtain milk were needle-women in London. The quantity of bread-stuffs consumed weekly varied from $7\frac{3}{4}$ lbs. for the needle-women to $11\frac{1}{2}$ lbs. for the shoemakers, and gave a total average of 9.9 lbs. per adult weekly. Sugar (treacle, etc.) varied from 4 ounces weekly for the kid-glovers to 11 ounces for the stocking-makers; and the total average per week for all categories was 8 ounces per adult weekly. Total weekly average of butter (fat, etc.) 5 ounces per adult. The weekly average of meat (bacon, etc.) varied from $7\frac{1}{4}$ ounces for the silk-weavers, to $18\frac{1}{4}$ ounces for the kid-glovers; total average for the different categories 13.6 ounces. The weekly cost of food per adult, gave the following average figures; silk-weavers 2s. $2\frac{1}{2}$ d., needle-women 2s. 7d., kid-glovers 2s. $9\frac{1}{2}$ d., shoemakers 2s. $7\frac{3}{4}$ d., stocking-weavers 2s. $6\frac{1}{4}$ d. For the silk-weavers of Macclesfield the average was only 1s. $8\frac{1}{2}$ d. The worst categories were the needle-women, silk-weavers and kid-glovers. [\[50\]](#) Of these facts, Dr. Simon in his General Health Report says:

“That cases are innumerable in which defective diet is the cause or the aggravator of disease, can be affirmed by any one who is conversant with poor law medical practice, or with the wards and out-patient rooms of hospitals.... Yet in this point of view, there is, in my opinion, a very important sanitary context to be added. It must be remembered that privation of food is very reluctantly borne, and that as a rule great poorness of diet will only come when other privations have preceded it. Long before insufficiency of diet is a matter of hygienic concern, long before the physiologist would think of counting the grains of nitrogen and carbon which intervene between life and starvation, the household will have been utterly destitute of material comfort; clothing and fuel will have been even scantier than food — against inclemencies of weather there will have been no adequate protection — dwelling space will have been stinted to the degree in which overcrowding produces or increases disease; of household utensils and furniture there will have been scarcely any — even cleanliness will have been found costly or difficult, and if there still be self-respectful endeavours to maintain it, every such endeavour will represent additional pangs of hunger. The home, too, will be where shelter can be cheapest bought; in quarters where commonly there is least fruit of sanitary supervision, least drainage, least scavenging, least suppression of public nuisances, least or worst water supply, and, if in town, least light and air. Such are the sanitary dangers to which poverty is almost certainly exposed, when it is poverty enough to imply scantiness of food. And while the sum of them is of terrible magnitude against life, the mere scantiness

of food is in itself of very serious moment.... These are painful reflections, especially when it is remembered that the poverty to which they advert is not the deserved poverty of idleness. In all cases it is the poverty of working populations. Indeed, as regards the in-door operatives, the work which obtains the scanty pittance of food, is for the most part excessively prolonged. Yet evidently it is only in a qualified sense that the work can be deemed self-supporting.... And on a very large scale the nominal self-support can be only a circuit, longer or shorter, to pauperism.” [\[51\]](#)

The intimate connexion between the pangs of hunger of the most industrious layers of the working class, and the extravagant consumption, coarse or refined, of the rich, for which capitalist accumulation is the basis, reveals itself only when the economic laws are known. It is otherwise with the “housing of the poor.” Every unprejudiced observer sees that the greater the centralisation of the means of production, the greater is the corresponding heaping together of the labourers, within a given space; that therefore the swifter capitalistic accumulation, the more miserable are the dwellings of the working-people. “Improvements” of towns, accompanying the increase of wealth, by the demolition of badly built quarters, the erection of palaces for banks, warehouses, &c., the widening of streets for business traffic, for the carriages of luxury, and for the introduction of tramways, &c., drive away the poor into even worse and more crowded hiding places. On the other hand, every one knows that the dearness of dwellings is in inverse ratio to their excellence, and that the mines of misery are exploited by house speculators with more profit or

less cost than ever were the mines of Potosi. The antagonistic character of capitalist accumulation, and therefore of the capitalistic relations of property generally, [\[52\]](#) is here so evident, that even the official English reports on this subject teem with heterodox onslaughts on “property and its rights.” With the development of industry, with the accumulation of capital, with the growth and “improvement” of towns, the evil makes such progress that the mere fear of contagious diseases which do not spare even “respectability,” brought into existence from 1847 to 1864 no less than 10 Acts of Parliament on sanitation, and that the frightened bourgeois in some towns, as Liverpool, Glasgow, &c., took strenuous measures through their municipalities. Nevertheless Dr. Simon, in his report of 1865, says:

“Speaking generally, it may be said that the evils are uncontrolled in England.”

By order of the Privy Council, in 1864, an inquiry was made into the conditions of the housing of the agricultural labourers, in 1865 of the poorer classes in the towns. The results of the admirable work of Dr. Julian Hunter are to be found in the seventh (1865) and eighth (1866) reports on “Public Health.” To the agricultural labourers, I shall come later. On the condition of town dwellings, I quote, as preliminary, a general remark of Dr. Simon.

“Although my official point of view,” he says, “is one exclusively physical, common humanity requires that the other aspect of this evil should not be ignored In its higher degrees it [*i.e.*, over-crowding] almost necessarily involves

such negation of all delicacy, such unclean confusion of bodies and bodily functions, such exposure of animal and sexual nakedness, as is rather bestial than human. To be subject to these influences is a degradation which must become deeper and deeper for those on whom it continues to work. To children who are born under its curse, it must often be a very baptism into infamy. And beyond all measure hopeless is the wish that persons thus circumstanced should ever in other respects aspire to that atmosphere of civilisation which has its essence in physical and moral cleanliness.” [\[53\]](#)

London takes the first place in over-crowded habitations, absolutely unfit for human beings.

“He feels clear,” says Dr. Hunter, “on two points; first, that there are about 20 large colonies in London, of about 10,000 persons each, whose miserable condition exceeds almost anything he has seen elsewhere in England, and is almost entirely the result of their bad house accommodation; and second, that the crowded and dilapidated condition of the houses of these colonies is much worse than was the case 20 years ago.” [\[54\]](#) “It is not too much to say that life in parts of London and Newcastle is infernal.” [\[55\]](#)

Further, the better-off part of the working class, together with the small shopkeepers and other elements of the lower middle class, falls in London more and more under the curse of these vile conditions of dwelling, in proportion as “improvements,” and with them the demolition of old streets and houses, advance, as factories and the afflux of human beings grow in the metropolis, and finally as house rents rise with the ground-

rents.

“Rents have become so heavy that few labouring men can afford more than one room.” [\[56\]](#)

There is almost no house-property in London that is not overburdened with a number of middlemen. For the price of land in London is always very high in comparison with its yearly revenue, and therefore every buyer speculates on getting rid of it again at a jury price (the expropriation valuation fixed by jurymen), or on pocketing an extraordinary increase of value arising from the neighbourhood of some large establishment. As a consequence of this there is a regular trade in the purchase of “fag-ends of leases.”

“Gentlemen in this business may be fairly expected to do as they do — get all they can from the tenants while they have them, and leave as little as they can for their successors.” [\[57\]](#)

The rents are weekly, and these gentlemen run no risk. In consequence of the making of railroads in the City,

“the spectacle has lately been seen in the East of London of a number of families wandering about some Saturday night with their scanty worldly goods on their backs, without any resting place but the workhouse.” [\[58\]](#)

The workhouses are already over-crowded, and the “improvements” already sanctioned by Parliament are only just begun. If labourers are driven away by the demolition of their old houses, they do not leave their old parish, or at most they settle down on its borders, as near as they can get to it.

“They try, of course, to remain as near as possible to their workshops. The inhabitants do not go beyond the same or the next parish, parting their two-room tenements into single rooms, and crowding even those.... Even at an advanced rent, the people who are displaced will hardly be able to get an accommodation so good as the meagre one they have left.... Half the workmen ... of the Strand ... walked two miles to their work.” [\[59\]](#)

This same Strand, a main thoroughfare which gives strangers an imposing idea of the wealth of London, may serve as an example of the packing together of human beings in that town. In one of its parishes, the Officer of Health reckoned 581 persons per acre, although half the width of the Thames was reckoned in. It will be self-understood that every sanitary measure, which, as has been the case hitherto in London, hunts the labourers from one quarter, by demolishing uninhabitable houses, serves only to crowd them together yet more closely in another.

“Either,” says Dr. Hunter, “the whole proceeding will of necessity stop as an absurdity, or the public compassion (!) be effectually aroused to the obligation which may now be without exaggeration called national, of supplying cover to those who by reason of their having no capital, cannot provide it for themselves, though they can by periodical payments reward those who will provide it for them.” [\[60\]](#)

Admire this capitalistic justice! The owner of land, of houses, the businessman, when expropriated by “improvements” such as railroads, the building of new streets, &c., not only receives

full indemnity. He must, according to law, human and divine, be comforted for his enforced “abstinence” over and above this by a thumping profit. The labourer, with his wife and child and chattels, is thrown out into the street, and — if he crowds in too large numbers towards quarters of the town where the vestries insist on decency, he is prosecuted in the name of sanitation!

Except London, there was at the beginning of the 19th century no single town in England of 100,000 inhabitants. Only five had more than 50,000. Now there are 28 towns with more than 50,000 inhabitants.

“The result of this change is not only that the class of town people is enormously increased, but the old close-packed little towns are now centres, built round on every side, open nowhere to air, and being no longer agreeable to the rich are abandoned by them for the pleasanter outskirts. The successors of these rich are occupying the larger houses at the rate of a family to each room [... and find accommodation for two or three lodgers ...] and a population, for which the houses were not intended and quite unfit, has been created, whose surroundings are truly degrading to the adults and ruinous to the children.” [\[61\]](#)

The more rapidly capital accumulates in an industrial or commercial town, the more rapidly flows the stream of exploitable human material, the more miserable are the improvised dwellings of the labourers.

Newcastle-on-Tyne, as the centre of a coal and iron district of growing productiveness, takes the next place after London in

the housing inferno. Not less than 34,000 persons live there in single rooms. Because of their absolute danger to the community, houses in great numbers have lately been destroyed by the authorities in Newcastle and Gateshead. The building of new houses progresses very slowly, business very quickly. The town was, therefore, in 1865, more full than ever. Scarcely a room was to let. Dr. Embleton, of the Newcastle Fever Hospital, says:

“There can be little doubt that the great cause of the continuance and spread of the typhus has been the overcrowding of human beings, and the uncleanness of their dwellings. The rooms, in which labourers in many cases live, are situated in confined and unwholesome yards or courts, and for space, light, air, and cleanliness, are models of insufficiency and insalubrity, and a disgrace to any civilised community; in them men, women, and children lie at night huddled together: and as regards the men, the night-shift succeed the day-shift, and the day-shift the night-shift in unbroken series for some time together, the beds having scarcely time to cool; the whole house badly supplied with water and worse with privies; dirty, unventilated, and pestiferous.” [\[62\]](#)

The price per week of such lodgings ranges from 8d. to 3s.

“The town of Newcastle-on-Tyne,” says Dr. Hunter, “contains a sample of the finest tribe of our countrymen, often sunk by external circumstances of house and street into an almost savage degradation.” [\[63\]](#)

As a result of the ebbing and flowing of capital and labour, the state of the dwellings of an industrial town may today be bearable, tomorrow hideous. Or the aedileship of the town may have pulled itself together for the removal of the most shocking abuses. Tomorrow, like a swarm of locusts, come crowding in masses of ragged Irishmen or decayed English agricultural labourers. They are stowed away in cellars and lofts, or the hitherto respectable labourer's dwelling is transformed into a lodging house whose *personnel* changes as quickly as the billets in the 30 years' war. Example: Bradford (Yorkshire). There the municipal philistine was just busied with urban improvements. Besides, there were still in Bradford, in 1861, 1,751 uninhabited houses. But now comes that revival of trade which the mildly liberal Mr. Forster, the negro's friend, recently crowed over with so much grace. With the revival of trade came of course an overflow from the waves of the ever fluctuating "reserve army" or "relative surplus population." The frightful cellar habitations and rooms registered in the list, [\[64\]](#) which Dr. Hunter obtained from the agent of an Insurance Company, were for the most part inhabited by well-paid labourers. They declared that they would willingly pay for better dwellings if they were to be had. Meanwhile, they become degraded, they fall ill, one and all, whilst the mildly liberal Forster, M. P., sheds tears over the blessings of Free Trade, and the profits of the eminent men of Bradford who deal in worsted. In the Report of September, 1865, Dr. Bell, one of the poor law doctors of Bradford, ascribes the frightful mortality of fever-patients in his district to the nature of their dwellings.

“In one small cellar measuring 1,500 cubic feet ... there are ten persons Vincent Street, Green Aire Place, and the Leys include 223 houses having 1,450 inhabitants, 435 beds, and 36 privies.... The beds — and in that term I include any roll of dirty old rags, or an armful of shavings — have an average of 3.3 persons to each, many have 5 and 6 persons to each, and some people, I am told, are absolutely without beds; they sleep in their ordinary clothes, on the bare boards — young men and women, married and unmarried, all together. I need scarcely add that many of these dwellings are dark, damp, dirty, stinking holes, utterly unfit for human habitations; they are the centres from which disease and death are distributed amongst those in better circumstances, who have allowed them thus to fester in our midst.” [\[65\]](#)

Bristol takes the third place after London in the misery of its dwellings.

“Bristol, where the blankest poverty and domestic misery abound in the wealthiest town of Europe.” [\[66\]](#)

C. The Nomad Population

We turn now to a class of people whose origin is agricultural, but whose occupation is in great part industrial. They are the light infantry of capital, thrown by it, according to its needs, now to this point, now to that. When they are not on the march, they “camp.” Nomad labour is used for various operations of building and draining, brick-making, lime-burning, railway-making, &c. A flying column of pestilence, it

carries into the places in whose neighbourhood it pitches its camp, small-pox, typhus, cholera, scarlet fever, &c. [\[67\]](#) In undertakings that involve much capital outlay, such as railways, &c., the contractor himself generally provides his army with wooden huts and the like, thus improvising villages without any sanitary provisions, outside the control of the local boards, very profitable to the contractor, who exploits the labourers in two-fold fashion — as soldiers of industry and as tenants. According as the wooden hut contains 1, 2, or 3 holes, its inhabitant, navvy, or whatever he may be, has to pay 1, 3, or 4 shillings weekly. [\[68\]](#) One example will suffice. In September, 1864, Dr. Simon reports that the Chairman of the Nuisances Removal Committee of the parish of Sevenoaks sent the following denunciation to Sir George Grey, Home Secretary: —

“Small-pox cases were rarely heard of in this parish until about twelve months ago. Shortly before that time, the works for a railway from Lewisham to Tunbridge were commenced here, and, in addition to the principal works being in the immediate neighbourhood of this town, here was also established the dépôt for the whole of the works, so that a large number of persons was of necessity employed here. As cottage accommodation could not be obtained for them all, huts were built in several places along the line of the works by the contractor, Mr. Jay, for their especial occupation. These huts possessed no ventilation nor drainage, and, besides, were necessarily over-crowded, because each occupant had to accommodate lodgers, whatever the number in his own family might be, although there were only two rooms to each

tenement. The consequences were, according to the medical report we received, that in the night-time these poor people were compelled to endure all the horror of suffocation to avoid the pestiferous smells arising from the filthy, stagnant water, and the privies close under their windows. Complaints were at length made to the Nuisances Removal Committee by a medical gentleman who had occasion to visit these huts, and he spoke of their condition as dwellings in the most severe terms, and he expressed his fears that some very serious consequences might ensue, unless some sanitary measures were adopted. About a year ago, Mr. Jay promised to appropriate a hut, to which persons in his employ, who were suffering from contagious diseases, might at once be removed. He repeated that promise on the 23rd July last, but although since the date of the last Promise there have been several cases of small-pox in his huts, and two deaths from the same disease, yet he has taken no steps whatever to carry out his promise. On the 9th September instant, Mr. Kelson, surgeon, reported to me further cases of small-pox in the same huts, and he described their condition as most disgraceful. I should add, for your (the Home Secretary's) information that an isolated house, called the Pest-house, which is set apart for parishioners who might be suffering from infectious diseases, has been continually occupied by such patients for many months past, and is also now occupied; that in one family five children died from small-pox and fever; that from the 1st April to the 1st September this year, a period of five months, there have been no fewer than ten deaths from small-pox in the parish, four of them being in the huts already referred to; that

it is impossible to ascertain the exact number of persons who have suffered from that disease although they are known to be many, from the fact of the families keeping it as private as possible.” [\[69\]](#)

The labourers in coal and other mines belong to the best paid categories of the British proletariat. The price at which they buy their wages was shown on an earlier page. [\[70\]](#) Here I merely cast a hurried glance over the conditions of their dwellings. As a rule, the exploiter of a mine, whether its owner or his tenant, builds a number of cottages for his hands. They receive cottages and coal for firing “for nothing” — *i.e.*, these form part of their wages, paid in kind. Those who are not lodged in this way receive in compensation £4 per annum. The mining districts attract with rapidity a large population, made up of the miners themselves, and the artisans, shopkeepers, &c., that group themselves around them. The ground-rents are high, as they are generally where population is dense. The master tries, therefore, to run up, within the smallest space possible at the mouth of the pit, just so many cottages as are necessary to pack together his hands and their families. If new mines are opened in the neighbourhood, or old ones are again set working, the pressure increases. In the construction of the cottages, only one point of view is of moment, the “abstinence” of the capitalist from all expenditure that is not absolutely unavoidable.

“The lodging which is obtained by the pitman and other labourers connected with the collieries of Northumberland and Durham,” says Dr. Julian Hunter, “is perhaps, on the whole,

the worst and the dearest of which any large specimens can be found in England, the similar parishes of Monmouthshire excepted.... The extreme badness is in the high number of men found in one room, in the smallness of the ground-plot on which a great number of houses are thrust, the want of water, the absence of privies, and the frequent placing of one house on the top of another, or distribution into flats, ... the lessee acts as if the whole colony were encamped, not resident.” [\[71\]](#)

“In pursuance of my instructions,” says Dr. Stevens, “I visited most of the large colliery villages in the Durham Union.... With very few exceptions, the general statement that no means are taken to secure the health of the inhabitants would be true of all of them.... All colliers are bound [‘bound,’ an expression which, like bondage, dates from the age of serfdom] to the colliery lessee or owner for twelve months.... If the colliers express discontent, or in any way annoy the ‘viewer,’ a mark of memorandum is made against their names, and, at the annual ‘binding,’ such men are turned off... It appears to me that no part of the ‘truck system’ could be worse than what obtains in these densely-populated districts. The collier is bound to take as part of his hiring a house surrounded with pestiferous influences; he cannot help himself, and it appears doubtful whether anyone else can help him except his proprietor (he is, to all intents and purposes, a serf), and his proprietor first consults his balance-sheet, and the result is tolerably certain. The collier is also often supplied with water by the proprietor, which, whether it be good or bad, he has to pay for, or rather he suffers a deduction for from his wages.”

[\[72\]](#)

In conflict with “public opinion,” or even with the Officers of Health, capital makes no difficulty about “justifying” the conditions partly dangerous, partly degrading, to which it confines the working and domestic life of the labourer, on the ground that they are necessary for profit. It is the same thing when capital “abstains” from protective measures against dangerous machinery in the factory, from appliances for ventilation and for safety in mines, &c. It is the same here with the housing of the miners. Dr. Simon, medical officer of the Privy Council, in his official Report says:

“In apology for the wretched household accommodation ... it is alleged that miners are commonly worked on lease; that the duration of the lessee’s interest (which in collieries is commonly for 21 years), is not so long that he should deem it worth his while to create good accommodation for his labourers, and for the tradespeople and others whom the work attracts; that even if he were disposed to act liberally in the matter, this disposition would commonly be defeated by his landlord’s tendency to fix on him, as ground-rent, an exorbitant additional charge for the privilege of having on the surface of the ground the decent and comfortable village which the labourers of the subterranean property ought to inhabit, and that prohibitory price (if not actual prohibition) equally excludes others who might desire to build. It would be foreign to the purpose of this report to enter upon any discussion of the merits of the above apology. Nor here is it even needful to consider where it would be that, if decent accommodation were provided, the cost ... would eventually fall — whether on landlord, or lessee, or labourer, or public.

But in presence of such shameful facts as are vouched for in the annexed reports [those of Dr. Hunter, Dr. Stevens, &c.] a remedy may well be claimed.... Claims of landlordship are being so used as to do great public wrong. The landlord in his capacity of mine-owner invites an industrial colony to labour on his estate, and then in his capacity of surface-owner makes it impossible that the labourers whom he collects, should find proper lodging where they must live. The lessee [the capitalist exploiter] meanwhile has no pecuniary motive for resisting that division of the bargain; well knowing that if its latter conditions be exorbitant, the consequences fall, not on him, that his labourers on whom they fall have not education enough to know the value of their sanitary rights, that neither obscenest lodging nor foulest drinking water will be appreciable inducements towards a ‘strike.’” [\[73\]](#)

D. Effect of Crises on the Best Paid Part of the working class

Before I turn to the regular agricultural labourers, I may be allowed to show, by one example, how industrial revulsions affect even the best-paid, the aristocracy, of the working class. It will be remembered that the year 1857 brought one of the great crises with which the industrial cycle periodically ends. The next termination of the cycle was due in 1866. Already discounted in the regular factory districts by the cotton famine, which threw much capital from its wonted sphere into the great centres of the money-market, the crisis assumed, at this time, an especially financial character. Its outbreak in 1866 was signalised by the failure of a gigantic London Bank,

immediately followed by the collapse of countless swindling companies. One of the great London branches of industry involved in the catastrophe was iron shipbuilding. The magnates of this trade had not only over-produced beyond all measure during the overtrading time, but they had, besides, engaged in enormous contracts on the speculation that credit would be forthcoming to an equivalent extent. Now, a terrible reaction set in, that even at this hour (the end of March, 1867) continues in this and other London industries. [\[74\]](#) To show the condition of the labourers, I quote the following from the circumstantial report of a correspondent of the *Morning Star*, who, at the end of 1866, and beginning of 1867, visited the chief centres of distress:

“In the East End districts of Poplar, Millwall, Greenwich, Deptford, Limehouse and Canning Town, at least 15,000 workmen and their families were in a state of utter destitution, and 3,000 skilled mechanics were breaking stones in the workhouse yard (after distress of over half a year’s duration).... I had great difficulty in reaching the workhouse door, for a hungry crowd besieged it.... They were waiting for their tickets, but the time had not yet arrived for the distribution. The yard was a great square place with an open shed running all round it, and several large heaps of snow covered the paving-stones in the middle. In the middle, also, were little wicker-fenced spaces, like sheep pens, where in finer weather the men worked; but on the day of my visit the pens were so snowed up that nobody could sit in them. Men were busy, however, in the open shed breaking paving-stones into macadam. Each man had a big paving-stone for a seat,

and he chipped away at the rime-covered granite with a big hammer until he had broken up, and think! five bushels of it, and then he had done his day's work, and got his day's pay — threepence and an allowance of food. In another part of the yard was a rickety little wooden house, and when we opened the door of it, we found it filled with men who were huddled together shoulder to shoulder for the warmth of one another's bodies and breath. They were picking oakum and disputing the while as to which could work the longest on a given quantity of food — for endurance was the point of honour. Seven thousand ... in this one workhouse ... were recipients of relief ... many hundreds of them ... it appeared, were, six or eight months ago, earning the highest wages paid to artisans.... Their number would be more than doubled by the count of those who, having exhausted all their savings, still refuse to apply to the parish, because they have a little left to pawn. Leaving the workhouse, I took a walk through the streets, mostly of little one-storey houses, that abound in the neighbourhood of Poplar. My guide was a member of the Committee of the Unemployed.... My first call was on an ironworker who had been seven and twenty weeks out of employment. I found the man with his family sitting in a little back room. The room was not bare of furniture, and there was a fire in it. This was necessary to keep the naked feet of the young children from getting frost bitten, for it was a bitterly cold day. On a tray in front of the fire lay a quantity of oakum, which the wife and children were picking in return for their allowance from the parish. The man worked in the stone yard of the workhouse for a certain ration of food, and threepence per day. He had now

come home to dinner quite hungry, as he told us with a melancholy smile, and his dinner consisted of a couple of slices of bread and dripping, and a cup of milkless tea.... The next door at which we knocked was opened by a middle-aged woman, who, without saying a word, led us into a little back parlour, in which sat all her family, silent and fixedly staring at a rapidly dying fire. Such desolation, such hopelessness was about these people and their little room, as I should not care to witness again. ‘Nothing have they done, sir,’ said the woman, pointing to her boys, ‘for six and twenty weeks; and all our money gone — all the twenty pounds that me and father saved when times were better, thinking it would yield a little to keep us when we got past work. Look at it,’ she said, almost fiercely, bringing out a bank-book with all its well kept entries of money paid in, and money taken out, so that we could see how the little fortune had begun with the first five shilling deposit, and had grown by little and little to be twenty pounds, and how it had melted down again till the sum in hand got from pounds to shillings, and the last entry made the book as worthless as a blank sheet. This family received relief from the workhouse, and it furnished them with just one scanty meal per day.... Our next visit was to an iron labourer’s wife, whose husband had worked in the yards. We found her ill from want of food, lying on a mattress in her clothes, and just covered with a strip of carpet, for all the bedding had been pawned. Two wretched children were tending her, themselves looking as much in need of nursing as their mother. Nineteen weeks of enforced idleness had brought them to this pass, and while the mother told the history of that bitter past, she

moaned as if all her faith in a future that should atone for it were dead.... On getting outside a young fellow came running after us, and asked us to step inside his house and see if anything could be done for him. A young wife, two pretty children, a cluster of pawn-tickets, and a bare room were all he had to show.”

On the after pains of the crisis of 1866, the following extract from a Tory newspaper. It must not be forgotten that the East-end of London, which is here dealt with, is not only the seat of the iron shipbuilding mentioned above, but also of a so-called “home-industry” always underpaid.

“A frightful spectacle was to be seen yesterday in one part of the metropolis. Although the unemployed thousands of the East-end did not parade with their black flags *en masse*, the human torrent was imposing enough. Let us remember what these people suffer. They are dying of hunger. That is the simple and terrible fact. There are 40,000 of them.... In our presence, in one quarter of this wonderful metropolis, are packed — next door to the most enormous accumulation of wealth the world ever saw — cheek by jowl with this are 40,000 helpless, starving people. These thousands are now breaking in upon the other quarters; always half-starving, they cry their misery in our ears, they cry to Heaven, they tell us from their miserable dwellings, that it is impossible for them to find work, and useless for them to beg. The local ratepayers themselves are driven by the parochial charges to the verge of pauperism.” — (*Standard*, 5th April, 1867.)

As it is the fashion amongst English capitalists to quote

Belgium as the Paradise of the labourer because “freedom of labour,” or what is the same thing, “freedom of capital,” is there limited neither by the despotism of Trades’ Unions, nor by Factory Acts, a word or two on the “happiness” of the Belgian labourer. Assuredly no one was more thoroughly initiated in the mysteries of this happiness than the late M. Ducpétiaux, inspector-general of Belgian prisons and charitable institutions, and member of the central commission of Belgian statistics. Let us take his work: “Budgets économiques des classes ouvrières de la Belgique,” Bruxelles, 1855. Here we find among other matters, a normal Belgian labourer’s family, whose yearly income and expenditure he calculates on very exact data, and whose conditions of nourishment are then compared with those of the soldier, sailor, and prisoner. The family “consists of father, mother, and four children.” Of these 6 persons “four may be usefully employed the whole year through.” It is assumed that “there is no sick person nor one incapable of work, among them,” nor are there “expenses for religious, moral, and intellectual purposes, except a very small sum for church sittings,” nor “contributions to savings banks or benefit societies,” nor “expenses due to luxury or the result of improvidence.” The father and eldest son, however, allow themselves “the use of tobacco,” and on Sundays “go to the *cabaret*,” for which a whole 86 centimes a week are reckoned.

“From a general compilation of wages allowed to the labourers in different trades, it follows that the highest average of daily wage is 1 franc 56c., for men, 89 centimes for women, 56 centimes for boys, and 55 centimes for girls. Calculated at

this rate, the resources of the family would amount, at the maximum, to 1,068 francs a-year.... In the family ... taken as typical we have calculated all possible resources. But in ascribing wages to the mother of the family we *raise the question of the direction of the household*. How will its internal economy be cared for? Who will look after the young children? Who will get ready the meals, do the washing and mending? This is the dilemma incessantly presented to the labourers.”

According to this the budget of the family is:

The father	300 working-days at fr. 1.56	fr. 468
mother	300 working-days at fr. 0.89	fr. 267
boy	300 working-days at fr. 0.56	fr. 168
girl	300 working-days at fr. 0.55	fr. 165
		Total fr. 1,068

The annual expenditure of the family would cause a deficit upon the hypothesis that the labourer has the food of:

The man-of-war's man	fr. 1,828	Deficit fr. 760
The soldier	fr. 1,473	Deficit fr. 405
The prisoner	fr. 1,112	Deficit fr. 44

“We see that few labouring families can reach, we will not say the average of the sailor or soldier, but even that of the prisoner. The general average (of the cost of each prisoner in the different prisons during the period 1847-1849), has been

63 centimes for all prisons. This figure, compared with that of the daily maintenance of the labourer, shows a difference of 13 centimes. It must be remarked further, that if in the prisons it is necessary to set down in the account the expenses of administration and surveillance, on the other hand, the prisoners have not to pay for their lodging; that the purchases they make at the canteens are not included in the expenses of maintenance, and that these expenses are greatly lowered in consequence of the large number of persons that make up the establishments, and of contracting for or buying wholesale, the food and other things that enter into their consumption.... How comes it, however, that a great number, we might say, a great majority, of labourers, live in a more economical way? It is ... by adopting expedients, the secret of which only the labourer knows; by reducing his daily rations; by substituting rye-bread for wheat; by eating less meat, or even none at all, and the same with butter and condiments; by contenting themselves with one or two rooms where the family is crammed together, where boys and girls sleep side by side, often on the same pallet; by economy of clothing, washing, decency; by giving up the Sunday diversions; by, in short, resigning themselves to the most painful privations. Once arrived at this extreme limit, the least rise in the price of food, stoppage of work, illness, increases the labourer's distress and determines his complete ruin; debts accumulate, credit fails, the most necessary clothes and furniture are pawned, and finally, the family asks to be enrolled on the list of paupers." (Ducpétiaux, l. c., pp. 151, 154, 155.)

In fact, in this "Paradise of capitalists" there follows, on the

smallest change in the price of the most essential means of subsistence, a change in the number of deaths and crimes! (See Manifesto of the Maatschappij: “De Vlamingen Vooruit!” Brussels, 1860, pp. 15, 16.) In all Belgium are 930,000 families, of whom, according to the official statistics, 90,000 are wealthy and on the list of voters = 450,000 persons; 390,000 families of the lower middle-class in towns and villages, the greater part of them constantly sinking into the proletariat, = 1,950,000 persons. Finally, 450,000 working class families = 2,250,000 persons, of whom the model ones enjoy the happiness depicted by Ducpétiaux. Of the 450,000 working class families, over 200,000 are on the pauper list.

E. The British Agricultural Proletariat

Nowhere does the antagonistic character of capitalistic production and accumulation assert itself more brutally than in the progress of English agriculture (including cattle-breeding) and the retrogression of the English agricultural labourer.

Before I turn to his present situation, a rapid retrospect.

Modern agriculture dates in England from the middle of the 18th century, although the revolution in landed property, from which the changed mode of production starts as a basis, has a much earlier date.

If we take the statements of Arthur Young, a careful observer, though a superficial thinker, as to the agricultural labourer of 1771, the latter plays a very pitiable part compared with his predecessor of the end of the 14th century,

“when the labourer ... could live in plenty, and accumulate

wealth,” [\[75\]](#)

not to speak of the 15th century, “the golden age of the English labourer in town and country.” We need not, however, go back so far. In a very instructive work of the year 1777 we read:

“The great farmer is nearly mounted to a level with him [the gentleman]; while the poor labourer is depressed almost to the earth. His unfortunate situation will fully appear, by taking a comparative view of it, only forty years ago, and at present.... Landlord and tenant ... have both gone hand in hand in keeping the labourer down.” [\[76\]](#)

It is then proved in detail that the real agricultural wages between 1737 and 1777 fell nearly $\frac{1}{4}$ or 25 per cent.

“Modern policy,” says Dr. Richard Price also, “is, indeed, more favourable to the higher classes of people; and the consequences may in time prove that the whole kingdom will consist of only gentry and beggars, or of grandees and slaves.” [\[77\]](#)

Nevertheless, the position of the English agricultural labourer from 1770 to 1780, with regard to his food and dwelling, as well as to his self-respect, amusements, &c., is an ideal never attained again since that time. His average wage expressed in pints of wheat was from 1770 to 1771, 90 pints, in Eden’s time (1797) only 65, in 1808 but 60. [\[78\]](#)

The state of the agricultural labourer at the end of the Anti-Jacobin War, during which landed proprietors, farmers, manufacturers, merchants, bankers, stockbrokers, army-

contractors, &c., enriched themselves so extraordinarily, has been already indicated above. The nominal wages rose in consequence partly of the bank-note depreciation, partly of a rise in the price of the primary means of subsistence independent of this depreciation. But the actual wage-variation can be evidenced in a very simple way, without entering into details that are here unnecessary. The Poor Law and its administration were in 1795 and 1814 the same. It will be remembered how this law was carried out in the country districts: in the form of alms the parish made up the nominal wage to the nominal sum required for the simple vegetation of the labourer. The ratio between the wages paid by the farmer, and the wage-deficit made good by the parish, shows us two things. First, the falling of wages below their minimum; second, the degree in which the agricultural labourer was a compound of wage labourer and pauper, or the degree in which he had been turned into a serf of his parish. Let us take one county that represents the average condition of things in all counties. In Northamptonshire, in 1795, the average weekly wage was 7s. 6d.; the total yearly expenditure of a family of 6 persons, £36 12s. 5d.; their total income, £29 18s.; deficit made good by the parish, £6 14s. 5d. In 1814, in the same county, the weekly wage was 12s. 2d.; the total yearly expenditure of a family of 5 persons, £54 18s. 4d.; their total income, £36, 2s.; deficit made good by the parish, £18 6s. 4d.

[\[79\]](#) In 1795 the deficit was less than 1/4 the wage, in 1814, more than half. It is self-evident that, under these circumstances, the meagre comforts that Eden still found in the cottage of the agricultural labourer, had vanished by 1814.

[80] Of all the animals kept by the farmer, the labourer, the *instrumentum vocale*, was, thenceforth, the most oppressed, the worst nourished, the most brutally treated.

The same state of things went on quietly until

“the Swing riots, in 1830, revealed to us (*i.e.*, the ruling classes) by the light of blazing corn-stacks, that misery and black mutinous discontent smouldered quite as fiercely under the surface of agricultural as of manufacturing England.” [81]

At this time, Sadler, in the House of Commons, christened the agricultural labourers “white slaves,” and a Bishop echoed the epithet in the Upper House. The most notable political economist of that period — E. G. Wakefield — says:

“The peasant of the South of England ... is not a freeman, nor is he a slave; he is a pauper.” [82]

The time just before the repeal of the Corn Laws threw new light on the condition of the agricultural labourers. On the one hand, it was to the interest of the middle-class agitators to prove how little the Corn Laws protected the actual producers of the corn. On the other hand, the industrial bourgeoisie foamed with sullen rage at the denunciations of the factory system by the landed aristocracy, at the pretended sympathy with the woes of the factory operatives, of those utterly corrupt, heartless, and genteel loafers, and at their “diplomatic zeal” for factory legislation. It is an old English proverb that “when thieves fall out, honest men come by their own,” and, in fact, the noisy, passionate quarrel between the two fractions of the ruling class about the question, which of the two

exploited the labourers the more shamefully, was on each hand the midwife of the truth. Earl Shaftesbury, then Lord Ashley, was commander-in-chief in the aristocratic, philanthropic, anti-factory campaign. He was, therefore, in 1845, a favourite subject in the revelations of the *Morning Chronicle* on the condition of the agricultural labourers. This journal, then the most important Liberal organ, sent special commissioners into the agricultural districts, who did not content themselves with mere general descriptions and statistics, but published the names both of the labouring families examined and of their landlords. The following list gives the wages paid in three villages in the neighbourhood of Blandford, Wimbourne, and Poole. The villages are the property of Mr. G. Banks and of the Earl of Shaftesbury. It will be noted that, just like Banks, this “low church pope,” this head of English pietists, pockets a great part of the miserable wages of the labourers under the pretext of house-rent: —

FIRST VILLAGE						
(a) Children.	2	3	2	2	6	3
(b) Number of Members in Family.	4	5	4	4	8	5
(c) Weekly Wage of the Men.	8s. 0d.	8s. 0d.	8s. 0d.	8s. 0d.	7s. 0d.	7s. 0d.
(d) Weekly Wage of the Children.	—	—	—	—	1/-, 1/6	1/-, 2/-

(e) Weekly Income of the whole Family.	8s. 0d.	8s. 0d.	8s. 0d.	8s. 0d.	10s. 6d.	7s. 0d.
(f) Weekly Rent.	2s. 0d.	1s. 6d.	1s. 0d.	1s. 0d.	2s. 0d.	1s. 4d.
(g) Total Weekly wage after deduction of Rent.	6s. 0d.	6s. 6d.	7s. 0d.	7s. 0d.	8s. 6d.	5s. 8d.
(h) Weekly income per head.	1s. 6d.	1s. 3½d.	1s. 9d.	1s. 9d.	1s. 0 ¾d.	1s. 1½d.

SECOND VILLAGE					
(a) Children.	6	6	8	4	3
(b) Number of Members in Family.	8	8	10	6	5
(c) Weekly Wage of the Men.	7s. 0d.	7s. 0d.	7s. 0d.	7s. 0d.	7s. 0d.
(d) Weekly Wage of the Children.	1/-, 1/6	1/-, 1/6	—	—	—
(e) Weekly Income of the whole Family.	10s. 0d.	7s. 0d.	7s. 0d.	7s. 0d.	7s. 0d.

(f) Weekly Rent.	1s. 6d.	1s. 3½d.	1s. 3½d.	1s. 6½d.	1s. 6½d.
(g) Total Weekly wage after deduction of Rent.	8s. 6d.	5s. 8½d.	5s. 8½d.	5s. 5½d.	5s. 5½d.
(h) Weekly income per head.	1s. 0 ¾d.	0s. 8½d.	0s. 7d.	0s. 11d.	1s. 1d.

THIRD VILLAGE			
(a) Children.	4	3	0
(b) Number of Members in Family.	6	5	2
(c) Weekly Wage of the Men.	7s. 0d.	7s. 0d.	5s. 0d.
(d) Weekly Wage of the Children.	-	1/- 2/-	1/- 2/6
(e) Weekly Income of the whole Family.	7s. 0d.	11s. 6d.	5s. 0d.
(f) Weekly Rent.	1s. 0d.	0s. 10d.	1s. 0d.
(g) Total Weekly wage after deduction of Rent.	6s. 0d.	10s. 8d.	4s. 0d.
(h) Weekly income per head. [83]	1s. 0d.	2s. 1 3/5d.	2s. 0d.

The repeal of the Corn Laws gave a marvellous impulse to English agriculture. ^[84] Drainage on the most extensive scale, new methods of stall-feeding, and of the artificial cultivation of green crops, introduction of mechanical manuring apparatus, new treatment of clay soils, increased use of mineral manures, employment of the steam-engine, and of all kinds of new machinery, more intensive cultivation generally, characterised this epoch. Mr. Pusey, Chairman of the Royal Agricultural Society, declares that the (relative) expenses of farming have been reduced nearly one half by the introduction of new machinery. On the other hand, the actual return of the soil rose rapidly. Greater outlay of capital per acre, and, as a consequence, more rapid concentration of farms, were essential conditions of the new method. ^[85] At the same time, the area under cultivation increased, from 1846 to 1856, by 464,119 acres, without reckoning the great area in the Eastern Counties which was transformed from rabbit warrens and poor pastures into magnificent corn-fields. It has already been seen that, at the same time, the total number of persons employed in agriculture fell. As far as the actual agricultural labourers of both sexes and of all ages are concerned, their number fell from 1,241,396, in 1851, to 1,163, 217 in 1861. ^[86] If the English Registrar-General, therefore, rightly remarks:

“The increase of farmers and farm-labourers, since 1801, bears no kind of proportion ... to the increase of agricultural produce,” ^[87]

this disproportion obtains much more for the last period, when a positive decrease of the agricultural population went hand in

hand with increase of the area under cultivation, with more intensive cultivation, unheard-of accumulation of the capital incorporated with the soil, and devoted to its working, an augmentation in the products of the soil without parallel in the history of English agriculture, plethoric rent-rolls of landlords, and growing wealth of the capitalist farmers. If we take this, together with the swift, unbroken extension of the markets, viz., the towns, and the reign of Free Trade, then the agricultural labourer was at last, *post tot discrimina rerum*, placed in circumstances that ought, *secundum artem*, to have made him drunk with happiness.

But Professor Rogers comes to the conclusion that the lot of the English agricultural labourer of today, not to speak of his predecessor in the last half of the 14th and in the 15th century, but only compared with his predecessor from 1770 to 1780, has changed for the worse to an extraordinary extent, that “the peasant has again become a serf,” and a serf worse fed and worse clothed. [\[88\]](#) Dr. Julian Hunter, in his epochmaking report on the dwellings of the agricultural labourers, says:

“The cost of the hind” (a name for the agricultural labourer, inherited from the time of serfdom) “is fixed at the lowest possible amount on which he can live ... the supplies of wages and shelter are not calculated on the profit to be derived from him. He is a zero in farming calculations ... [\[89\]](#) The means [of subsistence] being always supposed to be a fixed quantity. [\[90\]](#) As to any further reduction of his income, he may say, *nihil habeo nihil curo*. He has no fears for the future, because he has now only the spare supply necessary to keep him. He has

reached the zero from which are dated the calculations of the farmer. Come what will, he has no share either in prosperity or adversity.” [\[91\]](#)

In the year 1863, an official inquiry took place into the conditions of nourishment and labour of the criminals condemned to transportation and penal servitude. The results are recorded in two voluminous Blue books. Among other things it is said:

“From an elaborate comparison between the diet of convicts in the convict prisons in England, and that of paupers in workhouses and of free labourers in the same country ... it certainly appears that the former are much better fed than either of the two other classes,” [\[92\]](#) whilst “the amount of labour required from an ordinary convict under penal servitude is about one half of what would be done by an ordinary day-labourer.” [\[93\]](#)

A few characteristic depositions of witnesses: John Smith, governor of the Edinburgh prison, deposes:

No. 5056. “The diet of the English prisons [is] superior to that of ordinary labourers in England.” No 50. “It is the fact ... that the ordinary agricultural labourers in Scotland very seldom get any meat at all.” Answer No. 3047. “Is there anything that you are aware of to account for the necessity of feeding them very much better than ordinary labourers? — Certainly not.” No. 3048. “Do you think that further experiments ought to be made in order to ascertain whether a dietary might not be hit upon for prisoners employed on public works nearly

approaching to the dietary of free labourers? ...” [\[94\]](#) “He [the agricultural labourer] might say: ‘I work hard, and have not enough to eat, and when in prison I did not work harder where I had plenty to eat, and therefore it is better for me to be in prison again than here.’” [\[95\]](#)

From the tables appended to the first volume of the Report I have compiled the annexed comparative summary.

WEEKLY AMOUNT OF NUTRIENTS				
	Quantity Of Nitrogenous Ingredients	Quantity Of Non-Nitrogenous Ingredients	Quantity Of Mineral Matter	TOTAL
	Ounces	Ounces	Ounces	Ounces
Portland (convict)	28.95	150.06	4.68	183.69
Sailor in the Navy	29.63	152.91	4.52	187.06
Soldier	25.55	114.49	3.94	143.98
Working Coachmaker	24.53	162.06	4.23	190.82
Compositor	21.24	100.83	3.12	125.19

Agricultural labourer ^[96]	17.73	118.06	3.29	139.08
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The general result of the inquiry by the medical commission of 1863 on the food of the lowest fed classes, is already known to the reader. He will remember that the diet of a great part of the agricultural labourers' families is below the minimum necessary "to arrest starvation diseases." This is especially the case in all the purely rural districts of Cornwall, Devon, Somerset, Wilts, Stafford, Oxford, Berks, and Herts.

"The nourishment obtained by the labourer himself," says Dr. E. Smith, "is larger than the average quantity indicates, since he eats a larger share ... necessary to enable him to perform his labour ... of food than the other members of the family, including in the poorer districts nearly all the meat and bacon.... The quantity of food obtained by the wife and also by the children at the period of rapid growth, is in many cases, in almost every county, deficient, and particularly in nitrogen."

^[97]

The male and female servants living with the farmers themselves are sufficiently nourished. Their number fell from 288,277 in 1851, to 204,962 in 1861.

"The labour of women in the fields," says Dr. Smith, "whatever may be its disadvantages, ... is under present circumstances of great advantage to the family, since it adds that amount of income which ... provides shoes and clothing and pays the rent, and thus enables the family to be better fed."

^[98]

One of the most remarkable results of the inquiry was that the agricultural labourer of England, as compared with other parts of the United Kingdom, “is considerably the worst fed,” as the appended table shows:

Quantities of Carbon and Nitrogen weekly consumed by an average agricultural adult:

	Carbon, grains	Nitrogen, grains
England	46,673	1,594
Wales	48,354	2,031
Scotland	48,980	2,348
Ireland ^[99]	43,366	2,434

“To the insufficient quantity and miserable quality of the house accommodation generally had,” says Dr. Simon, in his official Health Report, “by our agricultural labourers, almost every page of Dr. Hunter’s report bears testimony. And gradually, for many years past, the state of the labourer in these respects has been deteriorating, house-room being now greatly more difficult for him to find, and, when found, greatly less suitable to his needs than, perhaps, for centuries had been the case. Especially within the last twenty or thirty years, the evil has been in very rapid increase, and the household circumstances of the labourer are now in the highest degree deplorable. Except in so far as they whom his labour enriches, see fit to treat him with a kind of pitiful indulgence, he is quite peculiarly helpless in the matter. Whether he shall find house-

room on the land which he contributes to till, whether the house-room which he gets shall be human or swinish, whether he shall have the little space of garden that so vastly lessens the pressure of his poverty — all this does not depend on his willingness and ability to pay reasonable rent for the decent accommodation he requires, but depends on the use which others may see fit to make of their ‘right to do as they will with their own.’ However large may be a farm, there is no law that a certain proportion of labourers’ dwellings (much less of decent dwellings) shall be upon it; nor does any law reserve for the labourer ever so little right in that soil to which his industry is as needful as sun and rain.... An extraneous element weighs the balance heavily against him ... the influence of the Poor Law in its provisions concerning settlement and chargeability. [\[100\]](#) Under this influence, each parish has a pecuniary interest in reducing to a minimum the number of its resident labourers: — for, unhappily, agricultural labour instead of implying a safe and permanent independence for the hardworking labourer and his family, implies for the most part only a longer or shorter circuit to eventual pauperism — a pauperism which, during the whole circuit, is so near, that any illness or temporary failure of occupation necessitates immediate recourse to parochial relief — and thus all residence of agricultural population in a parish is glaringly an addition to its poor-rates Large proprietors [\[101\]](#) ... have but to resolve that there shall be no labourers’ dwellings on their estates, and their estates will thenceforth be virtually free from half their responsibility for the poor. How far it has been intended, in the English constitution and law, that this kind of

unconditional property in land should be acquirable, and that a landlord 'doing as he wills with his own,' should be able to treat the cultivators of the soil as aliens, whom he may expel from his territory, is a question which I do not pretend to discuss.... For that (power) of eviction ... does not exist only in theory. On a very large scale it prevails in practice — prevails ... as a main governing condition in the household circumstances of agricultural labour.... As regards the extent of the evil, it may suffice to refer to the evidence which Dr. Hunter has compiled from the last census, that destruction of houses, notwithstanding increased local demands for them, had, during the last ten years, been in progress in 821 separate parishes or townships of England, so that irrespectively of persons who had been forced to become non-resident (that is in the parishes in which they work), these parishes and townships were receiving in 1861, as compared with 1851, a population $5\frac{1}{3}$ per cent. greater, into houseroom $4\frac{1}{2}$ per cent. less... When the process of depopulation has completed itself, the result, says Dr. Hunter, is a show-village where the cottages have been reduced to a few, and where none but persons who are needed as shepherds, gardeners, or game-keepers, are allowed to live; regular servants who receive the good treatment usual to their class. [\[102\]](#) But the land requires cultivation, and it will be found that the labourers employed upon it are not the tenants of the owner, but that they come from a neighbouring open village, perhaps three miles off, where a numerous small proprietary had received them when their cottages were destroyed in the close villages around. Where things are tending to the above result, often the

cottages which stand, testify, in their unrepaired and wretched condition, to the extinction to which they are doomed. They are seen standing in the various stages of natural decay. While the shelter holds together, the labourer is permitted to rent it, and glad enough he will often be to do so, even at the price of decent lodging. But no repair, no improvement shall it receive, except such as its penniless occupants can supply. And when at last it becomes quite uninhabitable — uninhabitable even to the humblest standard of serfdom — it will be but one more destroyed cottage, and future poor-rates will be somewhat lightened. While great owners are thus escaping from poor-rates through the depopulation of lands over which they have control, the nearest town or open village receive the evicted labourers: the nearest, I say, but this “nearest” may mean three or four miles distant from the farm where the labourer has his daily toil. To that daily toil there will then have to be added, as though it were nothing, the daily need of walking six or eight miles for power of earning his bread. And whatever farmwork is done by his wife and children, is done at the same disadvantage. Nor is this nearly all the toil which the distance occasions him. In the open village, cottage-speculators buy scraps of land, which they throng as densely as they can with the cheapest of all possible hovels. And into those wretched habitations (which, even if they adjoin the open country, have some of the worst features of the worst town residences) crowd the agricultural labourers of England. [\[103\]](#) Nor on the other hand must it be supposed that even when the labourer is housed upon the lands which he cultivates, his household circumstances are generally such as his life of

productive industry would seem to deserve. Even on princely estates ... his cottage ... may be of the meanest description. There are landlords who deem any sty good enough for their labourer and his family, and who yet do not disdain to drive with him the hardest possible bargain for rent. [\[104\]](#) It may be but a ruinous one-bedroomed hut, having no fire-grate, no privy, no opening window, no water supply but the ditch, no garden — but the labourer is helpless against the wrong.... And the Nuisances Removal Acts ... are ... a mere dead letter ... in great part dependent for their working on such cottage-owners as the one from whom his (the labourer's) hovel is rented.... From brighter, but exceptional scenes, it is requisite in the interests of justice, that attention should again be drawn to the overwhelming preponderance of facts which are a reproach to the civilisation of England. Lamentable indeed, must be the case, when, notwithstanding all that is evident with regard to the quality of the present accommodation, it is the common conclusion of competent observers that even the general badness of dwellings is an evil infinitely less urgent than their mere numerical insufficiency. For years the overcrowding of rural labourers' dwellings has been a matter of deep concern, not only to persons who care for sanitary good, but to persons who care for decent and moral life. For, again and again in phrases so uniform that they seem stereotyped, reporters on the spread of epidemic disease in rural districts, have insisted on the extreme importance of that overcrowding, as an influence which renders it a quite hopeless task, to attempt the limiting of any infection which is introduced. And again and again it has been pointed out that,

notwithstanding the many salubrious influences which there are in country life, the crowding which so favours the extension of contagious disease, also favours the origination of disease which is not contagious. And those who have denounced the over-crowded state of our rural population have not been silent as to a further mischief. Even where their primary concern has been only with the injury to health, often almost perforce they have referred to other relations on the subject. In showing how frequently it happens that adult persons of both sexes, married and unmarried, are huddled together in single small sleeping rooms, their reports have carried the conviction that, under the circumstances they describe, decency must always be outraged, and morality almost of necessity must suffer. [\[105\]](#) Thus, for instance, in the appendix of my last annual report, Dr. Ord, reporting on an outbreak of fever at Wing, in Buckinghamshire, mentions how a young man who had come thither from Wingrave with fever, “in the first days of his illness slept in a room with nine other persons. Within a fortnight several of these persons were attacked, and in the course of a few weeks five out of the nine had fever, and one died...” From Dr. Harvey, of St. George’s Hospital, who, on private professional business, visited Wing during the time of the epidemic, I received information exactly in the sense of the above report.... “A young woman having fever, lay at night in a room occupied by her father and mother, her bastard child, two young men (her brothers), and her two sisters, each with a bastard child — 10 persons in all. A few weeks ago 13 persons slept in it.” [\[106\]](#)

Dr. Hunter investigated 5,375 cottages of agricultural

labourers, not only in the purely agricultural districts, but in all counties of England. Of these, 2,195 had only one bedroom (often at the same time used as living-room), 2,930 only two, and 250, more than two. I will give a few specimens culled from a dozen counties.

(1.) Bedfordshire

Wrestlingworth. Bedrooms about 12 feet long and 10 broad, although many are smaller than this. The small, one-storied cots are often divided by partitions into two bedrooms, one bed frequently in a kitchen, 5 feet 6 inches in height. Rent, £3 a year. The tenants have to make their own privies, the landlord only supplies a hole. As soon as one has made a privy, it is made use of by the whole neighbourhood. One house, belonging to a family called Richardson, was of quite unapproachable beauty. "Its plaster walls bulged very like a lady's dress in a curtsey. One gable end was convex, the other concave, and on this last, unfortunately, stood the chimney, a curved tube of clay and wood like an elephant's trunk. A long stick served as prop to prevent the chimney from falling. The doorway and window were rhomboidal." Of 17 houses visited, only 4 had more than one bedroom, and those four overcrowded. The cots with one bedroom sheltered 3 adults and 3 children, a married couple with 6 children, &c.

Dunton. High rents, from £4 to £5; weekly wages of the man, 10s. They hope to pay the rent by the straw-plaiting of the family. The higher the rent, the greater the number that must work together to pay it. Six adults, living with 4 children in

one sleeping apartment, pay £3 10s. for it. The cheapest house in Dunton, 15 feet long externally, 10 broad, let for £3. Only one of the houses investigated had 2 bedrooms. A little outside the village, a house whose “tenants dunged against the house-side,” the lower 9 inches of the door eaten away through sheer rottenness; the doorway, a single opening closed at night by a few bricks, ingeniously pushed up after shutting and covered with some matting. Half a window, with glass and frame, had gone the way of all flesh. Here, without furniture, huddled together were 3 adults and 5 children. Dunton is not worse than the rest of Biggleswade Union.

(2.) Berkshire

Beenham. In June, 1864, a man, his wife and 4 children lived in a cot (one-storied cottage). A daughter came home from service with scarlet fever. She died. One child sickened and died. The mother and one child were down with typhus when Dr. Hunter was called in. The father and one child slept outside, but the difficulty of securing isolation was seen here, for in the crowded market of the miserable village lay the linen of the fever-stricken household, waiting for the wash. The rent of H.’s house, 1s. a-week; one bedroom for man, wife, and 6 children. One house let for 8d. a-week, 14 feet 6 inches long, 7 feet broad, kitchen, 6 feet high; the bedroom without window, fire-place, door, or opening, except into the lobby; no garden. A man lived here for a little while, with two grown-up daughters and one grown-up son; father and son slept on the bed, the girls in the passage. Each of the latter had

a child while the family was living here, but one went to the workhouse for her confinement and then came home.

(3.) Buckinghamshire

30 cottages — on 1,000 acres of land — contained here about 130-140 persons. The parish of *Bradenham* comprises 1,000 acres; it numbered, in 1851, 36 houses and a population of 84 males and 54 females. This inequality of the sexes was partly remedied in 1861, when they numbered 98 males and 87 females; increase in 10 years of 14 men and 33 women. Meanwhile, the number of houses was one less.

Winslow. Great part of this newly built in good style; demand for houses appears very marked, since very miserable cots let at 1s. to 1s. 3d. per week.

Water Eaton. Here the landlords, in view of the increasing population, have destroyed about 20 per cent. of the existing houses. A poor labourer, who had to go about 4 miles to his work, answered the question, whether he could not find a cot nearer: “No; they know better than to take a man in with my large family.”

Tinker’s End, near Winslow. A bedroom in which were 4 adults and 4 children; 11 feet long, 9 feet broad, 6 feet 5 inches high at its highest part; another 11 feet 3 inches by 9 feet, 5 feet 10 inches high, sheltered 6 persons. Each of these families had less space than is considered necessary for a convict. No house had more than one bedroom, not one of them a back-door; water very scarce; weekly rent from 1s. 4d. to 2s. In 16

of the houses visited, only 1 man that earned 10s. a-week. The quantity of air for each person under the circumstances just described corresponds to that which he would have if he were shut up in a box of 4 feet measuring each way, the whole night. But then, the ancient dens afforded a certain amount of unintentional ventilation.

(4.) Cambridgeshire

Gamblingay belongs to several landlords. It contains the wretchedest cots to be found anywhere. Much straw-plaiting. "A deadly lassitude, a hopeless surrendering up to filth," reigns in *Gamblingay*. The neglect in its centre, becomes mortification at its extremities, north and south, where the houses are rotting to pieces. The absentee landlords bleed this poor rookery too freely. The rents are very high; 8 or 9 persons packed in one sleeping apartment, in 2 cases 6 adults, each with 1 or 2 children in one small bedroom.

(5.) Essex

In this county, diminutions in the number of persons and of cottages go, in many parishes, hand in hand. In not less than 22 parishes, however, the destruction of houses has not prevented increase of population, or has not brought about that expulsion which, under the name "migration to towns," generally occurs. In *Fingringhoe*, a parish of 3,443 acres, were in 1851, 145 houses; in 1861, only 110. But the people did not wish to go away, and managed even to increase under these circumstances. In 1851, 252 persons inhabited 61 houses, but

in 1861, 262 persons were squeezed into 49 houses. In Basilden, in 1851, 157 persons lived on 1,827 acres, in 35 houses; at the end of ten years, 180 persons in 27 houses. In the parishes of Fingringhoe, South Fambridge, Widford, Basilden, and Ramsden Crag, in 1851, 1,392 persons were living on 8,449 acres in 316 houses; in 1861, on the same area, 1,473 persons in 249 houses.

(6.) Herefordshire

This little county has suffered more from the “eviction-spirit” than any other in England. At Nadby, overcrowded cottages generally, with only 2 bedrooms, belonging for the most part to the farmers. They easily let them for £3 or £4 a-year, and paid a weekly wage of 9s.

(7.) Huntingdon

Hartford had, in 1851, 87 houses; shortly after this, 19 cottages were destroyed in this small parish of 1,720 acres; population in 1831, 452; in 1852, 382; and in 1861, 341. 14 cottages, each with 1 bedroom, were visited. In one, a married couple, 3 grown-up sons, 1 grown-up daughter, 4 children — in all 10 in another, 3 adults, 6 children. One of these rooms, in which 8 people slept, was 12 feet 10 inches long, 12 feet 2 inches broad, 6 feet 9 inches high: the average, without making any deduction for projections into the apartment, gave about 130 cubic feet per head. In the 14 sleeping rooms, 34 adults and 33 children. These cottages are seldom provided with gardens, but many of the inmates are able to farm small

allotments at 10s. or 12s. per rood. These allotments are at a distance from the houses, which are without privies. The family “must either go to the allotment to deposit their ordures,” or, as happens in this place, saving your presence, “use a closet with a trough set like a drawer in a chest of drawers, and drawn out weekly and conveyed to the allotment to be emptied where its contents were wanted.” In Japan, the circle of life-conditions moves more decently than this.

(8.) Lincolnshire

Langtoft. A man lives here, in Wright’s house, with his wife, her mother, and 5 children; the house has a front kitchen, scullery, bedroom over the front kitchen; front kitchen and bedroom, 12 feet 2 inches by 9 feet 5 inches; the whole ground floor, 21 feet 2 inches by 9 feet 5 inches. The bedroom is a garret: the walls run together into the roof like a sugar-loaf, a dormer-window opening in front. “Why did he live here? On account of the garden? No; it is very small. Rent? High, 1s. 3d. per week. Near his work? No; 6 miles away, so that he walks daily, to and fro, 12 miles. He lived there, because it was a tenantable cot,” and because he wanted to have a cot for himself alone, anywhere, at any price, and in any conditions. The following are the statistics of 12 houses in Langtoft, with 12 bedrooms, 38 adults, and 36 children.

TWELVE HOUSES IN LANGTOFT									
House	No.	No.	No.	No.	No.	No.	No.	No.	No
	1.	2.	3.	4.	5.	6.	7.	8.	9.

Bedrooms.	1	1	1	1	1	1	1	1	1
Adults.	3	4	4	5	2	5	3	3	2
Children.	5	3	4	4	2	3	3	2	0
Number of Persons.	8	7	8	9	4	8	6	5	2

(9.) Kent

Kennington, very seriously over-populated in 1859, when diphtheria appeared, and the parish doctor instituted a medical inquiry into the condition of the poorer classes. He found that in this locality, where much labour is employed, various cots had been destroyed and no new ones built. In one district stood four houses, named birdcages; each had 4 rooms of the following dimensions in feet and inches:

Kitchen:	9 ft. 5 by 8 ft. 11 by 6 ft. 6
Scullery:	8 ft. 6 by 4 ft. 6 by 6 ft. 6
Bedroom:	8 ft. 5 by 5 ft. 10 by 6 ft. 3
Bedroom:	8 ft. 3 by 8 ft. 4 by 6 ft. 3

(10.) Northamptonshire

Brinworth, Pickford and Floore: in these villages in the winter 20-30 men were lounging about the streets from want of work. The farmers do not always till sufficiently the corn and turnip

lands, and the landlord has found it best to throw all his farms together into 2 or 3. Hence want of employment. Whilst on one side of the wall, the land calls for labour, on the other side the defrauded labourers are casting at it longing glances. Feverishly overworked in summer, and half-starved in winter, it is no wonder if they say in their peculiar dialect, “the parson and gentlefolk seem frit to death at them.”

At Floore, instances, in one bedroom of the smallest size, of couples with 4, 5, 6 children; 3 adults with 5 children; a couple with grandfather and 6 children down with scarlet fever, &c.; in two houses with two bedrooms, two families of 8 and 9 adults respectively.

(11.) Wiltshire

Stratton. 31 houses visited, 8 with only one bedroom. Pentill, in the same parish: a cot let at Is. 3d. weekly with 4 adults and 4 children, had nothing good about it, except the walls, from the floor of rough-hewn pieces of stones to the roof of worn-out thatch.

(12.) Worcestershire

House-destruction here not quite so excessive; yet from 1851 to 1861, the number of inhabitants to each house on the average, has risen from 4.2 to 4.6.

Badsey. Many cots and little gardens here. Some of the farmers declare that the cots are “a great nuisance here, because they bring the poor.” On the statement of one

gentleman:

“The poor are none the better for them; if you build 500 they will let fast enough, in fact, the more you build, the more they want”

(according to him the houses give birth to the inhabitants, who then by a law of Nature press on “the means of housing”). Dr. Hunter remarks:

“Now these poor must come from somewhere, and as there is no particular attraction, such as doles, at Badsey, it must be repulsion from some other unfit place, which will send them here. If each could find an allotment near his work, he would not prefer Badsey, where he pays for his scrap of ground twice as much as the farmer pays for his.”

The continual emigration to the towns, the continual formation of surplus population in the country through the concentration of farms, conversion of arable land into pasture, machinery, &c., and the continual eviction of the agricultural population by the destruction of their cottages, go hand in hand. The more empty the district is of men, the greater is its “relative surplus population,” the greater is their pressure on the means of employment, the greater is the absolute excess of the agricultural population over the means for housing it, the greater, therefore, in the villages is the local surplus population and the most pestilential packing together of human beings. The packing together of knots of men in scattered little villages and small country towns corresponds to the forcible draining of men from the surface of the land. The continuous superseding of the agricultural labourers, in spite of their

diminishing number and the increasing mass of their products, gives birth to their pauperism. Their pauperism is ultimately a motive to their eviction and the chief source of their miserable housing which breaks down their last power of resistance, and makes them more slaves of the landed proprietors and the farmers. [\[107\]](#) Thus the minimum of wages becomes a law of Nature to them. On the other hand, the land, in spite of its constant “relative surplus population,” is at the same time underpopulated. This is seen, not only locally at the points where the efflux of men to towns, mines, railroad-making, &c., is most marked. It is to be seen everywhere, in harvest-time as well as in spring and summer, at those frequently recurring times when English agriculture, so careful and intensive, wants extra hands. There are always too many agricultural labourers for the ordinary, and always too few for the exceptional or temporary needs of the cultivation of the soil. [\[108\]](#) Hence we find in the official documents contradictory complaints from the same places of deficiency and excess of labour simultaneously. The temporary or local want of labour brings about no rise in wages, but a forcing of the women and children into the fields, and exploitation at an age constantly lowered. As soon as the exploitation of the women and children takes place on a larger scale, it becomes in turn a new means of making a surplus population of the male agricultural labourer and of keeping down his wage. In the east of England thrives a beautiful fruit of this vicious circle — the so-called gang-system, to which I must briefly return here. [\[109\]](#)

The gang-system obtains almost exclusively in the counties of Lincoln, Huntingdon, Cambridge, Norfolk, Suffolk, and Nottingham, here and there in the neighbouring counties of Northampton, Bedford, and Rutland. Lincolnshire will serve us as an example. A large part of this county is new land, marsh formerly, or even, as in others of the eastern counties just named, won lately from the sea. The steam-engine has worked wonders in the way of drainage. What were once fens and sandbanks, bear now a luxuriant sea of corn and the highest of rents. The same thing holds of the alluvial lands won by human endeavour, as in the island of Axholme and other parishes on the banks of the Trent. In proportion as the new farms arose, not only were no new cottages built: old ones were demolished, and the supply of labour had to come from open villages, miles away, by long roads that wound along the sides of the hills. There alone had the population formerly found shelter from the incessant floods of the winter-time. The labourers that dwell on the farms of 400-1,000 acres (they are called “confined labourers”) are solely employed on such kinds of agricultural work as is permanent, difficult, and carried on by aid of horses. For every 100 acres there is, on an average, scarcely one cottage. A fen farmer, e.g., gave evidence before the Commission of Inquiry:

“I farm 320 acres, all arable land. I have not one cottage on my farm. I have only one labourer on my farm now. I have four horsemen lodging about. We get light work done by gangs.”

[\[110\]](#)

The soil requires much light field labour, such as weeding,

hoeing, certain processes of manuring, removing of stones, &c. This is done by the gangs, or organised bands that dwell in the open villages.

The gang consists of 10 to 40 or 50 persons, women, young persons of both sexes (13-18 years of age, although the boys are for the most part eliminated at the age of 13), and children of both sexes (6-13 years of age). At the head is the gang-master, always an ordinary agricultural labourer, generally what is called a bad lot, a scapegrace, unsteady, drunken, but with a dash of enterprise and *savoir-faire*. He is the recruiting-sergeant for the gang, which works under him, not under the farmer. He generally arranges with the latter for piece-work, and his income, which on the average is not very much above that of an ordinary agricultural labourer, [\[111\]](#) depends almost entirely upon the dexterity with which he manages to extract within the shortest time the greatest possible amount of labour from his gang. The farmers have discovered that women work steadily only under the direction of men, but that women and children, once set going, impetuously spend their life-force — as Fourier knew — while the adult male labourer is shrewd enough to economise his as much as he can. The gang-master goes from one farm to another, and thus employs his gang from 6 to 8 months in the year. Employment by him is, therefore, much more lucrative and more certain for the labouring families, than employment by the individual farmer, who only employs children occasionally. This circumstance so completely rivets his influence in the open villages that children are generally only to be hired through his instrumentality. The lending out of these individually,

independently of the gang, is his second trade.

The “drawbacks” of the system are the overwork of the children and young persons, the enormous marches that they make daily to and from the farms, 5, 6, and sometimes 7 miles distant, finally, the demoralisation of the gang. Although the gang-master, who, in some districts is called “the driver,” is armed with a long stick, he uses it but seldom, and complaints of brutal treatment are exceptional. He is a democratic emperor, or a kind of Pied Piper of Hamelin. He must therefore be popular with his subjects, and he binds them to himself by the charms of the gipsy life under his direction. Coarse freedom, a noisy jollity, and obscenest impudence give attractions to the gang. Generally the gangmaster pays up in a public house; then he returns home at the head of the procession reeling drunk, propped up right and left by a stalwart virago, while children and young persons bring up the rear, boisterous, and singing chaffing and bawdy songs. On the return journey what Fourier calls “phanerogamie,” is the order of the day. The getting with child of girls of 13 and 14 by their male companions of the same age, is common. The open villages which supply the contingent of the gang, become Sodoms and Gomorrahs, [\[112\]](#) and have twice as high a rate of illegitimate births as the rest of the kingdom. The moral character of girls bred in these schools, when married women, was shown above. Their children, when opium does not give them the finishing stroke, are born recruits of the gang.

The gang in its classical form just described, is called the public, common, or tramping gang. For there are also private

gangs. These are made up in the same way as the common gang, but count fewer members, and work, not under a gang-master, but under some old farm servant, whom the farmer does not know how to employ in any better way. The gipsy fun has vanished here, but according to all witnesses, the payment and treatment of the children is worse.

The gang-system, which during the last years has steadily increased, [\[113\]](#) clearly does not exist for the sake of the gang-master. It exists for the enrichment of the large farmers, [\[114\]](#) and indirectly of the landlords. [\[115\]](#) For the farmer there is no more ingenious method of keeping his labourers well below the normal level, and yet of always having an extra hand ready for extra work, of extracting the greatest possible amount of labour with the least possible amount of money [\[116\]](#) and of making adult male labour “redundant.” From the exposition already made, it will be understood why, on the one hand, a greater or less lack of employment for the agricultural labourer is admitted, while on the other, the gang-system is at the same time declared “necessary” on account of the want of adult male labour and its migration to the towns. [\[117\]](#) The cleanly weeded land, and the uncleanly human weeds, of Lincolnshire, are pole and counterpole of capitalistic production. [\[118\]](#)

F. Ireland

In concluding this section, we must travel for a moment to Ireland. First, the main facts of the case.

The population of Ireland had, in 1841, reached 8,222,664; in

1851, it had dwindled to 6,623,985; in 1861, to 5,850,309; in 1866, to 5½ millions, nearly to its level in 1801. The diminution began with the famine year, 1846, so that Ireland, in less than twenty years, lost more than 5/16 ths of its people.

[\[119\]](#) Its total emigration from May, 1851, to July, 1865, numbered 1,591,487: the emigration during the years 1861-1865 was more than half-a-million. The number of inhabited houses fell, from 1851-1861, by 52,990. From 1851-1861, the number of holdings of 15 to 30 acres increased 61,000, that of holdings over 30 acres, 109,000, whilst the total number of all farms fell 120,000, a fall, therefore, solely due to the suppression of farms under 15 acres — *i.e.*, to their centralisation.

LIVE-STOCK					
Year	Horses		Cattle		
	Total Number	Decrease	Total Number	Decrease	Increase
1860	619,811	—	3,606,374	—	—
1861	614,232	5,579	3,471,688	134,686	—
1862	602,894	11,338	3,254,890	216,798	—
1863	579,978	22,916	3,144,231	110,659	—
1864	562,158	17,820	3,262,294	—	118,063
1865	547,867	14,291	3,493,414	—	231,120

The decrease of the population was naturally accompanied by a decrease in the mass of products. For our purpose, it suffices to consider the 5 years from 1861-1865 during which over half-a-million emigrated, and the absolute number of people sank by more than 1/3 of a million. From the above table it results: —

Horses	Cattle	Sheep	Pigs
Absolute Decrease	Absolute Decrease	Absolute Increase	Absolute Increase
71,944	112,960	146,662	28,8211 ^[120]

Let us now turn to agriculture, which yields the means of subsistence for cattle and for men. In the following table is calculated the decrease or increase for each separate year, as compared with its immediate predecessor. The Cereal Crops include wheat, oats, barley, rye, beans, and peas; the Green Crops, potatoes, turnips, marigolds, beet-root, cabbages, carrots, parsnips, vetches, &c.

<i>Table B</i>					
INCREASE OR DECREASE IN THE AREA UNDER C					
Year	Cereal Crops	Green Crops		Grass and Clover	
	Decrease (Acres)	Decrease (Acres)	Increase (Acres)	Decrease (Acres)	Increase (Acres)

1861	15,701	36,974	—	47,969	—
1862	72,734	74,785	—	—	6,623
1863	144,719	19,358	—	—	7,724
1864	122,437	2,317	—	—	47,486
1865	72,450	—	25,241	—	68,970
1861-65	428,041	108,193	—	—	82,834

In the year 1865, 127,470 additional acres came under the heading “grass land,” chiefly because the area under the heading of “bog and waste unoccupied,” decreased by 101,543 acres. If we compare 1865 with 1864, there is a decrease in cereals of 246,667 qrs., of which 48,999 were wheat, 160,605 oats, 29,892 barley, &c.: the decrease in potatoes was 446,398 tons, although the area of their cultivation increased in 1865.

From the movement of population and the agricultural produce of Ireland, we pass to the movement in the purse of its landlords, larger farmers, and industrial capitalists. It is reflected in the rise and fall of the Income-tax. It may be remembered that Schedule D. (profits with the exception of those of farmers), includes also the so-called, “professional” profits — *i.e.*, the incomes of lawyers, doctors, &c.; and the Schedules C. and E., in which no special details are given, include the incomes of employees, officers, State sinecurists, State fundholders, &c.

<i>Table</i>
INCREASE OR DECREASE IN THE AREA UNDER C

PRODUCT PER ACRE, AND TOTAL PRODUCT OF 1864					
Product	Acres of Cultivated Land				Product per Acre
	1864	1865	Increase or Decrease, 1865		1864
Wheat	276,483	266,989	—	9,494	cwt., 13.3
Oats	1,814,886	1,745,228	—	69,658	cwt., 12.1
Barley	172,700	177,102	4,402	—	cwt., 15.9
Bere	8,894	10,091	1,197	—	cwt., 16.4
Rye					cwt., 8.5
Potatoes	1,039,724	1,066,260	26,536	—	tons, 4.1
Turnips	337,355	334,212	—	3,143	tons, 10.3
Mangold-wurzel	14,073	14,389	316	—	tons, 10.5
Cabbages	31,821	33,622	1,801	—	tons,

					9.3
Flax	301,693	251,433	—	50,260	st. (14 lb.) 34.2
Hay	1,609,569	1,678,493	68,9241	—	tons, 1.6

<i>Table D</i>				
THE INCOME-TAX ON THE SUBJOINED INCOMES (Tenth Report of the Commissioners of Inland Revenue, London)				
	1860	1861	1862	1863
<i>Schedule</i> A. Rent of Land	13,893,829	13,003,554	13,398,938	13,494,0
<i>Schedule</i> B. Farmers’ Profits.	2,765,387	2,773,644	2,937,899	2,938,9
<i>Schedule</i> D. Industrial, &c., Profits	4,891,652	4,836,203	4,858,800	4,846,4

Total Schedules A to E	22,962,885	22,998,394	23,597,574	23,658,000
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Under Schedule D., the average annual increase of income from 1853-1864 was only 0.93; whilst, in the same period, in Great Britain, it was 4.58. The following table shows the distribution of the profits (with the exception of those of farmers) for the years 1864 and 1865: —

<i>Table E</i> [122]		
SCHEDULE D.		
INCOME FROM PROFITS (OVER £60) IN IRELAND		
	1864 £	1865 £
Total yearly income of	4,368,610 divided among 17,467 persons.	4,669,979 divided among 18,081 persons.
Yearly income over £60 and under £100	238,726 divided among 5,015 persons.	222,575 divided among 4,703 persons.
Of the yearly total income	1,979,066 divided among 11,321 persons.	2,028,571 divided among 12,184 persons.
Remainder of the total yearly	2,150,818 divided among 1,131 persons.	2,418,833 divided among 1,194 persons.

income		
Of these		
	1,073,906 divided among 1,010 persons.	1,097,927 divided among 1,044 persons.
	1,076,912 divided among 121 persons.	1,320,906 divided among 150 persons.
	430,535 divided among 95 persons.	584,458 divided among 2 persons.
	646,377 divided among 26	736,448 divided among 28
	262,819 divided among 3	274,528 divided among 3

England, a country with fully developed capitalist production, and pre-eminently industrial, would have bled to death with such a drain of population as Ireland has suffered. But Ireland is at present only an agricultural district of England, marked off by a wide channel from the country to which it yields corn, wool, cattle, industrial and military recruits.

The depopulation of Ireland has thrown much of the land out of cultivation, has greatly diminished the produce of the soil, [\[123\]](#) and, in spite of the greater area devoted to cattle breeding, has brought about, in some of its branches, an absolute diminution, in others, an advance scarcely worthy of mention, and constantly interrupted by retrogressions.

Nevertheless, with the fall in numbers of the population, rents and farmers' profits rose, although the latter not as steadily as the former. The reason of this is easily comprehensible. On the one hand, with the throwing of small holdings into large ones, and the change of arable into pasture land, a larger part of the whole produce was transformed into surplus-produce. The surplus-produce increased, although the total produce, of which it formed a fraction, decreased. On the other hand, the money value of this surplus-produce increased yet more rapidly than its mass, in consequence of the rise in the English market price of meat, wool, &c., during the last 20, and especially during the last 10, years.

The scattered means of production that serve the producers themselves as means of employment and of subsistence, without expanding their own value by the incorporation of the labour of others, are no more capital than a product consumed by its own producer is a commodity. If, with the mass of the population, that of the means of production employed in agriculture also diminished, the mass of the capital employed in agriculture increased, because a part of the means of production that were formerly scattered, was concentrated and turned into capital.

The total capital of Ireland outside agriculture, employed in industry and trade, accumulated during the last two decades slowly, and with great and constantly recurring fluctuations; so much the more rapidly did the concentration of its individual constituents develop. And, however small its absolute increase, in proportion to the dwindling population it had increased largely.

Here, then, under our own eyes and on a large scale, a process is revealed, than which nothing more excellent could be wished for by orthodox economy for the support of its dogma: that misery springs from absolute surplus population, and that equilibrium is re-established by depopulation. This is a far more important experiment than was the plague in the middle of the 14th century so belauded of Malthusians. Note further: If only the naïveté of the schoolmaster could apply, to the conditions of production and population of the nineteenth century, the standard of the 14th, this naïveté, into the bargain, overlooked the fact that whilst, after the plague and the decimation that accompanied it, followed on this side of the Channel, in England, enfranchisement and enrichment of the agricultural population, on that side, in France, followed greater servitude and more misery. [\[124\]](#)

The Irish famine of 1846 killed more than 1,000,000 people, but it killed poor devils only. To the wealth of the country it did not the slightest damage. The exodus of the next 20 years, an exodus still constantly increasing, did not, as, *e.g.*, the Thirty Years' War, decimate, along with the human beings, their means of production. Irish genius discovered an altogether new way of spiriting a poor people thousands of miles away from the scene of its misery. The exiles transplanted to the United States, send home sums of money every year as travelling expenses for those left behind. Every troop that emigrates one year, draws another after it the next. Thus, instead of costing Ireland anything, emigration forms one of the most lucrative branches of its export trade. Finally, it is a systematic process, which does not simply make a

passing gap in the population, but sucks out of it every year more people than are replaced by the births, so that the absolute level of the population falls year by year. [\[125\]](#)

What were the consequences for the Irish labourers left behind and freed from the surplus population? That the relative surplus population is today as great as before 1846; that wages are just as low, that the oppression of the labourers has increased, that misery is forcing the country towards a new crisis. The facts are simple. The revolution in agriculture has kept pace with emigration. The production of relative surplus population has more than kept pace with the absolute depopulation. A glance at table C. shows that the change of arable to pasture land must work yet more acutely in Ireland than in England. In England the cultivation of green crops increases with the breeding of cattle; in Ireland, it decreases. Whilst a large number of acres, that were formerly tilled, lie idle or are turned permanently into grass-land, a great part of the waste land and peat bogs that were unused formerly, become of service for the extension of cattle-breeding. The smaller and medium farmers — I reckon among these all who do not cultivate more than 100 acres — still make up about 8/10ths of the whole number. [\[126\]](#) They are one after the other, and with a degree of force unknown before, crushed by the competition of an agriculture managed by capital, and therefore they continually furnish new recruits to the class of wage labourers. The one great industry of Ireland, linen-manufacture, requires relatively few adult men and only employs altogether, in spite of its expansion since the price of cotton rose in 1861-1866, a comparatively insignificant part of

the population. Like all other great modern industries, it constantly produces, by incessant fluctuations, a relative surplus population within its own sphere, even with an absolute increase in the mass of human beings absorbed by it. The misery of the agricultural population forms the pedestal for gigantic shirt-factories, whose armies of labourers are, for the most part, scattered over the country. Here, we encounter again the system described above of domestic industry, which in underpayment and overwork, possesses its own systematic means for creating supernumerary labourers. Finally, although the depopulation has not such destructive consequences as would result in a country with fully developed capitalistic production, it does not go on without constant reaction upon the home-market. The gap which emigration causes here, limits not only the local demand for labour, but also the incomes of small shopkeepers, artisans, tradespeople generally. Hence the diminution in incomes between £60 and £100 in Table E.

A clear statement of the condition of the agricultural labourers in Ireland is to be found in the Reports of the Irish Poor Law Inspectors (1870). [\[127\]](#) Officials of a government which is maintained only by bayonets and by a state of siege, now open, now disguised, they have to observe all the precautions of language that their colleagues in England disdain. In spite of this, however, they do not let their government cradle itself in illusions. According to them the rate of wages in the country, still very low, has within the last 20 years risen 50-60 per cent., and stands now, on the average, at 6s. to 9s. per week. But behind this apparent rise, is hidden an actual fall in

wages, for it does not correspond at all to the rise in price of the necessary means of subsistence that has taken place in the meantime. For proof, the following extract from the official accounts of an Irish workhouse.

AVERAGE WEEKLY COST PER HEAD			
Year ended	Provisions and Necessaries.	Clothing.	TOTAL.
29th Sept., 1849.	1s. 3 1/4d.	3d.	1s. 6 1/4d.
29th Sept., 1869.	2s. 7 1/4d.	6d.	3s. 1 1/4d.

The price of the necessary means of subsistence is therefore fully twice, and that of clothing exactly twice, as much as they were 20 years before.

Even apart from this disproportion, the mere comparison of the rate of wages expressed in gold would give a result far from accurate. Before the famine, the great mass of agricultural wages were paid in kind, only the smallest part in money; today, payment in money is the rule. From this it follows that, whatever the amount of the real wage, its money rate must rise.

“Previous to the famine, the labourer enjoyed his cabin ... with a rood, or half-acre or acre of land, and facilities for ... a crop of potatoes. He was able to rear his pig and keep fowl.... But they now have to buy bread, and they have no refuse upon which they can feed a pig or fowl, and they have consequently no benefit from the sale of a pig, fowl, or eggs.” [\[128\]](#)

In fact, formerly, the agricultural labourers were but the

smallest of the small farmers, and formed for the most part a kind of rear-guard of the medium and large farms on which they found employment. Only since the catastrophe of 1846 have they begun to form a fraction of the class of purely wage labourers, a special class, connected with its wage-masters only by monetary relations.

We know what were the conditions of their dwellings in 1846. Since then they have grown yet worse. A part of the agricultural labourers, which, however, grows less day by day, dwells still on the holdings of the farmers in over-crowded huts, whose hideousness far surpasses the worst that the English agricultural labourers offered us in this way. And this holds generally with the exception of certain tracts of Ulster; in the south, in the counties of Cork, Limerick, Kilkenny, &c.; in the east, in Wicklow, Wexford, &c.; in the centre of Ireland, in King's and Queen's County, Dublin, &c.; in the west, in Sligo, Roscommon, Mayo, Galway, &c.

“The agricultural labourers' huts,” an inspector cries out, “are a disgrace to the Christianity and to the civilisation of this country.” [\[129\]](#)

In order to increase the attractions of these holes for the labourers, the pieces of land belonging thereto from time immemorial, are systematically confiscated.

“The mere sense that they exist subject to this species of ban, on the part of the landlords and their agents, has ... given birth in the minds of the labourers to corresponding sentiments of antagonism and dissatisfaction towards those by whom they are thus led to regard themselves as being treated as ... a

proscribed race.” [\[130\]](#)

The first act of the agricultural revolution was to sweep away the huts situated on the field of labour. This was done on the largest scale, and as if in obedience to a command from on high. Thus many labourers were compelled to seek shelter in villages and towns. There they were thrown like refuse into garrets, holes, cellars and corners, in the worst back slums. Thousands of Irish families, who according to the testimony of the English, eaten up as these are with national prejudice, are notable for their rare attachment to the domestic hearth, for their gaiety and the purity of their home-life, found themselves suddenly transplanted into hotbeds of vice. The men are now obliged to seek work of the neighbouring farmers and are only hired by the day, and therefore under the most precarious form of wage. Hence

“they sometimes have long distances to go to and from work, often get wet, and suffer much hardship, not unfrequently ending in sickness, disease and want.” [\[131\]](#)

“ The towns have had to receive from year to year what was deemed to be the surplus-labour of the rural division,” [\[132\]](#) and then people still wonder “there is still a surplus of labour in the towns and villages, and either a scarcity or a threatened scarcity in some of the country divisions.” [\[133\]](#) The truth is that this want only becomes perceptible “in harvest-time, or during spring, or at such times as agricultural operations are carried on with activity; at other periods of the year many hands are idle,” [\[134\]](#) that “from the digging out of the main

crop of potatoes in October until the early spring following ... there is no employment for them;” [\[135\]](#) and further, that during the active times they “are subject to broken days and to all kinds of interruptions.” [\[136\]](#)

These results of the agricultural revolution — *i.e.*, the change of arable into pasture land, the use of machinery, the most rigorous economy of labour, &c., are still further aggravated by the model landlords, who, instead of spending their rents in other countries, condescend to live in Ireland on their demesnes. In order that the law of supply and demand may not be broken, these gentlemen draw their

“labour-supply ... chiefly from their small tenants, who are obliged to attend when required to do the landlord’s work, at rates of wages, in many instances, considerably under the current rates paid to ordinary labourers, and without regard to the inconvenience or loss to the tenant of being obliged to neglect his own business at critical periods of sowing or reaping.” [\[137\]](#)

The uncertainty and irregularity of employment, the constant return and long duration of gluts of labour, all these symptoms of a relative surplus population, figure therefore in the reports of the Poor Law administration, as so many hardships of the agricultural proletariat. It will be remembered that we met, in the English agricultural proletariat, with a similar spectacle. But the difference is that in England, an industrial country, the industrial reserve recruits itself from the country districts, whilst in Ireland, an agricultural country, the agricultural reserve recruits itself from the towns, the cities of refuge of the

expelled agricultural labourers. In the former, the supernumeraries of agriculture are transformed into factory operatives; in the latter, those forced into the towns, whilst at the same time they press on the wages in towns, remain agricultural labourers, and are constantly sent back to the country districts in search of work.

The official inspectors sum up the material condition of the agricultural labourer as follows:

“Though living with the strictest frugality, his own wages are barely sufficient to provide food for an ordinary family and pay his rent” and he depends upon other sources for the means of clothing himself, his wife, and children.... The atmosphere of these cabins, combined with the other privations they are subjected to, has made this class particularly susceptible to low fever and pulmonary consumption.” [\[138\]](#)

After this, it is no wonder that, according to the unanimous testimony of the inspectors, a sombre discontent runs through the ranks of this class, that they long for the return of the past, loathe the present, despair of the future, give themselves up “to the evil influence of agitators,” and have only one fixed idea, to emigrate to America. This is the land of Cockaigne, into which the great Malthusian panacea, depopulation, has transformed green Erin.

What a happy life the Irish factory operative leads one example will show:

“On my recent visit to the North of Ireland,” says the English Factory Inspector, Robert Baker, “I met with the following

evidence of effort in an Irish skilled workman to afford education to his children; and I give his evidence verbatim, as I took it from his mouth. That he was a skilled factory hand, may be understood when I say that he was employed on goods for the Manchester market. ‘Johnson. — I am a beetler and work from 6 in the morning till 11 at night, from Monday to Friday. Saturday we leave off at 6 p. m., and get three hours of it (for meals and rest). I have five children in all. For this work I get 10s. 6d. a week; my wife works here also, and gets 5s. a week. The oldest girl who is 12, minds the house. She is also cook, and all the servant we have. She gets the young ones ready for school. A girl going past the house wakes me at half past five in the morning. My wife gets up and goes along with me. We get nothing (to eat) before we come to work. The child of 12 takes care of the little children all the day, and we get nothing till breakfast at eight. At eight we go home. We get tea once a week; at other times we get stirabout, sometimes of oatmeal, sometimes of Indian meal, as we are able to get it. In the winter we get a little sugar and water to our Indian meal. In the summer we get a few potatoes, planting a small patch ourselves; and when they are done we get back to stirabout. Sometimes we get a little milk as it may be. So we go on from day to day, Sunday and week day, always the same the year round. I am always very much tired when I have done at night. We may see a bit of flesh meat sometimes, but very seldom. Three of our children attend school, for whom we pay 1d. a week a head. Our rent is 9d. a week. Peat for firing costs 1s. 6d. a fortnight at the very lowest.’” [\[139\]](#)

Such are Irish wages, such is Irish life!

In fact the misery of Ireland is again the topic of the day in England. At the end of 1866 and the beginning of 1867, one of the Irish land magnates, Lord Dufferin, set about its solution in *The Times*. “Wie menschlich von solch grossem Herrn!”

From Table E. we saw that, during 1864, of £4,368,610 of total profits, three surplus-value makers pocketed only £262,819; that in 1865, however, out of £4,669,979 total profits, the same three virtuosi of “abstinence” pocketed £274,528; in 1864, 26 surplus-value makers reached to £646,377; in 1865, 28 surplus-value makers reached to £736,448; in 1864, 121 surplus-value makers, £1,076,912; in 1865, 150 surplus-value makers, £1,320,906; in 1864, 1,131 surplus-value makers £2,150,818, nearly half of the total annual profit; in 1865, 1,194 surplus-value makers, £2,418,833, more than half of the total annual profit. But the lion’s share, which an inconceivably small number of land magnates in England, Scotland and Ireland swallow up of the yearly national rental, is so monstrous that the wisdom of the English State does not think fit to afford the same statistical materials about the distribution of rents as about the distribution of profits. Lord Dufferin is one of those land magnates. That rent-rolls and profits can ever be “excessive,” or that their plethora is in any way connected with plethora of the people’s misery is, of course, an idea as “disreputable” as “unsound.” He keeps to facts. The fact is that, as the Irish population diminishes, the Irish rent-rolls swell; that depopulation benefits the landlords, therefore also benefits the soil, and, therefore, the people, that mere accessory of the soil. He declares, therefore, that Ireland is still over-populated, and

the stream of emigration still flows too lazily. To be perfectly happy, Ireland must get rid of at least one-third of a million of labouring men. Let no man imagine that this lord, poetic into the bargain, is a physician of the school of Sangrado, who as often as he did not find his patient better, ordered phlebotomy and again phlebotomy, until the patient lost his sickness at the same time as his blood. Lord Dufferin demands a new blood-letting of one-third of a million only, instead of about two millions; in fact, without the getting rid of these, the millennium in Erin is not to be. The proof is easily given.

NUMBER AND EXTENT OF FARMS IN IRELAND IN 1864 [140]		
	No.	Acres
(1) Farms not over 1 acre.	48,653	25,394
(2) Farms over 1, not over 5 acres.	82,037	288,916
(3) Farms over 5, not over 15 acres.	176,368	1,836,310
(4) Farms over 15, not over 30 acres.	136,578	3,051,343
(5) Farms over 30, not over 50 acres.	71,961	2,906,274
(6) Farms over 50, not over 100 acres.	54,247	3,983,880

(7) Farms over 100 acres.	31,927	8,227,807
(8) TOTAL AREA.	—	26,319,924

Centralisation has from 1851 to 1861 destroyed principally farms of the first three categories, under 1 and not over 15 acres. These above all must disappear. This gives 307,058 “supernumerary” farmers, and reckoning the families the low average of 4 persons, 1,228,232 persons. On the extravagant supposition that, after the agricultural revolution is complete one-fourth of these are again absorbable, there remain for emigration 921,174 persons. Categories 4, 5, 6, of over 15 and not over 100 acres, are, as was known long since in England, too small for capitalistic cultivation of corn, and for sheep-breeding are almost vanishing quantities. On the same supposition as before, therefore, there are further 788,761 persons to emigrate; total, 1,709,532. And as l’appétit vient en mangeant, Rentroll’s eyes will soon discover that Ireland, with 3½ millions, is still always miserable, and miserable because she is overpopulated. Therefore her depopulation must go yet further, that thus she may fulfil her true destiny, that of an English sheep-walk and cattle-pasture.” [\[141\]](#)

Like all good things in this bad world, this profitable method has its drawbacks. With the accumulation of rents in Ireland, the accumulation of the Irish in America keeps pace. The Irishman, banished by sheep and ox, re-appears on the other side of the ocean as a Fenian, and face to face with the old queen of the seas rises, threatening and more threatening, the

young giant Republic:

Acerba fata Romanos agunt

Scelusque fraternae necis.

[A cruel fate torments the Romans,
and the crime of fratricide]

Footnotes

[1.](#) Karl Marx, l. c., “A égalité d’oppression des masses, plus un pays a de prolétaires et plus il est riche.” (Colins, “L’Economie Politique. Source des Révolutions et des Utopies, prétendues Socialistes.” Paris, 1857, t. III., p. 331.) Our “proletarian” is economically none other than the wage labourer, who produces and increases capital, and is thrown out on the streets, as soon as he is superfluous for the needs of aggrandisement of “Monsieur capital,” as Pecqueur calls this person. “The sickly proletarian of the primitive forest,” is a pretty Roscherian fancy. The primitive forester is owner of the primitive forest, and uses the primitive forest as his property with the freedom of an orang-outang. He is not, therefore, a proletarian. This would only be the case, if the primitive forest exploited him, instead of being exploited by him. As far as his health is concerned, such a man would well bear comparison, not only with the modern proletarian, but also with the syphilitic and scrofulous upper classes. But, no doubt, Herr Wilhelm Roscher, by “primitive forest” means his native heath of Lüneburg.

[2.](#) John Bellers, l. c., p. 2.

[3.](#) Bernard de Mandeville: “The Fable of the Bees,” 5th edition, London, 1728. Remarks, pp. 212, 213, 328.

“Temperate living and constant employment is the direct road, for the poor, to rational happiness” [by which he most probably means long working-days and little means of subsistence], “and to riches and strength for the state” (*viz.*, for the landlords, capitalists, and their political dignitaries and agents). (“An Essay on Trade and Commerce,” London, 1770, p. 54.)

[4.](#) Eden should have asked, whose creatures then are “the civil institutions”? From his standpoint of juridical illusion, he does not regard the law as a product of the material relations of production, but conversely the relations of production as products of the law. Linguet overthrew Montesquieu’s illusory “*Esprit des lois*” with one word: “*L’esprit des lois, c’est la propriété.*” [The spirit of laws is property]

[5.](#) Eden, l. c., Vol. 1, book I., chapter 1, pp. 1, 2, and preface, p. xx.

[6.](#) If the reader reminds me of Malthus, whose “Essay on Population” appeared in 1798, I remind him that this work in its first form is nothing more than a schoolboyish, superficial plagiarism of De Foe, Sir James Steuart, Townsend, Franklin, Wallace, &c., and does not contain a single sentence thought out by himself. The great sensation this pamphlet caused, was due solely to party interest. The French Revolution had found passionate defenders in the United Kingdom; the “principle of population,” slowly worked out in the eighteenth century, and then, in the midst of a great social crisis, proclaimed with

drums and trumpets as the infallible antidote to the teachings of Condorcet, &c., was greeted with jubilation by the English oligarchy as the great destroyer of all hankerings after human development. Malthus, hugely astonished at his success, gave himself to stuffing into his book materials superficially compiled, and adding to it new matter, not discovered but annexed by him. Note further: Although Malthus was a parson of the English State Church, he had taken the monastic vow of celibacy — one of the conditions of holding a Fellowship in Protestant Cambridge University: “Socios collegiorum maritos esse non permittimus, sed statim postquam quis uxorem duxerit socius collegii desinat esse.” (“Reports of Cambridge University Commission,” p. 172.) This circumstance favourably distinguishes Malthus from the other Protestant parsons, who have shuffled off the command enjoining celibacy of the priesthood and have taken, “Be fruitful and multiply,” as their special Biblical mission in such a degree that they generally contribute to the increase of population to a really unbecoming extent, whilst they preach at the same time to the labourers the “principle of population.” It is characteristic that the economic fall of man, the Adam’s apple, the urgent appetite, “the checks which tend to blunt the shafts of Cupid,” as Parson Townsend waggishly puts it, that this delicate question was and is monopolised by the Reverends of Protestant Theology, or rather of the Protestant Church. With the exception of the Venetian monk, Ortes, an original and clever writer, most of the population theory teachers are Protestant parsons. For instance, Bruckner, “Théorie du Système animal,” Leyde, 1767, in which the whole subject of

the modern population theory is exhausted, and to which the passing quarrel between Quesnay and his pupil, the elder Mirabeau, furnished ideas on the same topic; then Parson Wallace, Parson Townsend, Parson Malthus and his pupil, the arch-Parson Thomas Chalmers, to say nothing of lesser reverend scribblers in this line. Originally, Political Economy was studied by philosophers like Hobbes, Locke, Hume; by businessmen and statesmen, like Thomas More, Temple, Sully, De Witt, North, Law, Vanderlint, Cantillon, Franklin; and especially, and with the greatest success, by medical men like Petty, Barbon, Mandeville, Quesnay. Even in the middle of the eighteenth century, the Rev. Mr. Tucker, a notable economist of his time, excused himself for meddling with the things of Mammon. Later on, and in truth with this very “Principle of population,” struck the hour of the Protestant parsons. Petty, who regarded the population as the basis of wealth, and was, like Adam Smith, an outspoken foe to parsons, says, as if he had a presentiment of their bungling interference, “that Religion best flourishes when the Priests are most mortified, as was before said of the Law, which best flourisheth when lawyers have least to do.” He advises the Protestant priests, therefore, if they, once for all, will not follow the Apostle Paul and “mortify” themselves by celibacy, “not to breed more Churchmen than the Benefices, as they now stand shared out, will receive, that is to say, if there be places for about twelve thousand in England and Wales, it will not be safe to breed up 24,000 ministers, for then the twelve thousand which are unprovided for, will seek ways how to get themselves a livelihood, which they cannot do more easily than by

persuading the people that the twelve thousand incumbents do poison or starve their souls, and misguide them in their way to Heaven.” (Petty: “A Treatise of Taxes and Contributions,” London, 1667, p. 57.) Adam Smith’s position with the Protestant priesthood of his time is shown by the following. In “A Letter to A. Smith, L.L.D. On the Life, Death, and Philosophy of his Friend, David Hume. By one of the People called Christians,” 4th Edition, Oxford, 1784, Dr. Horne, Bishop of Norwich, reproves Adam Smith, because in a published letter to Mr. Strahan, he “embalmed his friend David” (sc. Hume); because he told the world how “Hume amused himself on his deathbed with Lucian and Whist,” and because he even had the impudence to write of Hume: “I have always considered him, both in his life-time and since his death, as approaching as nearly to the idea of a perfectly wise and virtuous man, as, perhaps, the nature of human frailty will permit.” The bishop cries out, in a passion: “Is it right in you, Sir, to hold up to our view as ‘perfectly wise and virtuous,’ the *character* and *conduct* of one, who seems to have been possessed with an incurable antipathy to all that is called *Religion*; and who strained every nerve to explode, suppress and extirpate the spirit of it among men, that its very name, if he could effect it, might no more be had in remembrance?” (l. c., p. 8.) “But let not the lovers of truth be discouraged. Atheism cannot be of long continuance.” (P. 17.) Adam Smith, “had the atrocious wickedness to propagate atheism through the land (viz., by his “Theory of Moral Sentiments”). Upon the whole, Doctor, your meaning is good; but I think you will not succeed this time. You would persuade us, by the example of

David Hume, Esq., that atheism is the only cordial for low spirits, and the proper antidote against the fear of death.... You may smile over *Babylon* in ruins and congratulate the hardened *Pharaoh* on his overthrow in the Red Sea.” (l. c., pp. 21, 22.) One orthodox individual, amongst Adam Smith’s college friends, writes after his death: “Smith’s well-placed affection for Hume ... hindered him from being a Christian.... When he met with honest men whom he liked ... he would believe almost anything they said. Had he been a friend of the worthy ingenious Horrox he would have believed that the moon some times disappeared in a clear sky without the interposition of a cloud.... He approached to republicanism in his political principles.” (“The Bee.” By James Anderson, 18 Vols., Vol. 3, pp. 166, 165, Edinburgh, 1791-93.) Parson Thomas Chalmers has his suspicions as to Adam Smith having invented the category of “unproductive labourers,” solely for the Protestant parsons, in spite of their blessed work in the vineyard of the Lord.

[7.](#) “The limit, however, to the employment of both the operative and the labourer is the same; namely, the possibility of the employer realising a *profit* on the produce of their industry. If the rate of wages is such as to reduce the master’s gains below the average profit of capital, he will cease to employ them, or he will only employ them on condition of submission to a reduction of wages.” (John Wade, l. c., p. 241.)

[8.](#) Note by the Institute of Marxism-Leninism to the Russian edition: The MS in the first case says “little” and in the second case “much”; the correction has been introduced according to

the authorised French translation.

[9.](#) Cf. Karl Marx: “Zur Kritik der Politischen Oekonomie,” pp. 166, seq.

[10.](#) “If we now return to our first inquiry, wherein it was shown that capital itself is only the result of human labour... it seems quite incomprehensible that man can have fallen under the domination of capital, his own product; can be subordinated to it; and as in reality this is beyond dispute the case, involuntarily the question arises: How has the labourer been able to pass from being master of capital — as its creator — to being its slave?” (Von Thünen, “Der isolierte Staat” Part ii., Section ii., Rostock, 1863, pp. 5, 6.) It is Thünen’s merit to have asked this question. His answer is simply childish.

[11.](#) From Adam Smith, *Enquiry into the Nature of*, Volume I.

[12.](#) *Note in the 4th German edition.* — The latest English and American “trusts” are already striving to attain this goal by attempting to unite at least all the large-scale concerns in one branch of industry into one great joint-stock company with a practical monopoly. *F. E.*

[13.](#) *Note in the 3rd German edition.* — In Marx’s copy there is here the marginal note: “Here note for working out later; if the extension is only quantitative, then for a greater and a smaller capital in the same branch of business the profits are as the magnitudes of the capitals advanced. If the quantitative extension induces qualitative change, then the rate of profit on the larger capital rises simultaneously.” *F. E.*

[14.](#) The census of England and Wales shows: all persons employed in agriculture (landlords, farmers, gardeners, shepherds, &c., included): 1851, 2,011,447; 1861, 1,924,110. Fall, 87,337. Worsted manufacture: 1851, 102,714 persons; 1861, 79,242. Silk weaving: 1851, 111,940; 1861, 101,678. Calico-printing: 1851, 12,098; 1861, 12,556. A small rise that, in the face of the enormous extension of this industry and implying a great fall proportionally in the number of labourers employed. Hat-making: 1851, 15,957; 1861, 13,814. Straw-hat and bonnet-making: 1851, 20,393; 1861, 18,176. Malting: 1851, 10,566; 1861, 10,677. Chandlery, 1851, 4,949; 1861, 4,686. This fall is due, besides other causes, to the increase in lighting by gas. Comb-making: 1851, 2,038; 1861, 1,478. Sawyers: 1851, 30,552; 1861, 31,647 — a small rise in consequence of the increase of sawing-machines. Nail-making: 1851, 26,940; 1861, 26,130 — fall in consequence of the competition of machinery. Tin and copper-mining: 1851, 31,360; 1861, 32,041. On the other hand: Cotton-spinning and weaving: 1851, 371,777; 1861, 456,646. Coal-mining: 1851, 183,389, 1861, 246,613, “The increase of labourers is generally greatest, since 1851, in such branches of industry in which machinery has not up to the present been employed with success.” (Census of England and Wales for 1861. Vol. III. London, 1863, p. 36.)

[15.](#) *Added in the 4th German edition.* — The law of progressive diminution of the relative magnitude of variable capital and its effect on the condition of the class of wage workers is conjectured rather than understood by some of the prominent economists of the classical school. The greatest

service was rendered here by John Barton, although he, like all the rest, lumps together constant and fixed capital, variable and circulating capital. He says:

“The demand for labour depends on the increase of circulating, and not of fixed capital. Were it true that the proportion between these two sorts of capital is the same at all times, and in all circumstances, then, indeed, it follows that the number of labourers employed is in proportion to the wealth of the state. But such a proposition has not the semblance of probability. As arts are cultivated, and civilisation is extended, fixed capital bears a larger and larger proportion to circulating capital. The amount of fixed capital employed in the production of a piece of British muslin is at least a hundred, probably a thousand times greater than that employed in a similar piece of Indian muslin. And the proportion of circulating capital is a hundred or thousand times less ... the whole of the annual savings, added to the fixed capital, would have no effect in increasing the demand for labour.” (John Barton, “Observations on the Circumstances which Influence the Condition of the Labouring Classes of Society.” London, 1817, pp. 16, 17.) “The same cause which may increase the net revenue of the country may at the same time render the population redundant, and deteriorate the condition of the labourer.” (Ricardo, l. c., p. 469.) With increase of capital, “the demand [for labour] will be in a diminishing ratio.” (Ibid., p. 480, Note.) “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 become

more frequent as capital itself becomes more plentiful.”
(Richard Jones, “An Introductory Lecture on Pol. Econ.,”
Lond. 1833, p. 13) “Demand [for labour] will rise ... not in
proportion to the accumulation of the general capital. ... Every
augmentation, therefore, in the national stock destined for
reproduction, comes, in the progress of society, to have less
and less influence upon the condition of the labourer.”
(Ramsay, l. c., pp. 90, 91.)

[16.](#) H. Merivale. “Lectures on Colonisation and Colonies,”
1841, Vol. I , p. 146.

[17.](#) Malthus, “Principles of Political Economy,” pp. 215, 319,
320. In this work, Malthus finally discovers, with the help of
Sismondi, the beautiful Trinity of capitalistic production: over-
production, over-population, over-consumption — three very
delicate monsters, indeed. Cf. F. Engels, “Umrisse zu einer
Kritik der Nationalökonomie,” l. c., p, 107, et seq.

[18.](#) Harriet Martineau, “A Manchester Strike,” 1832, p. 101.

[19.](#) Even in the cotton famine of 1863 we find, in a pamphlet
of the operative cotton-spinners of Blackburn, fierce
denunciations of overwork, which, in consequence of the
Factory Acts, of course only affected adult male labourers.
“The adult operatives at this mill have been asked to work
from 12 to 13 hours per day, while there are hundreds who are
compelled to be idle who would willingly work partial time, in
order to maintain their families and save their brethren from a
premature grave through being overworked.... We,” it goes on
to say, “would ask if the practice of working overtime by a
number of hands, is likely to create a good feeling between

masters and servants. Those who are worked overtime feel the injustice equally with those who are condemned to forced idleness. There is in the district almost sufficient work to give to all partial employment if fairly distributed. We are only asking what is right in requesting the masters generally to pursue a system of short hours, particularly until a better state of things begins to dawn upon us, rather than to work a portion of the hands overtime, while others, for want of work, are compelled to exist upon charity.” (“Reports of Insp. of Fact., Oct. 31, 1863,” p. 8.) The author of the “Essay on Trade and Commerce” grasps the effect of a relative surplus population on the employed labourers with his usual unerring bourgeois instinct. “Another cause of idleness in this kingdom is the want of a sufficient number of labouring hands Whenever from an extraordinary demand for manufactures, labour grows scarce, the labourers feel their own consequence, and will make their masters feel it likewise — it is amazing; but so depraved are the dispositions of these people, that in such cases a set of workmen have combined to distress the employer by idling a whole day together.” (“Essay, &c.,” pp. 27, 28.) The fellows in fact were hankering after a rise in wages.

[20.](#) *Economist*, Jan. 21. 1860.

[21.](#) Whilst during the last six months of 1866, 80-90,000 working people in London were thrown out of work, the Factory Report for that same half year says: “It does not appear absolutely true to say that demand will always produce supply just at the moment when it is needed. It has not done so with labour, for much machinery has been idle last year for

want of hands.” (“Rep. of Insp. of Fact., 31st Oct., 1866,” p. 81.)

[22.](#) Opening address to the Sanitary Conference, Birmingham, January 15th, 1875, by J. Chamberlain, Mayor of the town, now (1883) President of the Board of Trade.

[23.](#) 781 towns given in the census for 1861 for England and Wales “contained 10,960,998 inhabitants, while the villages and country parishes contained 9,105,226. In 1851, 580 towns were distinguished, and the population in them and in the surrounding country was nearly equal. But while in the subsequent ten years the population in the villages and the country increased half a million, the population in the 580 towns increased by a million and a half (1,554,067). The increase of the population of the country parishes is 6.5 per cent., and of the towns 17.3 per cent. The difference in the rates of increase is due to the migration from country to town. Three-fourths of the total increase of population has taken place in the towns.” (“Census, &c.,” pp. 11 and 12.)

[24.](#) “Poverty seems favourable to generation.” (A. Smith.) This is even a specially wise arrangement of God, according to the gallant and witty Abbé Galiani “Iddio af che gli uomini che esercitano mestieri di prima utilità nascono abbondantemente.” (Galiani, l. c., p. 78.) [God ordains that men who carry on trades of primary utility are born in abundance] “Misery up to the extreme point of famine and pestilence, instead of checking, tends to increase population.” (S. Laing, “National Distress,” 1844, p. 69.) After Laing has illustrated this by statistics, he continues: “If the people were

all in easy circumstances, the world would soon be depopulated.”

[25.](#) “De jour en jour il devient donc plus clair que les rapports de production dans lesquels se meut la bourgeoisie n’ont pas un caractère un, un caractère simple, mais un caractère de duplicité; que dans les mêmes rapports dans lesquels se produit la richesse, la misère se produit aussi; que dans les mêmes rapports dans lesquels il y a développement des forces productives, il y a une force productive de répression; que ces rapports ne produisent la richesse bourgeoise, c’est-à-dire la richesse de la classe bourgeoise, qu’en anéantissant continuellement la richesse des membres intégrants de cette classe et en produisant un prolétariat toujours croissant.”

[From day to day it thus becomes clearer that the production relations in which the bourgeoisie moves have not a simple, uniform character, but a dual character; that in the selfsame relations in which wealth is produced, poverty is produced also; that in the selfsame relations in which there is a development of productive forces, there is also a force producing repression; that there relations produce bourgeois wealth, i.e., the wealth of the bourgeois class, only by continually annihilating the wealth of the individual members of this class and by producing an evergrowing proletariat] (Karl Marx: “Misère de la Philosophie,” p. 116.)

[26.](#) G. Ortes: “Delia Economia Nazionale libri sei, 1777,” in Custodi, Parte Moderna, t. xxi, pp. 6, 9, 22, 25, etc. Ortes says, l. c., p. 32: “In luogo di progettare sistemi inutili per la felicità de’ popoli, mi limiterò a investigare la regione della loro infelicità.” [Instead of projecting useless systems for achieving

the happiness of people, I shall limit myself to investigating the reasons for their unhappiness]

[27.](#) “A Dissertation on the Poor Laws. By a Well-wisher of Mankind. (The Rev. J. Townsend) 1786,” republished Lond. 1817, pp. 15, 39, 41. This “delicate” parson, from whose work just quoted, as well as from his “Journey through Spain,” Malthus often copies whole pages, himself borrowed the greater part of his doctrine from Sir James Steuart, whom he however alters in the borrowing. *E.g.*, when Steuart says: “Here, in slavery, was a forcible method of making mankind diligent,” [for the non-workers] ... “Men were then forced to work” [*i.e.*, to work gratis for others], “because they were slaves of others; men are now forced to work” [*i.e.*, to work gratis for non-workers] “because they are the slaves of their necessities,” he does not thence conclude, like the fat holder of benefices, that the wage labourer must always go fasting. He wishes, on the contrary, to increase their wants and to make the increasing number of their wants a stimulus to their labour for the “more delicate.”

[28.](#) Storch, l. c., t. iii, p. 223.

[29.](#) Sismondi, l. c., pp. 79, 80, 85.

[30.](#) Destutt de Tracy, l. c., p. 231: “Les nations pauvres, c’est là où le peuple est à son aise; et les nations riches, c’est là où il est ordinairement pauvre.” [The poor nations are those where the people are comfortably off; and the rich nations, those where the people are generally poor]

[31.](#) “Tenth Report of the Commissioners of H. M. Inland

Revenue.” Lond., 1866. p. 38.

[32.](#) Ibidem.

[33.](#) These figures are sufficient for comparison, but, taken absolutely, are false, since, perhaps, £100,000,000 of income are annually not declared. The complaints of the Inland Revenue Commissioners of systematic fraud, especially on the part of the commercial and industrial classes, are repeated in each of their reports. So *e.g.*, “A Joint-stock company returns £6,000 as assessable profits, the surveyor raises the amount to £88,000, and upon that sum duty is ultimately paid. Another company which returns £190,000 is finally compelled to admit that the true return should be £250,000.” (Ibid., p, 42.)

[34.](#) “Census, &c.,” l. c., p. 29. John Bright’s assertion that 150 landlords own half of England, and 12 half the Scotch soil, has never been refuted.

[35.](#) “Fourth Report, &c., of Inland Revenue.” Lond., 1860, p. 17.

[36.](#) These are the net incomes after certain legally authorised abatements.

[37.](#) At this moment, March, 1867, the Indian and Chinese market is again overstocked by the consignments of the British cotton manufacturers. In 1866 a reduction in wages of 5 per cent. took place amongst the cotton operatives. In 1867, as consequence of a similar operation, there was a strike of 20,000 men at Preston. [*Added in the 4th German edition.* — That was the prelude to the crisis which broke out immediately afterwards. — *F. E.*]

[38.](#) “Census, &C.,” l. c., P. 11.

[39.](#) Gladstone in the House of Commons, Feb. 13th, 1843. *Times*, Feb. 14th, 1843 — “It is one of the most melancholy features in the social state of this country that we see, beyond the possibility of denial, that while there is at this moment a decrease in the consuming powers of the people, an increase of the pressure of privations and distress; there is at the same time a constant accumulation of wealth in the upper classes, an increase of the luxuriousness of their habits, and of their means of enjoyment.” (Hansard, 13th Feb.)

[40.](#) Gladstone in the House of Commons, April 16th, 1863. *Morning Star*, April 17th.

[41.](#) See the official accounts in the Blue book: “Miscellaneous Statistics of the United Kingdom,” Part vi., London, 1866, pp. 260-273, *passim*. Instead of the statistics of orphan asylums, &c., the declamations of the ministerial journals in recommending dowries for the Royal children might also serve. The greater dearness of the means of subsistence is never forgotten there.

[42.](#) Gladstone, House of Commons, 7th April, 1864. — “The Hansard version runs: ‘Again, and yet more at large — what is human life, but, in the majority of cases, a struggle for existence.’ The continual crying contradictions in Gladstone’s Budget speeches of 1863 and 1864 were characterised by an English writer by the following quotation from Boileau:

“Voilà l’homme en effet. Il va du blanc au noir,
Il condamne au matin ses sentiments du soir.

Importun à tout autre, à soi-même incommode,
Il change à tout moment d'esprit comme de mode.”

[Such is the man: he goes from black to white. / He condemns in the morning what he felt in the evening. / A nuisance to everyone else, and an inconvenience to himself, / he changes his way of thinking as easily as he changes his way of dressing]

(“The Theory of Exchanges, &c.,” London, 1864, p. 135.)

[43.](#) H. Fawcett, l. c., pp. 67-82. As to the increasing dependence of labourers on the retail shopkeepers, this is the consequence of the frequent oscillations and interruptions of their employment.

[44.](#) Wales here is always included in England.

[45.](#) A peculiar light is thrown on the advance made since the time of Adam Smith, by the fact that by him the word “workhouse” is still occasionally used as synonymous with “manufactory”; *e.g.*, the opening of his chapter on the division of labour; “those employed in every different branch of the work can often be collected into the same workhouse.”

[46.](#) “Public Health. Sixth Report, 1864,” p. 13.

[47.](#) l. c., p. 17.

[48.](#) l. c., p. 13.

[49.](#) l. c., Appendix, p. 232.

[50.](#) l. c., pp. 232, 233.

[51.](#) l. c., pp. 14, 15.

[52.](#) “In no particular have the rights of *persons* been so

avowedly and shamefully sacrificed to the rights of *property* as in regard to the lodging of the labouring class. Every large town may be looked upon as a place of human sacrifice, a shrine where thousands pass yearly through the fire as offerings to the moloch of avarice,” S. Laing, l. c., p. 150.

[53.](#) “Public Health, Eighth Report. 1866.” p. 14, note.

[54.](#) l. c., p. 89. With reference to the children in these colonies, Dr. Hunter says: “People are not now alive to tell us how children were brought up before this age of dense agglomerations of poor began, and he would be a rash prophet who should tell us what future behaviour is to be expected from the present growth of children, who, under circumstances probably never before paralleled in this country, are now completing their education for future practice, as ‘dangerous classes’ by sitting up half the night with persons of every age, half naked, drunken, obscene, and quarrelsome.” (l. c., p. 56.)

[55.](#) l. c., p. 62.

[56.](#) “Report of the Officer of Health of St. Martins-in-the-Fields, 1865.”

[57.](#) “Public Health, Eighth Report, 1866,” p. 91.

[58.](#) l. c., p. 88.

[59.](#) l. c., p. 88.

[60.](#) l. c., p. 89.

[61.](#) l. c., p. 55 and 56.

[62.](#) l. c., p. 149.

[63.](#) l. c., p. 50.

[64.](#)

COLLECTING AGENTS LIST (BRADFORD).		
	<i>Houses</i>	
Vulcan Street, No. 122	1 room	16 persons
Lumiev Street, No. 13	1 room	11 persons
Bower Street, No. 41	1 room	11 persons
Portland Street. No. 112	1 room	10 persons
Hardy Street, No. 17	1 room	10 persons
North Street, No. 18	1 room	16 persons
North Street, No. 17	1 room	13 persons
Wymer Street, No. 19	1 room	8 adults
Jowett Street, No. 56	1 room	12 persons
George Street, No. 150	1 room	3 families
Rifle Court Marygate, No. 11	1 room	11 persons
Marshall Street, No. 28	1 room	10 persons
Marshall Street, No. 49	1 room	3 families
George Street, No. 128	1 room	18 persons
George Street, No. 130	1 room	16 persons
Edward Street, No. 4	1 room	17 persons

George Street, No. 49	1 room	2 families
York Street, No. 34	1 room	2 families
Salt Pie Street (bottom)	2 room	26 persons
	<i>Cellars</i>	
Regent Square	1 cellar	8 persons
Acre Street	1 cellar	7 persons
33 Roberts Court	1 cellar	7 persons
Back Pratt Street used as a brazier's shop	1 cellar	7 persons
27 Ebenezer Street	1 cellar	6 persons
l. c.,	p. 111.	(no male above 18).

[65.](#) l. c., p. 114.

[66.](#) l. c., p. 50.

[67.](#) “Public Health. Seventh Report. 1865,” p. 18.

[68.](#) l. c., p. 165.

[69.](#) l. c., p. 18, Note. — The Relieving Officer of the Chapel-en-le-Frith Union reported to the Registrar-General as follows: — “At Doveholes, a number of small excavations have been

made into a large hillock of lime ashes (the refuse of lime-kilns), and which are used as dwellings, and occupied by labourers and others employed in the construction of a railway now in course of construction through that neighbourhood. The excavations are small and damp, and have no drains or privies about them, and not the slightest means of ventilation except up a hole pulled through the top, and used for a chimney. In consequence of this defect, small-pox has been raging for some time, and some deaths [amongst the troglodytes] have been caused by it.” (l. c., note 2.)

[70.](#) The details given at the end of Part IV. refer especially to the labourers in coal mines. On the still worse condition in metal mines, see the very conscientious Report of the Royal Commission of 1864.

[71.](#) l. c., pp. 180, 182.

[72.](#) l. c., pp. 515, 517.

[73.](#) l. c., p. 16.

[74.](#) “Wholesale starvation of the London Poor.... Within the last few days the walls of London have been placarded with large posters, bearing the following remarkable announcement: — ‘Fat oxen! Starving men! The fat oxen from their palace of glass have gone to feed the rich in their luxurious abode, while the starving men are left to rot and die in their wretched dens.’ The placards bearing these ominous words are put up at certain intervals. No sooner has one set been defaced or covered over, than a fresh set is placarded in the former, or some equally public place.... This ... reminds

one of the secret revolutionary associations which prepared the French people for the events of 1789.... At this moment, while English workmen with their wives and children are dying of cold and hunger, there are millions of English gold — the produce of English labour — being invested in Russian, Spanish, Italian, and other foreign enterprises.” —*Reynolds’ Newspaper*, January 20th, 1867.

[75.](#) James E. Thorold Rogers. (Prof. of Polit. Econ. in the University of Oxford.) “A History of Agriculture and Prices in England.” Oxford, 1866, v. 1, p. 690. This work, the fruit of patient and diligent labour, contains in the two volumes that have so far appeared, only the period from 1259 to 1400. The second volume contains simply statistics. It is the first authentic “History of Prices” of the time that we possess.

[76.](#) “Reasons for the Late Increase of the Poor-Rates: or a comparative view of the prices of labour and provisions.” Lond., 1777, pp. 5, 11.

[77.](#) Dr. Richard Price: “Observations on Reversionary Payments,” 6th Ed. By W. Morgan, Lond., 1803, v. II., pp. 158, 159. Price remarks on p. 159: “The nominal price of day-labour is at present no more than about four times, or, at most, five times higher than it was in the year 1514. But the price of corn is seven times, and of flesh-meat and raiment about fifteen times higher. So far, therefore, has the price of labour been even from advancing in proportion to the increase in the expenses of living, that it does not appear that it bears now half the proportion to those expenses that it did bear.”

[78.](#) Barton, l. c., p. 26. For the end of the 18th century cf.

Eden, l. c.

[79.](#) Parry, l. c., p. 86.

[80.](#) id., p. 213.

[81.](#) S. Laing, l. c., p. 62.

[82.](#) "England and America." Lond., 1833, Vol. 1, p. 47.

[83.](#) The landed aristocracy advanced themselves to this end, of course per Parliament, funds from the State Treasury, at a very low rate of interest, which the farmers have to make good at a much higher rate.

[84.](#) London *Economist*, May 29th, 1845, p. 290.

[85.](#) The decrease of the middle-class farmers can be seen especially in the census category: "Farmer's son, grandson, brother, nephew, daughter, granddaughter, sister, niece"; in a word, the members of his own family, employed by the farmer. This category numbered, in 1851, 216,851 persons; in 1861, only 176,151. From 1851 to 1871, the farms under 20 acres fell by more than 900 in number; those between 50 and 75 acres fell from 8,253 to 6,370; the same thing occurred with all other farms under 100 acres. On the other hand, during the same twenty years, the number of large farms increased; those of 300-500 acres rose from 7,771 to 8,410, those of more than 500 acres from 2,755 to 3,914, those of more than 1,000 acres from 492 to 582.

[86.](#) The number of shepherds increased from 12,517 to 25,559.

[87.](#) Census, l. c., p. 36.

[88.](#) Rogers, l. c., p. 693, p. 10. Mr. Rogers belongs to the

Liberal School, is a personal friend of Cobden and Bright, and therefore no *laudator temporis acti*.

[89.](#) “Public Health. Seventh Report,” 1865, p. 242. It is therefore nothing unusual either for the landlord to raise a labourer’s rent as soon as he hears that he is earning a little more, or for the farmer to lower the wage of the labourer, “because his wife has found a trade,” l. c.

[90.](#) l. c., p. 135.

[91.](#) l. c., p. 134.

[92.](#) “Report of the Commissioners ... relating to Transportation and Penal Servitude,” Lond., 1863, pp. 42, 50.

[93.](#) l. c., p. 77. “Memorandum by the Lord Chief Justice.”

[94.](#) l. c., Vol. II, Minutes of Evidence.

[95.](#) l. c., Vol. 1. Appendix, p. 280.

[96.](#) l. c., pp. 274, 275.

[97.](#) “Public Health, Sixth Report,” 1864, pp. 238, 249, 261, 262.

[98.](#) l. c., p. 262.

[99.](#) l. c., p. 17. The English agricultural labourer receives only 1/4 as much milk, and 1/2 as much bread as the Irish. Arthur Young in his “Tour in Ireland,” at the beginning of this century, already noticed the better nourishment of the latter. The reason is simply this, that the poor Irish farmer is incomparably more humane than the rich English. As regards Wales, that which is said in the text holds only for the

southwest. All the doctors there agree that the increase of the death-rate through tuberculosis, scrofula, etc., increases in intensity with the deterioration of the physical condition of the population, and all ascribe this deterioration to poverty. "His (the farm labourer's) keep is reckoned at about five pence a day, but in many districts it was said to be of much less cost to the farmer" [himself very poor].... "A morsel of the salt meat or bacon, ... salted and dried to the texture of mahogany, and hardly worth the difficult process of assimilation ... is used to flavour a large quantity of broth or gruel, of meal and leeks, and day after day this is the labourer's dinner." The advance of industry resulted for him, in this harsh and damp climate, in "the abandonment of the solid homespun clothing in favour of the cheap and so-called cotton goods," and of stronger drinks for so-called tea. "The agriculturist, after several hours' exposure to wind and rain, pins his cottage to sit by a fire of peat or of balls of clay and small coal kneaded together, from which volumes of carbonic and sulphurous acids are poured forth. His walls are of mud and stones, his floor the bare earth which was there before the hut was built, his roof a mass of loose and sodden thatch. Every crevice is topped to maintain warmth, and in an atmosphere of diabolic odour, with a mud floor, with his only clothes drying on his back, he often sups and sleeps with his wife and children. Obstetricians who have passed parts of the night in such cabins have described how they found their feet sinking in the mud of the floor, and they were forced (easy task) to drill a hole through the wall to effect a little private respiration. It was attested by numerous witnesses in various grades of life, that to these insanitary

influences, and many more, the underfed peasant was nightly exposed, and of the result, a debilitated and scrofulous people, there was no want of evidence.... The statements of the relieving officers of Carmarthenshire and Cardiganshire show in a striking way the same state of things. There is besides “a plague more horrible still, the great number of idiots.” Now a word on the climatic conditions. “A strong south-west wind blows over the whole country for 8 or 9 months in the year, bringing with it torrents of rain, which discharge principally upon the western slopes of the hills. Trees are rare, except in sheltered places, and where not protected, are blown out of all shape. The cottages generally crouch under some bank, or often in a ravine or quarry, and none but the smallest sheep and native cattle can live on the pastures.... The young people migrate to the eastern mining districts of Glamorgan and Monmouth. Carmarthenshire is the breeding ground of the mining population and their hospital. The population can therefore barely maintain its numbers.” Thus in Cardiganshire:

	1851	1861
Males	45,155	44,446
Females	52,459	52,955
	97,614	97,401

Dr. Hunter’s Report in “Public Health, Seventh Report. 1865,” pp. 498-502, passim.

[100.](#) In 1865 this law was improved to some extent. It will soon be learnt from experience that tinkering of this sort is of no use.

[101.](#) In order to understand that which follows, we must remember that “Close Villages” are those whose owners are one or two large landlords. “Open villages,” those whose soil belongs to many smaller landlords. It is in the latter that building speculators can build cottages and lodging-houses.

[102.](#) A show-village of this kind looks very nice, but is as unreal as the villages that Catherine II. saw on her journey to the Crimea. In recent times the shepherd also has often been banished from these show-villages; *e.g.*, near Market Harboro is sheep-farm of about 500 acres, which only employs the labour of one man. To reduce the long trudges over these wide plains, the beautiful pastures of Leicester and Northampton, the shepherd used to get a cottage on the farm. Now they give him a thirteenth shilling a week for lodging, that he must find far away in an open village.

[103.](#) “The labourers’ houses (in the open villages, which, of course, are always overcrowded) are usually in rows, built with their backs against the extreme edge of the plot of land which the builder could call his, and on this account are not allowed light and air, except from the front.” (Dr. Hunter’s Report, l. c., p. 135.) Very often the beerseller or grocer of the village is at the same time the letter of its houses. In this case the agricultural labourer finds in him a second master, besides the farmer. He must be his customer as well as his tenant. “The hind with his 10s. a week, minus a rent of £4 a year ... is obliged to buy at the seller’s own terms, his modicum of tea, sugar, flour, soap, candles, and beer.” (l. c., p. 132.) These open villages form, in fact, the “penal settlements” of the English agricultural proletariat. Many of the cottages are

simply lodging-houses, through which all the rabble of the neighbourhood passes. The country labourer and his family who had often, in a way truly wonderful, preserved, under the foulest conditions, a thoroughness and purity of character, go, in these, utterly to the devil. It is, of course, the fashion amongst the aristocratic shylocks to shrug their shoulders pharisaically at the building speculators, the small landlords, and the open villages. They know well enough that their “close villages” and “show-villages” are the birth-places of the open villages, and could not exist without them. “The labourers ... were it not for the small owners, would, for by far the most part, have to sleep under the trees of the farms on which they work.” (l. c., p. 135.) The system of “open” and “closed” villages obtains in all the Midland counties and throughout the East of England.

[104.](#) “The employer ... is ... directly or indirectly securing to himself the profit on a man employed at 10s. a week, and receiving from this poor hind £4 or £5 annual rent for houses not worth £20 in a really free market, but maintained at their artificial value by the power of the owner to say ‘Use my house, or go seek a hiring elsewhere without a character from me....’ Does a man wish to better himself, to go as a plate-layer on the railway, or to begin quarry-work, the same power is ready with ‘Work for me at this low rate of wages or begone at a week’s notice; take your pig with you, and get what you can for the potatoes growing in your garden.’ Should his interest appear to be better served by it, an enhanced rent is sometimes preferred in these cases by the owner (*i.e.*, the farmer) as the penalty for leaving his service.” (Dr. Hunter, l.

c., p. 132.)

[105.](#) “New married couples are no edifying study for grown-up brothers and sisters: and though instances must not be recorded, sufficient data are remembered to warrant the remark, that great depression and sometimes death are the lot of the female participator in the offence of incest.” (Dr. Hunter, l. c., p. 137.) A member of the rural police who had for many years been a detective in the worst quarters of London, says of the girls of his village: “their boldness and shamelessness I never saw equalled during some years of police life and detective duty in the worst parts of London They live like pigs, great boys and girls, mothers and fathers, all sleeping in one room, in many instances.” (“Child. Empl. Com. Sixth Report, 1867,” p. 77 sq. 155.)

[106.](#) “Public Health. Seventh Report, 1865,” pp. 9, 14 passim.

[107.](#) “The heaven-born employment of the hind gives dignity even to his position. He is not a slave, but a soldier of peace, and deserves his place in married men’s quarters to be provided by the landlord, who has claimed a power of enforced labour similar to that the country demands of the soldier. He no more receives market-price for his work than does the soldier. Like the soldier he is caught young, ignorant, knowing only his own trade, and his own locality. Early marriage and the operation of the various laws of settlement affect the one as enlistment and the Mutiny Act affect the other.” (Dr. Hunter, l. c., p. 132.) Sometimes an exceptionally soft-hearted landlord relents as the solitude he has created. “It is a melancholy thing to stand alone in one’s country,” said

Lord Leicester, when complimented on the completion of Hookham. “I look around and not a house is to be seen but mine. I am the giant of Giant Castle, and have eat up all my neighbours.”

[108.](#) A similar movement is seen during the last ten years in France; in proportion as capitalist production there takes possession of agriculture, it drives the “surplus” agricultural population into the towns. Here also we find deterioration in the housing and other conditions at the source of the surplus population. On the special “prolétariat foncier,” to which this system of parcelling out the land has given rise, see, among others, the work of Colins, already quoted, and Karl Marx “Der Achtzehnte Brumaire des Louis Bonaparte.” 2nd edition. Hamburg, 1869, pp. 56, &c. In 1846, the town population in France was represented by 24.42, the agricultural by 75.58; in 1861, the town by 28.86, the agricultural by 71.14 per cent. During the last 5 years, the diminution of the agricultural percentage of the population has been yet more marked. As early as 1846, Pierre Dupont in his “[Ouvriers](#)” sang:

Mal vêtus, logés dans des trous,
Sous les combles, dans les décombres,
Nous vivons avec les hiboux
Et les larrons, amis des ombres.

[Badly clothed, living in holes, under the eaves, in the ruins,
with the owls and the thieves, companions of the shadows]

[109.](#) “Sixth and last Report of the Children’s Employment Commission,” published at the end of March, 1867. It deals solely with the agricultural gang-system.

[110.](#) “Child. Emp. Comm., VI. Report.” Evidence 173, p. 37.

[111.](#) Some gang-masters, however, have worked themselves up to the position of farmers of 500 acres, or proprietors of whole rows of houses.

[112.](#) “Half the girls of Ludford have been ruined by going out” (in gangs). l. c., p. 6, § 32.

[113.](#) “They (gangs) have greatly increased of late years. In some places they are said to have been introduced at comparatively late dates; in others where gangs ... have been known for many years ... more and younger children are employed in them.” (l. c., p. 79, § 174).

[114.](#) “Small farmers never employ gangs.” “It is not on poor land, but on land which affords rent of from 40 to 50 shillings, that women and children are employed in the greatest numbers.” (l. c., pp. 17, 14.)

[115.](#) To one of these gentlemen the taste of his rent was so grateful that he indignantly declared to the Commission of Inquiry that the whole hubbub was only due to the name of the system. If instead of “gang” it were called “the Agricultural Juvenile Industrial Self-supporting Association,” everything would be all right.

[116.](#) “Gang work is cheaper than other work; that is why they are employed,” says a former gang-master (l. c., p. 17, § 14). “The gang-system is decidedly the cheapest for the farmer, and decidedly the worst for the children,” says a farmer (l. c., p. 16, § 3.)

[117.](#) “Undoubtedly much of the work now done by children in

gangs used to be done by men and women. More men are out of work now where children and women are employed than formerly.” (l. c., p. 43, n. 202.) On the other hand, “the labour question in some agricultural districts, particularly the arable, is becoming so serious in consequence of emigration, and the facility afforded by railways for getting to large towns that I (the “I” is the steward of a great lord) think the services of children are most indispensable,” (l. c., p. 80, n. 180.) For the “labour question” in English agricultural districts, differently from the rest of the civilised world, means the landlords’ and farmers’ question, viz., how is it possible, despite an always increasing exodus of the agricultural folk, to keep up a sufficient relative surplus population in the country, and by means of it keep the wages of the agricultural labourer at a minimum?

[118.](#) The “Public Health Report,” where in dealing with the subject of children’s mortality, the gang-system is treated in passing, remains unknown to the press, and, therefore, to the English public. On the other hand, the last report of the “Child. Empl. Comm.” afforded the press sensational copy always welcome. Whilst the Liberal press asked how the fine gentlemen and ladies, and the well-paid clergy of the State Church, with whom Lincolnshire swarms, could allow such a system to arise on their estates, under their very eyes, they who send out expressly missions to the Antipodes, “for the improvement of the morals of South Sea Islanders” — the more refined press confined itself to reflections on the coarse degradation of the agricultural population who are capable of selling their children into such slavery! Under the accursed

conditions to which these “delicate” people condemn the agricultural labourer, it would not be surprising if he ate his own children. What is really wonderful is the healthy integrity of character, he has, in great part, retained. The official reports prove that the parents, even in the gang districts, loathe the gang-system. “There is much in the evidence that shows that the parents of the children would, in many instances, be glad to be aided by the requirements of a legal obligation, to resist the pressure and the temptations to which they are often subject. They are liable to be urged, at times by the parish officers, at times by employers, under threats of being themselves discharged, to be taken to work at an age when ... school attendance ... would be manifestly to their greater advantage.... All that time and strength wasted; all the suffering from extra and unprofitable fatigue produced to the labourer and to his children; every instance in which the parent may have traced the moral ruin of his child to the undermining of delicacy by the over-crowding of cottages, or to the contaminating influences of the public gang, must have been so many incentives to feelings in the minds of the labouring poor which can be well understood, and which it would be needless to particularise. They must be conscious that much bodily and mental pain has thus been inflicted upon them from causes for which they were in no way answerable; to which, had it been in their power, they would have in no way consented; and against which they were powerless to struggle.” (l. c., p. xx., § 82, and xxiii., n. 96.)

[119.](#) Population of Ireland, 1801, 5,319,867 persons; 1811, 6,084,996; 1821, 6,869,544; 1831, 7,828,347; 1841,

8,222,664.

[120.](#) The result would be found yet more unfavourable if we went further back. Thus: Sheep in 1865, 3,688,742, but in 1856, 3,694,294. Pigs in 1865, 1,299,893, but in 1858, 1,409,883.

[121.](#) The data of the text are put together from the materials of the “Agricultural Statistics, Ireland, General Abstracts, Dublin,” for the years 1860, *et seq.*, and “Agricultural Statistics, Ireland. Tables showing the estimated average produce, &c., Dublin, 1866.” These statistics are official, and laid before Parliament annually.

Note to 2nd edition. The official statistics for the year 1872 show, as compared with 1871, a decrease in area under cultivation of 134,915 acres. An increase occurred in the cultivation of green crops, turnips, mangold-wurzel, and the like; a decrease in the area under cultivation for wheat of 16,000 acres; oats, 14,000; barley and rye, 4,000; potatoes, 66,632; flax, 34,667; grass, clover, vetches, rape-seed, 30,000. The soil under cultivation for wheat shows for the last 5 years the following stages of decrease: — 1868, 285,000 acres; 1869, 280,000; 1870, 259,000; 1871, 244,000; 1872, 228,000. For 1872 we find, in round numbers, an increase of 2,600 horses, 80,000 horned cattle, 68,609 sheep, and a decrease of 236,000 pigs.

[122.](#) The total yearly income under Schedule D. is different in this table from that which appears in the preceding ones, because of certain deductions allowed by law.

[123.](#) If the product also diminishes relatively per acre, it must not be forgotten that for a century and a half England has indirectly exported the soil of Ireland, without as much as allowing its cultivators the means for making up the constituents of the soil that had been exhausted.

[124.](#) As Ireland is regarded as the promised land of the “principle of population,” Th. Sadler, before the publication of his work on population, issued his famous book, “Ireland, its Evils and their Remedies.” 2nd edition, London, 1829. Here, by comparison of the statistics of the individual provinces, and of the individual counties in each province, he proves that the misery there is not, as Malthus would have it, in proportion to the number of the population, but in inverse ratio to this.

[125.](#) Between 1851 and 1874, the total number of emigrants amounted to 2,325,922.

[126.](#) According to a table in Murphy’s “Ireland Industrial, Political and Social,” 1870, 94.6 per cent. of the holdings do not reach 100 acres, 5.4 exceed 100 acres.

[127.](#) “Reports from the Poor Law Inspectors on the Wages of Agricultural Labourers in Dublin,” 1870. See also “Agricultural labourers (Ireland). Return, etc.” 8 March, 1861, London, 1862.

[128.](#) l. c., pp. 29, 1.

[129.](#) l. c., p. 12.

[130.](#) l. c., p. 12.

[131.](#) l. c., p. 25.

[132.](#) l. c., p. 27.

[133.](#) l. c., p. 25.

[134.](#) l. c., p. 1.

[135.](#) l. c., pp. 31, 32.

[136.](#) l. c., p. 25.

[137.](#) l. c., p. 30.

[138.](#) l. c., pp. 21, 13.

[139.](#) “Rept. of Insp. of Fact., 31st Oct., 1866,” p. 96.

[140.](#) The total area includes also peat, bogs, and waste land.

[141.](#) How the famine and its consequences have been deliberately made the most of, both by the individual landlords and by the English legislature, to forcibly carry out the agricultural revolution and to thin the population of Ireland down to the proportion satisfactory to the landlords, I shall show more fully in Vol. III. of this work, in the section on landed property. There also I return to the condition of the small farmers and the agricultural labourers. At present, only one quotation. Nassau W. Senior says, with other things, in his posthumous work, “Journals, Conversations and Essays relating to Ireland.” 2 vols. London, 1868; Vol. II., p. 282. “Well,” said Dr. G., “we have got our Poor Law and it is a great instrument for giving the victory to the landlords. Another, and a still more powerful instrument is emigration.... No friend to Ireland can wish the war to be prolonged [between the landlords and the small Celtic farmers] — still less, that it should end by the victory of the tenants. The

sooner it is over — the sooner Ireland becomes a grazing country, with the comparatively thin population which a grazing country requires, the better for all classes.” The English Corn Laws of 1815 secured Ireland the monopoly of the free importation of corn into Great Britain. They favoured artificially, therefore, the cultivation of corn. With the abolition of the Corn Laws in 1846, this monopoly was suddenly removed. Apart from all other circumstances, this event alone was sufficient to give a great impulse to the turning of Irish arable into pasture land, to the concentration of farms, and to the eviction of small cultivators. After the fruitfulness of the Irish soil had been praised from 1815 to 1846, and proclaimed loudly as by Nature herself destined for the cultivation of wheat, English agronomists, economists, politicians, discover suddenly that it is good for nothing but to produce forage. M. Léonce de Lavergne has hastened to repeat this on the other side of the Channel. It takes a “serious” man, à la Lavergne, to be caught by such childishness.

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Economic Manuscripts: Capital: Volume Two

Karl Marx

82–104 minutes

Capital Volume II

Part I: The Metamorphoses of Capital and their Circuits

Chapter 1: The Circuit of Money Capital

The circular movement [\[1\]](#) of capital takes place in three stages, which, according to the presentation in Volume I, form the following series:

First stage: The capitalist appears as a buyer on the commodity- and the labour-market; his money is transformed into commodities, or it goes through the circulation act $M \rightarrow C$.

Second Stage: Productive consumption of the purchased commodities by the capitalist. He acts as a capitalist producer of commodities; his capital passes through the process of production. The result is a commodity of more value than that of the elements entering into its production.

Third Stage: The capitalist returns to the market as a seller; his commodities are turned into money; or they pass through the circulation act $C \rightarrow M$.

Hence the formula for the circuit of money-capital is: $M \rightarrow C \dots P \dots C' \rightarrow M'$, the dots indicating that the process of circulation is interrupted, and C' and M' designating C and M increased by surplus-value.

The first and third stages were discussed in Book I only in so far as this was necessary for the understanding of the second stage, the process of production of capital. For this reason, the various forms which capital takes on in its different stages, and which now assumes and now strips off in the repetition of its circuit, were not considered. These forms are now the direct object of our study.

In order to conceive these forms in their pure state, one must first of all discard all factors which have nothing to do with the changing or building of forms as such. It is therefore taken for granted here not only that the commodities are sold at their values but also that this takes place under the same conditions throughout. Likewise disregarded therefore are any changes of value which might occur during the movement in circuits.

I. First Stage. $M \rightarrow C$ [\[2\]](#)

$M \rightarrow C$ represents the conversion of a sum of money into a sum of commodities; the purchaser transforms his money into commodities, the sellers transform their commodities into money. What renders this act of the general circulation of

commodities simultaneously a functionally definite section in independent circuit of some individual capital is primarily not the form of the act but its material content, the specific use-character of the commodities which change places with the money. These commodities are on the one hand means of production, on the other labour-power, material and personal factors in the production of commodities whose specific nature must of course correspond to the special kind of articles to be manufactured. If we call labour-power L , and the means of production MP , then the sum of commodities to be bought, C , is equal to $L + MP$, or more briefly $C <^L_{MP} M - C$, considered as to its substance is therefore represented by $M - C <^L_{MP}$, that is to say $M - C$ is composed of $M - L$ and $M - MP$. The sum of money M is separated into two parts, one of which buys labour-power, the other means of production. These two series of purchases belong to entirely different markets, the one to the commodity-market proper, the other to the labour-market.

Aside from this qualitative division of the sum of commodities into which M is transformed, the formula $M - C <^L_{MP}$ also represents a most characteristic quantitative relation.

We know that the value, or price, of labour-power is paid to its owner, who offers it for sale as a commodity, in the form of wages, that is to say as the price of a sum of labour containing surplus-labour. For instance if the daily value of labour-power is equal to the product of five hours labour valued at three shillings, this sum figures in the contract between the buyer and seller as the price, or wages, for, say, ten hours of labour.

If such a contract is made for instance with 50 labourers, they are supposed to work altogether 500 hours per day for the purchaser, and one half of this time, or 250 hours equal to 25 days of labour of 10 hours each, represents nothing but surplus labour. The quantity and the volume of the means of production to be purchased must be sufficient for the utilisation of this mass of labour.

$M - C^{<L}_{MP}$, then, does not merely express the qualitative relation indicating that a certain sum of money, say £422, is exchanged for a corresponding sum of means of production and labour-power, but also a quantitative relation between L , the part of the money spent for labour-power, and MP , the part spent for means of production. This relation is determined at the outset by the quantity of excess labour, of surplus-labour to be expended by a certain number of labourers.

If for instance in a spinning-mill the weekly wage of its 50 labourers amounts to £50, £372 must be spent for means of production, if this is the value of the means of production which a weekly labour of 3,000 hours, 1,500 of which are surplus-labour, transforms into yarn.

It is immaterial here how much additional value in the form of means of production is required in the various lines of industry by the utilisation of additional labour. The point merely is that the part of the money spent for means of production — the means of production bought in $M - MP$ — must absolutely suffice, i.e., must at the outset be calculated accordingly, must be procured in corresponding proportion. To put it another way, the quantity of means of production must suffice to

absorb the amount of labour, to be transformed by it into products. If the means of production at hand were insufficient, the excess labour at the disposal of the purchaser could not be utilised; his right to dispose of it is futile. If there were more means of production than available labour, they would not be saturated with labour, would not be transformed into products.

As soon as $M - C < L_{MP}$ is completed, the purchaser has at his disposal more than simply the means of production and labour-power required for the production of some useful article. He disposes of a greater capacity to render labour-power fluent, or a greater quantity of labour than is necessary for the replacement of the value of this labour-power, and he has at the same time the means of production requisite for the realisation or materialisation of this quantity of labour. In other words, he has at his disposal the factors making for the production of articles of a greater value than that of the elements of production — the factors of production of a mass of commodities containing surplus-value. The value advanced by him in money-form has now assumed a bodily form in which it can be incarnated as a value generating surplus-value (in the shape of commodities). In brief, value exists here in the condition or form of *productive capital*, which has the factor of creating value and surplus-value. Let us call capital in this form P.

Now the value of P is equal to that of $L + MP$, it is equal to M exchanged for L and MP. M is the same capital-value as P, only it has a different mode of existence, it is capital-value in the state or form of money — *money-capital*.

$M \rightarrow C^{<L}_{MP}$, or its general form $M \rightarrow C$, a sum of purchases of commodities, an act of the general circulation of commodities, is therefore at the same time — as a stage in the independent circuit of capital — a transformation of capital-value from its money-form into its productive form. More briefly, it is the transformation of *money-capital* into *productive capital*. In the diagram of the circuit which we are here discussing, money appears as the first depository of capital-value, and money-capital therefore represents the form in which capital is advanced.

Capital in the form of money-capital is in a state in which it can perform the functions of money, in the present case the functions of a universal means of purchase and universal means of payment. (The last-named inasmuch as labour-power though first bought is not paid for until it has been put into operation. To the extent that the means of production are not found ready on the market but have to be ordered first, money in $M \rightarrow MP$ likewise serves as a means of payment.) This capacity is not due to the fact that money-capital is capital but that it is money.

On the other hand capital-value in the form of money cannot perform any other functions but those of money. What turns the money-functions into functions of capital is the definite role they play in the movement of capital, and therefore also the interrelation of the stage in which these functions are performed with the other stages of the circuit of capital. Take, for instance, the case with which we are here dealing. Money is here converted into commodities the combination of which

represents the bodily form of productive capital, and this form already contains latently, potentially, the result of the process of capitalist production.

A part of the money performing the function of money-capital in $M \rightarrow C^{L_{MP}}$ assumes, by consummating the act of circulation, a function in which it loses its capital character but preserves its money-character. The circulation of money-capital M is divided into $M \rightarrow MP$ and $M \rightarrow L$, into the purchase of means of production and the purchase of labour-power. Let us consider the last-named process by itself. $M \rightarrow L$ is the purchase of labour-power by the capitalist. It is also the sale of labour-power — we may here say of labour, since the form of wages is assumed — by the laborer who owns it. What is $M \rightarrow C (= M \rightarrow L)$ for the buyer is here, as in every other purchase, $L \rightarrow M (= C \rightarrow M)$ for the seller (the laborer). It is the sale of his labour-power. This is the first stage of circulation, or the first metamorphosis, of the commodity (Buch I, Kap. III, 2a). [English edition: Ch. III, 2a — *Ed.*] It is for the seller of labour a transformation of his commodity into the money-form. The laborer spends the money so obtained gradually for a number of commodities required for the satisfaction of his needs, for articles of consumption. The complete circulation of his commodity therefore appears as $L \rightarrow M \rightarrow C$, that is to say first as $L \rightarrow M (= C \rightarrow M)$ and secondly as $M \rightarrow C$; hence in the general form of the simple circulation of commodities, $C \rightarrow M \rightarrow C$. Money is in this case merely a passing means of circulation, a mere medium in the exchange of one commodity for another.

M — L is the characteristic moment in the transformation of money-capital into productive capital, because it is the essential condition for the real transformation of value advanced in the form of money into capital, into a value producing surplus-value. M — MP is necessary only for the purpose of realising the quantity of labour bought in the process M — L, which was discussed from this point of view in Book I, Part II, under the head of “The Transformation of Money into Capital.” We shall have to consider the matter at this point also from another angle, relating especially to money-capital the form in which capital manifests itself.

Generally M — L is regarded as characteristic of the capitalist mode of production. However not at all for the reason given above, that the purchase of labour-power represents a contract of purchase which stipulates for the delivery of a quantity of labour in excess of that needed to replace the price of the labour-power, the wages; hence delivery of surplus-labour, the fundamental condition for the capitalisation of the value advanced, or for the production of surplus-value, which is the same thing. On the contrary, it is so regarded because of its form, since *money* in the form of wages buys labour, and this is the characteristic mark of the money system.

Nor is it the irrationality of the form which is taken as characteristic. On the contrary, one overlooks the irrational. The irrationality consists in the fact that labour itself as a value-creating element cannot have any value, nor can therefore any definite amount of labour have any value expressed in its price, in its equivalence to a definite quantity of money. But we know that wages are but a disguised form, a

form in which for instance the price of one day's labour-power presents itself as the price of the labour rendered fluent by this labour-power in one day. The value produced by this labour-power in, say, six hours of labour is thus expressed as the value of twelve hours' functioning or operation of the labour-power.

$M - L$ is regarded as the characteristic feature, the hallmark of the so-called money system, because labour there appears as the commodity of its owner, and money therefore as the buyer — hence on account of the money-relation (i.e., the sale and purchase of human activity). Money however appears very early as a buyer of so-called services, without the transformation of M into money-capital, and without any change in the general character of the economic system.

It makes no difference to money into what sort of commodities it is transformed. It is the universal equivalent of all commodities which show, if only by their prices, that ideally they represent a certain sum of money, anticipate their transformation into money, and do not acquire the form in which they may be converted into use-values for their owners until they change places with money. Once labour-power has come into the market as the commodity of its owner and its sale takes the form of payment for labour, assumes the shape of wages, its purchase and sale is no more startling than the purchase and sale of any other commodity. The characteristic thing is not that the commodity labour-power is purchasable but that labour-power appears as a commodity.

By means of $M - C^{<L}_{MP}$, the transformation of money-

capital into productive capital, the capitalist effects the combination of the objective and personal factors of production so far as they consist of commodities. If money is transformed into productive capital for the first time or if it performs for the first time the function of money-capital for its owner, he must begin by buying means of production, such as buildings, machinery, etc., before he buys any labour-power. For as soon as he compels labour-power to act in obedience to his sway, he must have means of production to which he can apply it as labour-power.

This is the capitalist's presentation of the case.

The labourer's case is as follows: The productive application of his labour-power is not possible until it is sold and brought into connection with means of production. Before its sale, labour-power exists therefore separately from the means of production, from the material conditions of its application. In this state of separation it cannot be used either directly for the production of use-values for its owner or for the production of commodities, by the sale of which he could live. But from the moment that as a result of its sale it is brought into connection with means of production, it forms part of the productive capital of its purchaser, the same as the means of production.

True, in the act $M \text{ --- } L$ the owner of money and the owner of labour-power enter only into the relation of buyer and seller, confront one another only as money-owner and commodity-owner. In this respect they enter merely into a money-relation. Yet at the same time the buyer appears also from the outset in the capacity of an owner of means of production, which are

the material conditions for the productive expenditure of labour-power by its owner. In other words, these means of production are in opposition to the owner of the labour-power, being property of another. On the other hand the seller of labour faces its buyer as labour-power of another which must be made to do his bidding, must be integrated into his capital, in order that it may really become productive capital. The class relation between capitalist and wage-laborer therefore exists, is presupposed from the moment the two face each other in the act $M \text{ — } L$ ($L \text{ — } M$ on the part of the laborer). It is a purchase and sale, a money-relation, but a purchase and sale in which the buyer is assumed to be a capitalist and the seller a wage-laborer. And this relation arises out of the fact that the conditions required for the realisation of labour-power, viz., means of subsistence and means of production, are separated from the owner of labour-power, being the property of another.

We are not concerned here with the origin of this separation. It exists as soon as $M \text{ — } L$ goes on. The thing which interests us here is this: If $M \text{ — } L$ appears here as a function of money-capital or money as the form of existence of capital, the sole reason that money here assumes the role of a means of paying for a useful human activity or service; hence by no means in consequence of the function of money as a means of payment. Money can be expended in this form only because labour-power finds itself in a state of separation from its means of production (including the means of subsistence as means of production of the labour-power itself), and because this separation can be overcome only by the sale of the labour-power to the owner of the means of production; because

therefore the functioning of labour-power, which is not at all limited to the quantity of labour required for the reproduction of its own price, is likewise the concern of its buyer. The capital-relation during the process of production arises only because it is inherent in the act of circulation, in the different fundamental economic conditions in which buyer and seller confront each other, in their class relation. It is not money which by its nature creates this relation; it is rather the existence of this relation which permits of the transformation of a mere money-function into a capital-function.

In the conception of money-capital (for the time being we deal with the latter only within the confines of the special function in which it faces us here) two errors run parallel to each other or cross each other. In the first place the functions performed by capital-value in its capacity as money-capital, which it can perform precisely owing to its money-form, are erroneously derived from its character as capital, whereas they are due only to the money-form of capital-value, to its form of appearance as money. In the second place, on the contrary, the specific content of the money-function, which renders it simultaneously a capital-function, is traced to the nature of money (money being here confused with capital), while the money function premises social conditions, such as are here indicated by the act $M - L$, which do not at all exist in the mere circulation of commodities and the corresponding circulation of money.

The purchase and sale of slaves is formally also a purchase and sale of commodities. But money cannot perform this function without the existence of slavery. If slavery exists,

then money can be invested in the purchase of slaves. On the other hand the mere possession of money cannot make slavery possible.

In order that the sale of one's own labour-power (in the form of the sale of one's own labour or in the form of wages) may constitute not an isolated phenomenon but a socially decisive premise for the production of commodities, in order that money-capital may therefore perform, on a social scale, the above-discussed function $M \rightarrow C^{<L}_{MP}$, historical processes are assumed by which the original connection of the means of production with labour-power was dissolved — processes in consequence of which the mass of the people, the labourers, have, as non-owners, come face to face with non-labourers as the owners of these means of production. It makes no difference in this case whether the connection before its dissolution was such in form that the laborer, being himself a means of production, belonged to the other means of production or whether he was their owner.

What lies back of $M \rightarrow C^{<L}_{MP}$ is distribution; not distribution in the ordinary meaning of a distribution of articles of consumption, but the distribution of the elements of production itself, the material factors of which are concentrated on one side, and labour-power, isolated, on the other.

The means of production, the material part of productive capital, must therefore face the laborer as such, as capital, before the act $M \rightarrow L$ can become a universal, social one.

We have seen on previous occasions [English edition: Karl Marx, *Capital*, Vol. I, Part VII, Moscow, 1954. — *Ed.*] that in its further development capitalist production, once it is established, not only reproduces this separation but extends its scope further and further until it becomes the prevailing condition. However, there is still another side to this question. In order that capital may be able to arise and take control of production, a definite stage in the development of trade is assumed. This applies therefore also to the circulation of commodities, and hence to the production of commodities; for no articles can enter circulation as commodities unless they are produced for sale, hence as commodities. But the production of commodities does not become the normal, dominant type of production until capitalist production serves as its basis.

The Russian landowners, who as a result of the so-called emancipation of the peasants are now compelled to carry on agriculture with the help of wage-labourers instead of the forced labour of serfs, complain about two things: First, about the lack of money-capital. They say for instance that comparatively large sums must be paid to wage-labourers before the crops are sold, and just then there is a dearth of ready cash, the prime condition. Capital in the form of money must always be available, particularly for the payment of wages, before production can be carried on capitalistically. But the landowners may take hope. Everything comes to those who wait, and in due time the industrial capitalist will have at his disposal not alone his own money but also that of others.

The second complaint is more characteristic. It is to the effect that even if one has money, not enough labourers are to be had

at any time. The reason is that the Russian farm-laborer, owing to the common ownership of land in the village community, has not yet been fully separated from his means of production and hence is not yet a “free wage-laborer” in the full sense of the word. But the existence of the latter on a social scale is a *sine qua non* for $M — C$, the conversion of money into commodities, to be able to represent the transformation of money-capital into productive capital.

It is therefore quite clear that the formula for the circuit of money-capital, $M — C \dots C' — M'$, is the matter-of-course form of the circuit of capital only on the basis of already developed capitalist production, because it presupposes the existence of a class of wage-labourers on a social scale. We have seen that capitalist production does not only create commodities and surplus-value, but also reproduces to an ever increasing extent the class of wage-labourers, into whom it transforms the vast majority of direct producers. Since the first condition for its realisation is the permanent existence of a class of wage-labourers, $M — C \dots P \dots C' — M'$ presupposes a capital in the form of productive capital, and hence the form of the circuit of productive capital.

II. Second Stage. Function of Productive Capital

The circuit of capital, which we have here considered, begins with the act of circulation $M — C$, the transmutation of money into commodities — purchase. Circulation must therefore be complemented by the antithetical metamorphosis $C — M$, the transformation of commodities into money — sale. But the

direct result of $M \rightarrow C^{<L}_{MP}$ is the interruption of the circulation of the capital-value advanced in the form of money. By the transformation of money-capital into productive capital the capital-value has acquired a bodily form in which it cannot continue to circulate but must enter into consumption, viz., into productive consumption. The use of labour-power, labour, can be materialised only in the labour-process. The capitalist cannot resell the laborer as a commodity because he is not his chattel slave and the capitalist has not bought anything except the right to use his labour-power for a certain time. On the other hand the capitalist cannot use this labour-power in any other way than by utilising means of production to create commodities with its help. The result of the first stage is therefore entrance into the second, the productive stage of capital.

This movement is represented by $M \rightarrow C^{<L}_{MP} \dots P$, in which the dots indicate that the circulation of capital is interrupted, while its circular movement continues, since it passes from the sphere of circulation of commodities into that of production. The first stage, the transformation of money-capital into productive capital, is therefore merely the harbinger and introductory phase of the second stage, the functioning of productive capital.

$M \rightarrow C^{<L}_{MP}$ presupposes that the individual performing this act not only has at his disposal values in any use-form, but also that he has them in the form of money, that he is the owner of money. But as the act consists precisely in giving away money, the individual can remain the owner of money

only in so far as the act of giving away implies a return of money. But money can return to him only through the sale of commodities. Hence the above act assumes him to be a producer of commodities.

M — L. The wage-laborer lives only by the sale of his labour-power. Its preservation — his preservation — requires daily consumption. Hence payment for it must be continuously repeated at rather short intervals in order that he may be able to repeat acts L — M — C or C — M — C, repeat the purchases needed for his self-preservation. For this reason the capitalist must always meet the wage-laborer in the capacity of a money-capitalist, and his capital as money-capital. On the other hand if the wage-labourers, the mass of direct producers, are to perform the act L — M — C, they must constantly be faced with the necessary means of subsistence in purchasable form, i.e., in the form of commodities. This state of affairs necessitates a high degree of development of the circulation of products in the form of commodities, hence also of the volume of commodities produced. When production by means of wage-labour becomes universal, commodity production is bound to be the general form of production. This mode of production, once it is assumed to be general, carries in its wake an ever increasing division of social labour, that is to say an ever growing differentiation of the articles which are produced in the form of commodities by a definite capitalist, ever greater division of complementary processes of production into independent processes. M — MP therefore develops to the same extent as M — L does, that is to say the production of means of production is divorced to that extent

from the production of commodities whose means of production they are. And the latter then stand opposed to every producer of commodities which he does not produce but buys for his particular process of production. They come from branches of production which, operated independently, are entirely divorced from his own, enter into his own branch as commodities, and must therefore be bought. The material conditions of commodity production face him more and more as products of other commodity producers, as commodities. And to the same extent the capitalist must assume the role of money-capitalist, in other words there is an increase in the scale on which his capital must assume the functions of money-capital.

On the other hand, the same conditions which give rise to the basic condition of capitalist production, the existence of a class of wage-workers, facilitate the transition of all commodity production to capitalist commodity production. As capitalist production develops, it has a disintegrating, resolvent effect on all older forms of production, which, designed mostly to meet the direct needs of the producer, transform only the excess produced into commodities. Capitalist production makes the sale of products the main interest, at first apparently without affecting the mode of production itself. Such was for instance the first effect of capitalist world commerce on such nations as the Chinese, Indians, Arabs, etc. But, secondly, wherever it takes root capitalist production destroys all forms of commodity production which are based either on the self-employment of the producers, or merely on the sale of the excess product as

commodities. Capitalist production first makes the production of commodities general and then, by degrees, transforms all commodity production into capitalist commodity production.

[\[3\]](#)

Whatever the social form of production, labourers and means of production always remain factors of it. But in a state of separation from each other either of these factors can be such only potentially. For production to go on at all they must unite. The specific manner in which this union is accomplished distinguishes the different economic epochs of the structure of society from one another. In the present case, the separation of the free worker from his means of production is the starting-point given, and we have seen how and under what conditions these two elements are united in the hands of the capitalist, namely, as the productive mode of existence of his capital. The actual process which the personal and material creators of commodities enter upon when thus brought together, the process of production, becomes therefore itself a function of capital, the capitalist process of production, the nature of which has been fully analysed in the first book of this work. Every enterprise engaged in commodity production becomes at the same time an enterprise exploiting labour-power. But only the capitalist production of commodities has become an epoch-making mode of exploitation, which, in the course of its historical development, revolutionises, through the organisation of the labour-process and the enormous improvement of technique, the entire structure of society in a manner eclipsing all former epochs.

The means of production and labour-power, in so far as they are forms of existence of advanced capital-value, are distinguished by the different roles assumed by them during the process of production in the creation of value, hence also of surplus-value, into constant and variable capital. Being different components of productive capital they are furthermore distinguished by the fact that the means of production in the possession of the capitalist remain his capital even outside of the process of production, while labour-power becomes the form of existence of an individual capital only within this process. Whereas labour-power is a commodity only in the hands of its seller, the wage-labourer, it becomes capital only in the hands of its buyer, the capitalist who acquires the temporary use of it. The means of production do not become the material forms of productive capital, or productive capital, until labour-power, the personal form of existence of productive capital, is capable of being embodied in them. Human labour-power is by nature no more capital than by means of production. They acquire this specific social character only under definite, historically developed conditions, just as only under such conditions the character of money is stamped upon precious metals, or that of money-capital upon money.

Productive capital, in performing its functions, consumes its own component parts for the purpose of transforming them into a mass of products of a higher value. Since labour-power acts merely as one of its organs, the excess of the product's value engendered by its surplus-labour over and above the value of productive capital's constituent elements is also the

fruit of capital. The surplus-labour of labour-power is the gratuitous labour performed for capital and thus forms surplus-value for the capitalist, a value which costs him no equivalent return. The product is therefore not only a commodity, but a commodity pregnant with surplus-value. Its value is equal to $P + s$, that is to say equal to the value of the productive capital P consumed in the production of the commodity plus the surplus values created by it. Let us assume that this commodity consists of 10,000 lbs. of yarn, and that means of production worth £372 and labour power worth £50 were consumed in the fabrication of this quantity of yarn. During the process of spinning, the spinners transmitted to the yarn the value of the means of production consumed by their labour, amounting to £372, and at the same time they created, in proportion with the labour-power expended by them, new value to the amount of, say, £128. The 10,000 lbs. of yarn therefore represent a value of £500.

III. Third Stage. $C' — M'$

Commodities become *commodity-capital* as a functional form of existence — stemming directly from the process of production itself — of capital-value which has already produced surplus-value. If the production of commodities were carried on capitalistically throughout society, all commodities would be elements of commodity-capital from the outset, whether they were crude iron, Brussels lace, sulphuric acid or cigars. The problem of what kinds of commodities, is one of the self-created lovely ills of scholastic political economy.

Capital in the form of commodities has to perform the function of commodities. The articles of which capital is composed are produced especially for the market and must be sold, transformed into money, hence go through the process C — M.

Suppose the commodity of the capitalist to consist of 10,000 lbs. of cotton yarn. If £372 represent the value of the means of production consumed in the spinning process, and new value to the amount of £128 has been created, the yarn has a value of £500, which is expressed in its price of the same amount.

Suppose further that this price is realised by the sale C — M.

What is it that makes of this simple act of all commodity circulation at the same time a capital-function? No change that takes place inside of it, neither in the use-character of the commodity — for it passes into the hands of the buyer as an object of use — nor in its value, for this value has not experienced any change of magnitude, but only of form. It first existed in the form of yarn, while now it exists in the form of money. Thus a substantial distinction is evident between the first stage M — C and the last stage C — M. There the advanced money functions as money-capital, because it is transformed by means of the circulation into commodities of a specific use-value. Here the commodities can serve as capital only to the extent that they bring this character with them in ready shape from the process of production before their circulation begins. During the spinning process, the spinners create yarn value to the amount of £128. Of this sum, say £50 represent to the capitalist merely an equivalent for his outlay for labour-power, while £78 — when the degree of

exploitation of labour-power is 156 per cent — form surplus-value. The value of the 10,000 lbs. of yarn therefore embodies first the value of the consumed productive capital P, the constant part of which amounts to £372 and the variable to £50, their sum being £422, equal to 8,440 lbs. of yarn. Now the value of the productive capital P is equal to C, the value of its constituent elements, which in the stage M — C confronted the capitalist as commodities in the hands of their sellers.

In the second place, however, the value of the yarn contains a surplus-value of £78, equal to 1,560 lbs. of yarn. C as an expression of the value of the 10,000 lbs. of yarn is therefore equal to C plus DC, or C plus an increment of C (equal to £78), which we shall call c, since it exists in the same commodity-form as now the original value C. The value of the 10,000 lbs. of yarn, equal to £500, is therefore represented by $C + c = C'$. What turns C, the expression of the value of 10,000 lbs. of yarn, into C' is not the absolute magnitude of its value (£500), for that is determined, as in the case of any other C standing for the expression of the value of some other sum of commodities, by the quantity of labour embodied in it. It is its relative value-magnitude, its value-magnitude as compared with that of capital P consumed in its production. This value is contained in it plus the surplus-value supplied by the productive capital. Its value is greater, exceeds that of the capital-value by this surplus-value c. The 10,000 lbs. of yarn are the bearers of the capital-value expanded, enriched by this surplus-value, and they are so by virtue of being the product of the capitalist process of production. C' expresses a value-relation, the relation of the value of the commodities produced

to that of the capital spent on their production, in other words, expresses the fact that its value is composed of capital-value and surplus-value. The 10,000 lbs. of yarn represent commodity capital, C' , only because they are a converted form of the productive capital P , hence in a connection which exists originally only in the circuit of this individual capital, or only for the capitalist who produced the yarn with the help of his capital. It is, so to say, only an internal, not an external relation that turns the 10,000 lbs. of yarn in their capacity of vehicles of value into a commodity-capital. They exhibit their capitalist birthmark not in the absolute magnitude of their value but in its relative magnitude, in the magnitude of their value as compared with that possessed by the productive capital embodied in them before it was transformed into commodities. If, then, these 10,000 lbs. of yarn are sold at their value of £500, this act of circulation, considered by itself, is identical with $C — M$, a mere transformation of an unchanging value from the form of a commodity into that of money. But as a special stage in the circuit of an individual capital, the same act is a realisation of the capital-value embodied in the commodity to the amount of £422 plus the surplus-value, likewise embodied in it, of £78. That is to say it represents $C' — M'$, the transformation of the commodity-capital from its commodity-form into the money form. [\[4\]](#)

The function of C' is now that of all commodities, viz.: to transform itself into money, to be sold, to go through the circulation stage $C — M$. So long as the capital, now expanded, remains in the form of commodity-capital, lies immovable in the market, the process of production is at rest.

The commodity-capital acts neither as a creator of products nor as a creator of value. A given capital-value will serve, in widely different degrees, as a creator of products and value, and the scale of reproduction will be extended or reduced commensurate with the particular speed with which that capital throws off its commodity-form and assumes that of money, or with the rapidity of the sale. It was shown in Book I that the degree of efficiency of any given capital is conditional on the potentialities of the productive process, which to a certain extent are independent of the magnitude of its own value. [English edition: Karl Marx, *Capital*, Vol. I, pp. 602-08. — *Ed.*] Here it appears that the process of circulation sets in motion new forces independent of the capital's magnitude of value and determining its degree of efficiency, its expansion and contraction.

The mass of commodities C', being the depository of the expanded capital, must furthermore pass in its entirety through the metamorphosis C' — M'. The quantity sold is here a main determinant. The individual commodity figures only as an integral part of the total mass. The £500 worth of value exists in the 10,000 lbs. of yarn. If the capitalist succeeds in selling only 7,440 lbs. at their value of £372, he has replaced only the value of his constant capital, the value of the expanded means of production. If he sells 8,440 lbs. he recovers only the value of the total capital advanced. He must sell more in order to realise some surplus-value, and he must sell the entire 10,000 lbs. in order to realise the surplus-value of £78 (1,560 lbs. of yarn). In £500 in money he receives merely an equivalent for the commodity sold. His transaction within the circulation is

simply $C - M$. If he had paid his labourers £64 in wages instead of £50 his surplus-value would only be £64 instead of £78, and the degree of exploitation would have been only 100 per cent instead of 156. But the value of the yarn would not change; only the relation between its component parts would be different. The circulation act $C - M$ would still represent the sale of 10,000 lbs. of yarn for £500, their value.

C' is equal to $C + c$ (or £422 at £78). C equals the value of P , the productive capital, and this equals the value of M , the money advanced in $M - C$, the purchase of the elements of production, amounting to £422 in our example. If the mass of commodities is sold at its value, then C equals £422 and c equals £78, the value of the surplus-product of 1,560 lbs. of yarn. If we call c , expressed in money, m , then $C' - M' = (C + c) - (M + m)$, and the circuit $M - C \dots P \dots C' - M'$, in its expanded form, is therefore represented by $M - C \overset{L}{\underset{MP}{\dots}} P \dots (C + c) - (M + m)$.

In the first stage the capitalist takes articles of consumption out of the commodity-market proper and the labour-market. In the third stage he throws commodities back, but only into one market, the commodity-market proper. However the fact that he extracts from the market, by means of his commodities, a greater value than he threw upon it originally is due only to the circumstance that he throws more commodity-value back upon it than he first drew out of it. He threw value M upon it and drew out of it the equivalent C ; he throws $C + c$ back upon it, and draws out of it the equivalent $M + m$.

M was in our example equal to the value of 8,440 lbs. of yarn.

But he throws 10,000 lbs. of yarn on the market, consequently he returns a greater value than he took from it. On the other hand he threw this increased value on the market only because through the exploitation of labour-power in the process of production he had created surplus-value (as an aliquot part of the product expressed in surplus-product). It is only by virtue of being the product of this process that the mass of commodities becomes commodity-capital, the bearer of the expanded capital-value. By performing $C' — M'$ the advanced capital-value as well as the surplus-value are realised. The realisation of both takes place simultaneously in a series of sales or in a lump sale of the entire mass of commodities which is expressed by $C' — M'$. But the same circulation act $C' — M'$ is different for capital-value and surplus-value, as it expresses for each of them a different stage of their circulation, a different section of the series of metamorphoses through which they must pass in the sphere of circulation. The surplus-value c came into the world only during the process of production. It appeared for the first time in the commodity-market, in the form of commodities. This is its first form of circulation, hence the act $c — m$ is its first circulation act, or its first metamorphosis, which remains to be supplemented by the antithetical act of circulation, or the reverse metamorphosis, $m — c$. [\[5\]](#)

It is different with the circulation which the capital-value C performs in the same circulation act $C' — M'$, and which constitutes for the circulation act $C — M$, in which C is equal to P , equal to the M originally advanced. Capital-value has opened its first circulation act in the form of M , money-

capital, and returns through the act $C \rightarrow M$ to the same form. It has therefore passed through the two antithetical stages of circulation, first $M \rightarrow C$, second $C \rightarrow M$, and finds itself once more in the form in which it can begin its circular movement anew. What for surplus-value constitutes the first transformation of the commodity-form into that of money, constitutes for capital-value in return, or retransformation, into its original money-form.

By means of $M \rightarrow C <^L_{MP}$ money capital is transformed into an equivalent mass of commodities, L and MP . These commodities no longer perform the function of commodities, of articles for sale. Their value is now in the hands of the capitalist who bought them; they represent the value of his productive capital P . And in the function of P , productive consumption, they are transformed into a kind of commodity differing materially from the means of production, into yarn, in which their value is not only preserved but increased, from £422 to £500. By means of this real metamorphosis, the commodities taken from the market in the first stage, $M \rightarrow C$, are replaced by commodities of different substance and value, which now must perform the function of commodities, must be transformed into money and sold. The process of production therefore appears to be only an interruption of the process of circulation of capital-value, of which up to that point only the first phase, $M \rightarrow C$, has been passed through. It passes through the second and concluding phase, $C \rightarrow M$, after C has been altered in substance and value. But so far as capital-value, considered by itself, is concerned, it has merely suffered an alteration of its use-form in the process of

production. It existed in the form of £422 worth of L and MP, while now it exists in the form of £422 worth of, or 8,440 lbs. of yarn. If we therefore consider merely the two circulation phases of capital-value, apart from its surplus-value, we find that it passes through 1) $M \rightarrow C$ and 2) $C \rightarrow M$, in which the second C has a different use-form but the same value as the first C. Hence it passes through $M \rightarrow C \rightarrow M$, a form of circulation which, because the commodity here changes place twice and in the opposite direction — transformation from money into commodities and from commodities into money — necessitates the return of the value advanced in the form of money to its money-form — its reconversion into money.

The same circulation act $C' \rightarrow M'$ that constitutes the second and concluding metamorphosis, a return to the money-form, for the capital-value advanced in money, represents for the surplus-value — borne along by the commodity-capital and simultaneously realised by its change into the money-form — its first metamorphosis, its transformation from the commodity- to the money-form, $C \rightarrow M$, its first circulation phase.

We have, then, two kinds of observations to make here. First, the ultimate reconversion of capital-value into its original money-form is a function of commodity-capital. Secondly, this function includes the first transformation of surplus-value from its original commodity-form to its money-form. The money-form, then, plays a double role here. On the one hand it is the form to which a value originally advanced in money returns, hence a return to the form of value which opened the process. On the other hand it is the first converted form of a

value which originally enters the circulation in commodity-form. If the commodities composing the commodity-capital are sold at their values, as we assume, then C plus c is transformed into M plus m , its equivalent. The realised commodity-capital now exists in the hands of the capitalist in this form: M plus m (£422 plus £78 = £500). Capital-value and surplus-value are now present in the form of money, the form of the universal equivalent.

At the conclusion of the process capital-value has therefore resumed the form in which it entered it, and as money-capital can now open and go through a new process. Just because the initial and final forms of this process are those of money-capital, M , we call this form of the circulation process the circuit of money-capital. It is not the form but merely the magnitude of the advanced value that is changed at the close.

M plus m is nothing but a sum of money of a definite magnitude, in this case £500. But as a result of the circulation of capital, as realised commodity-capital, this sum of money contains the capital-value and the surplus-value. And these values are now no longer inseparably united as they were in the yarn; they now lie side by side. Their sale has given both of them an independent money-form; 211/250 of this money represent the capital-value of £422 and 39/250 constitute the surplus-value of £78. This separation, effected by the realisation of the commodity-capital, has not only the formal content to which we shall refer presently. It becomes important in the process of the reproduction of capital, depending on whether m is entirely or partially or not at all lumped together with M , i.e., depending on whether or not it continues to

function as a component part of the advanced capital-value. Both m and M may pass through quite different processes of circulation.

In M' capital has returned to its original form M , to its money-form, a form however in which it is materialised as capital.

There is in the first place a difference of quantity. It was M , £422. It is now M' , £500, and this difference is expressed by $M \dots M'$, the quantitatively different extremes of the circuit, whose movement is indicated only by the three dots. $M' > M$, and $M' - M = s$, the surplus-value. But as a result of this circular movement $M \dots M'$ it is only M' which exists now; it is the product in which its process of formation has become extinct. M' now exists by itself, independently of the movement which brought it into existence. That movement is gone; M' is there in its place.

But M' , being M plus m , £500, composed of £422 advanced capital plus an increment of the same amounting to £78, represents at the same time a qualitative relation, although this qualitative relation itself exists only as a relation between the parts of one and the same sum, hence as a quantitative relation. M , the advanced capital, which is now once more present in its original form (£422), exists as realised capital. It has not only preserved itself but also realised itself as capital by being distinguished as such from m (£78), to which it stands in the same relation as to an increase *of its own*, to a fruit *of its own*, to an increment to which it has given birth itself. It has been realised as capital because it has been realised as a value which has created value. M' exists as a capital-relation. M no

longer appears as mere money, but expressly plays the part of money-capital, expressed as a self-expanded value, hence possessing the property of self-expansion, of hatching a higher value than it itself has. M became capital by virtue of its relation to the other part of M', which it has brought about, which has been effected by it as the cause, which is the consequence of it as the ground. Thus M' appears as the sum of values differentiated within itself, functionally (conceptually) distinguished within itself, expressing the capital-relation.

But this is expressed only as a result, without the intervention of the process of which it is the result.

Parts of value as such are not qualitatively different from one another, except in so far as they appear as values of different articles, of concrete things, hence in various use-forms and therefore as values of different commodities — a difference which does not originate with them themselves as mere parts of value. In money all differences between commodities are extinguished, because it is the equivalent form common to all of them. A sum of money in the amount of £500 consists solely of uniform elements of £1 each. Since the intermediate links of its origin are obliterated in the simple existence of this sum of money and every trace has been lost of the specific difference between the different component parts of capital in the process of production, there exists now only the distinction between the conceptual form of a **principal** equal to £422, the capital advanced, and an excess value of £78. Let M' be equal to, say, £110, of which £100 may be equal to M, the principal, and 10 equal to s, the surplus-value. There is an absolute

homogeneity, an absence of conceptual distinctions, between the two constituent parts of the sum of £110. Any £10 of this sum always constitute $1/11$ of the total sum of £110, whether they are $1/10$ of the advanced principal of £100 or the excess of £10 above it. Principal and excess sum, capital and surplus-sum, may therefore be expressed as fractional parts of the total sum. In our illustration, $10/11$ form the principal, or the capital, and $1/11$ the surplus sum. In its money-expression realised capital appears therefore at the end of its process as an irrational expression of the capital-relation.

True, this applies also to C' (C plus c). But there is this difference: that C' , of which C and c are only proportional value-parts of the same homogeneous mass of commodities, indicates its origin P , whose immediate product it is, while in M' , a form derived directly from circulation, the direct relation to P is obliterated.

The irrational distinction between the principal and the incremental sum, which is contained in M' , so far as that expresses the result of the movement $M \dots M'$, disappears as soon as it once more functions actively as money-capital and is therefore not fixed as a money-expression of expanded industrial capital. The circuit of capital can never begin with M' (although M' now performs the function of M). It can begin only with M , that is to say it can never begin as an expression of the capital-relation, but only as a form of advance of capital-value. As soon as the £500 are once more advanced as capital, in order again to produce s , they constitute a point of departure, not one of return. Instead of a capital of £422, a capital of £500 is now advanced. It is more money than

before, more capital-value, but the relation between its two constituent parts has disappeared. In fact a sum of £500 instead of the £422 might originally have served as capital.

It is not an active function of money-capital to appear as M' ; to appear as M' is rather a function of C' . Even in the simple circulation of commodities, first in $C_1 — M$, secondly in $M — C_2$, money M does not figure actively until the second act, $M — C_2$. Its appearance in the form of M is only the result of the first act, by virtue of which it only then appears as a converted form of C_1 . True, the capital-relation contained in M' , the relation of one of its parts as the capital-value to the other as its value increment, acquires functional importance in so far as, with the constantly repeated circuit $M \dots M'$, M' splits into two circulations, one of them a circulation of capital, the other of surplus-value. Consequently these two parts perform not only quantitatively but also qualitatively different functions, M others than m . But considered by itself, the form $M \dots M'$ does not include what the capitalist consumes, but explicitly only the self-expansion and accumulation, so far as the latter expresses itself above all as a periodical augmentation of ever renewed advances of money-capital.

Although M' , equal to M plus m , is the irrational form of capital, it is at the same time only money-capital in its realised form, in the form of money which has generated money. But this is different from the function of money-capital in the first stage, $M — C^{<L}_{MP}$. In the first stage, M circulates as money. It assumes the functions of money-capital because only in its money state can it perform a money-function, can it transform

itself into the elements of P, into L and MP, which stand opposed to it as commodities. In this circulation act it functions only as money. But as this act is the first stage of capital-value in process, it is simultaneously a function of money-capital, by virtue of the specific use-form of the commodities L and MP which are bought. M' on the other hand, composed of M, the capital-value, and m, the surplus-value begotten of M, stands for self-expanded capital-value — the purpose and the outcome, the function of the total circuit of capital. The fact that it expresses this outcome in the form of money, as realised money-capital, does not derive from its being the money-form of capital, *money-capital*, but on the contrary from its being *money-capital*, capital in the form of money, from capital having opened the process in this form, from its having been advanced in the money-form. Its reconversion into the money-form is, as we have seen, a function of commodity-capital C', not of money-capital. As for the difference between M and M', it (m) is simply the money-form of c, the increment of C. M' is composed of M plus m only because C' was composed of C plus c. In C' therefore this difference and the relation of the capital-value to the surplus-value generated by it is present and expressed before both of them are transformed into M', into a sum of money in which both parts of the value come face to face with each other independently and may, therefore, be employed in separate and distinct functions.

M' is only the result of the realisation of C'. Both M' and C' are merely different forms of self-expanded capital-value, one of them the commodity-form, the other the money-form. Both of

them have this in common: that they are self-expanded capital-value. Both of them are materialised capital, because capital-value as such exists here together with the surplus-value, the fruit obtained through it and differing from it, although this relation is expressed only in the irrational form of the relation between two parts of a sum of money or of a commodity-value. But as expressions of capital in relation and contradistinction to the surplus-value produced by it, hence as expressions of self-expanded value, M' and C' are the same and express the same thing, only in different forms. They do not differ as money-capital and commodity-capital but as money and commodities. In so far as they represent self-expanded value, capital acting as capital, they only express the result of the functioning of productive capital, the only function in which capital-value generates value. What they have in common is that both of them, money-capital as well as commodity-capital, are modes of existence of capital. The one is capital in money-form, the other in commodity-form. The specific functions that distinguish them cannot therefore be anything else but differences between the functions of money and of commodities. Commodity-capital, the direct product of the capitalist process of production, is reminiscent of its origin and is therefore more rational and less incomprehensible in form than money-capital, in which every trace of this process has vanished, as in general all special use-forms of commodities disappear in money. It is therefore only when M' itself functions as commodity-capital, when it is the direct product of a productive process instead of being the converted form of this product, that it loses its bizarre form, that is to say,

in the production of the money material itself. In the production of gold for instance the formula would be $M \text{ — } C^{<L}_{MP} \dots P \dots M'$ (M plus m), where M' would figure as a commodity product, because P furnishes more gold than was advanced for the elements of production of the gold in the first M , the money-capital. In this case the irrational nature of the expression $M \dots M'$ (M plus m) disappears. Here a part of a sum of money appears as the mother of another part of the same sum of money.

IV. The Circuit as a Whole

We have seen that the process of circulation is interrupted at the end of its first phase, $M \text{ — } C^{<L}_{MP}$, by P , in which the commodities L and MP bought in the market are consumed as the material and value components of productive capital. The product of this consumption is a new commodity, C' , altered in respect of substance and value. The interrupted process of circulation, $M \text{ — } C$, must be completed by $C \text{ — } M$. But the bearer of this second and concluding phase of circulation is C' , a commodity different in substance and value from the original C . The circulation series therefore appears as 1) $M \text{ — } C_1$; 2) $C'_2 \text{ — } M'$, where in the second phase of the first commodity, C_1 , another commodity of greater value and different use-form, C'_2 , is substituted during the interruption caused by the functioning of P , the production of C' from the elements of C , the forms of existence of productive capital P . However, the first form of appearance in which capital faced us (Buch. I,

Kap. IV, 1), [English edition: Ch. IV. — *Ed.*] viz., $M — C — M'$ (extended: 1) $M — C_1$; 2) $C_1 — M'$) shows the same commodity twice. Both times it is the same commodity into which money is transformed in the first phase and reconverted into more money in the second phase. In spite of this essential difference, both circulations share this much: that in their first phase money is transformed into commodities, and in the second commodities into money, that the money spent in the first phase returns in the second. On the one hand both have in common this reflux of the money to its starting-point, on the other hand also the excess of the returning money over the money advanced. To that extent the formula $M — C ... C' — M'$ is contained in the general formula $M — C — M'$.

It follows furthermore that each time equally great quantities of simultaneously existing values face and replace each other in the two metamorphoses $M — C$ and $C' — M'$ belonging in circulation. The change in value pertains exclusively to the metamorphosis P , the process of production, which thus appears as a real metamorphosis of capital, as compared with the merely metamorphosis of circulation.

Let us now consider the total movement, $M — C ... P ... C' — M'$, or, $M — C <^L_{MP} ... P ... C' (C + c) — M' (M + m)$, its more expanded form. Capital here appears as a value which goes through a series of interconnected, interdependent transformations, a series of metamorphoses which form just as many phases, or stages, of the process as a whole. Two of these phases belong in the sphere of circulation, one of them in that of production. In each one of these phases capital-value

has a different form for which there is a correspondingly different, special function. Within this movement the advanced value does not only preserve itself but grows, increases in magnitude. Finally, in the concluding stage, it returns to the same form which it had at the beginning of the process as a whole. This process as a whole constitutes therefore the process of moving in circuits.

The two forms assumed by capital-value at the various stages of its circulation are those of *money-capital* and *commodity-capital*. The form pertaining to the stage of production is that of *productive capital*. The capital which assumes these forms in the course of its total circuit and then discards them and in each of them performs the function corresponding to the particular form, is *industrial capital*, industrial here in the sense it comprises every branch of industry run on a capitalist basis.

Money-capital, commodity-capital and productive capital, do not therefore designate independent kinds of capital whose functions form the content of likewise independent branches of industry separated from one another. They denote here only special functional forms of industrial capital, which assumes all three of them one after the other.

Capital describes its circuit normally only so long as its various phases pass uninterruptedly into one another. If capital stops short in the first phase M — C, money-capital assumes the rigid form of a hoard; if it stops in the phase of production, the means of production lie without functioning on the one side, while labour-power remains unemployed on the other;

and if capital stops short in the last phase C' — M', piles of unsold commodities accumulate and clog the flow of circulation.

However, it is in the nature of things that the circuit itself necessitates the fixation of capital for certain lengths of time in its various phases. In each of its phases industrial capital is tied up with a definite form: money-capital, productive capital, commodity-capital. It does not acquire the form in which it may enter a new transformation phase until it has performed the function corresponding to each particular form. To make this plain, we have assumed in our illustration that the capital-value of the quantity of commodities created at the stage of production is equal to the total sum of the value originally advanced in the form of money; or, in other words, that the entire capital-value advanced in the form of money passes on in bulk from one stage to the next. But we have seen (Buch I, Kap. VI) [English edition: Ch. VIII. — *Ed.*] that a part of constant capital, the labour instruments proper (e.g., machinery), continually serve anew, with more or less numerous repetitions of the same process of production, hence transfer their values piecemeal to the products. It will be seen later to what extent this circumstance modifies the circular movement of capital. For the present the following suffices: In our illustration the value of productive capital amounting to £422 contained only the average wear and tear of factory buildings, machinery, etc., that is to say only that part of value which they transferred to the yarn in the transformation of 10,600 lbs. of cotton into 10,000 lbs. of yarn, which represented the product of one week's spinning of 60 hours. In

the means of production, into which the advanced constant capital of £372 was transformed, the instruments of labour, buildings, machinery, etc., figured as if they had only been rented in the market at a weekly rate. But this does not change the gist of the matter in any way. We have but to multiply the quantity of yarn produced in one week, i.e., 10,000 lbs. of yarn, by the number of weeks contained in a certain number of years, in order to transfer to the yarn the entire value of the instruments of labour bought and consumed during this period. It is then plain that the advanced money-capital must first be transformed into these instruments, hence must have gone through the first phase $M \rightarrow C$ before it can function as productive capital P . And it is likewise plain in our illustration that the capital value of £422, embodied in the yarn during the process of production, cannot be part of the value of the 10,000 lbs. of yarn and enter the circulation phase $C' \rightarrow M'$ until it is ready. It cannot be sold until it has been spun.

In the general formula the product P is regarded as a material thing different from the elements of the productive capital, as an object existing apart from the process of production and having a use-form different from that of the elements of production. This is always the case when the result of the productive process assumes the form of a thing, even when a part of the product re-enters the resumed production as one of its elements. Grain for instance serves as seed for its own production, but the product consists only of grain and hence has a shape different from those of related elements such as labour-power, implements, fertiliser. But there are certain independent branches of industry in which the product of the

productive process is not a new material product, is not a commodity. Among these only the communications industry, whether engaged in transportation proper, of goods and passengers, or in the mere transmission of communications, letters, telegrams, etc., is economically important.

A. Chuprov [\[6\]](#) says on this score:

“The manufacturer may first produce articles and then look for consumers”

[his product, thrust out of the process of production when finished, passes into circulation as a commodity separated from it].

“Production and consumption thus appear as two acts separated in space and time. In the transportation industry, which does not create any new products but merely transfer men and things, these two acts coincide; its services” [change of place] “are consumed the moment they are produced. For this reason the area within which railways can sell their services extends at best 50 versts (53 kilometres) on either side of their tracks.”

The result, whether men or goods are transported, is a change in their whereabouts. Yarn, for instance, may now be in India instead of in England, where it was produced.

However, what the transportation industry sells is change of location. The useful effect is inseparably connected with the process of transportation, i.e., the productive process of the transport industry. Men and goods travel together with the means of transportation, and their traveling, this locomotion,

constitutes the process of production effected by these means. The useful effect can be consumed only during this process of production. It does not exist as a utility different from this process, a use-thing which does not function as an article of commerce, does not circulate as a commodity, until after it has been produced. But the exchange-value of this useful effect is determined, like that of any other commodity, by the value of the elements of production (labour-power and means of production) consumed in it plus the surplus-value created by the surplus-labour of the labourers employed in transportation. This useful effect also entertains the very same relations to consumption that other commodities do. If it is consumed individually its value disappears during its consumption; if it is consumed productively so as to constitute by itself a stage in the production of the commodities being transported, its value is transferred as an additional value to the commodity itself. The formula for the transport industry would therefore be $M - C^{<L}_{MP} \dots P - M'$, since it is the process of production itself that is paid for and consumed, not a product separate and distinct from it. Hence this formula has almost the same form as that of the production of precious metals, the only difference being that in this case M' represents the converted form of the useful effect created during the process of production, and not the bodily form of the gold or silver produced in this process and extruded from it.

Industrial capital is the only mode of existence of capital in which not only the appropriation of surplus-value, or surplus-product, but simultaneously its creation is a function of capital. Therefore with it the capitalist character of production

is a necessity. Its existence implies the class antagonism between capitalists and wage-labourers. To the extent that it seizes control of social production, the technique and social organisation of the labour-process are revolutionised and with them the economico-historical type of society. The other kinds of capital, which appeared before industrial capital amid conditions of social production that have receded into the past or are now succumbing, are not only subordinated to it and the mechanism of their functions altered in conformity with it, but move solely with it as their basis, hence live and die, stand and fall with this basis. Money-capital and commodity-capital, so far as they function as vehicles of particular branches of business, side by side with industrial capital, are nothing but modes of existence of the different functional forms now assumed, now discarded by industrial capital in the sphere of circulation — modes which, due to social division of labour, have attained independent existence and been developed one-sidedly.

The circuit $M \dots M'$ on the one hand intermingles with the general circulation of commodities, proceeds from it and flows back into it, is a part of it. On the other hand it forms an independent movement of the capital-value for the individual capitalist, a movement of its own which takes place partly within the general circulation of commodities, partly outside of it, but which always preserves its independent character. First, because its two phases that take place in the sphere of circulation, $M \longrightarrow C$ and $C' \longrightarrow M'$, being phases of the movement of capital, have functionally definite characters. In $M \longrightarrow C$, C is materially determined as labour-power and

means of production; in $C' — M'$ the capital-value is realised plus the surplus-value. Secondly, because P, the process of production, embraces productive consumption. Thirdly, because the return of the money to its starting-point makes of the movement $M ... M'$ a circuit complete in itself.

Every individual capital is therefore, on the one hand, in its two circulation-halves $M — C$ and $C' — M'$, an agent of the general circulation of commodities, in which it either functions or lies concatenated as money or as a commodity, thus forming a link in the general chain of metamorphoses taking place in the world of commodities. On the other hand it describes within the general circulation its own independent circuit in which the sphere of production forms a transitional stage and in which this capital returns to its starting-point in the same form in which it left that point. Within its own circuit, which includes its real metamorphosis in the process of production, it changes at the same time the magnitude of its value. It returns not simply as money-value, but as augmented, increased money-value.

Let us finally consider $M — C ... P ... C' — M'$ as a special form of the circular course of capital, alongside the other forms which we shall analyse later. We shall find that it is distinguished by the following features:

1. It appears as the circuit of *money-capital*, because industrial capital in its *money-form*, as money-capital, forms the starting-point and the point of return of its total process. The formula itself expresses the fact that the money is not expended here as money but is merely advanced, hence is merely the money-

form of capital, money-capital. It expresses furthermore that exchange-value, not use-value, is the determining aim of this movement. Just because the money-form of value is the independent, tangible form in which value appears, the form of circulation $M \dots M'$, the initial and terminal points of which are real money, expresses most graphically the compelling motive of capitalist production — money-making. The process of production appears merely as an unavoidable intermediate link, as a necessary evil for the sake of money-making. All nations with a capitalist mode of production are therefore seized periodically by a feverish attempt to make money without the intervention of the process of production.

2. The stage of production, the function of P , represents in this circuit an interruption between the two phases of circulation $M \text{ — } C \dots C' \text{ — } M'$, which in its turn represents only the intermediate link in the simple circulation $M \text{ — } C \text{ — } M'$. The process of production appears in the form of a circuit-describing process, formally and explicitly as that which it is in the capitalist mode of production, as a mere means of expanding the advanced value, hence enrichment as such as the purpose of production.

3. Since the series of phases is opened by $M \text{ — } C$, the second link of the circulation is $C' \text{ — } M'$. In other words, the starting-point is M , the money-capital that is to be self-expanded; the terminal point is M' , the self-expanded money-capital M plus m , in which M figures as realised capital along with its offspring m . This distinguishes the circuit of M from that of the two other circuits P and C' , and does so in two ways. On the one hand by the money-form of the two extremes. And

money is the independent, tangible form of existence of value, the value of the product in its independent value-form, in which every trace of the use-value of the commodities has been extinguished. On the other hand the form $P \dots P$ does not necessarily become $P \dots P'$ (P plus p), and in the form $C \dots C'$ no difference whatever in value is visible between the two extremes. It is therefore characteristic of the formula $M \longrightarrow M'$ that for one thing capital-value is its starting-point and expanded capital-value its point of return, so that the advance of capital-value appears as the means and expanded capital-value as the end of the entire operation; and that for another thing this relation is expressed in money-form, in the independent value-form, hence money-capital as money begetting money. The generation of surplus-value by value is not only expressed as the Alpha and Omega of the process, but explicitly in the form of glittering money.

4. Since M' , the money-capital realised as a result of $C' \longrightarrow M'$, the complementary and concluding phase of $M \longrightarrow C$, has absolutely the same form as that in which it began its first circuit, it can, as soon as it emerges from the latter, begin the same circuit over again as an increased (accumulated) money-capital; $M' = M + m$. And at least it is not expressed in the form $M \dots M'$ that, in the repetition of the circuit, the circulation of m separates from that of M . Considered in its one-time form, formally, the circuit of money-capital expresses therefore simply the process of self-expansion and of accumulation. Consumption is expressed in it only as productive consumption, by $M \longrightarrow C^{<L}_{MP}$, and it is only this consumption that is included in this circuit of individual

capital. $M \rightarrow L$ is $L \rightarrow M$ or $C \rightarrow M$ on the part of the labourer. It is therefore the first phase of circulation which brings about his individual consumption, thus: $L \rightarrow M \rightarrow C$ (means of subsistence). The second phase $M \rightarrow C$, no longer falls within the circuit of individual capital, but is initiated and premised by it, since the labourer must above all live, hence maintain himself by individual consumption, in order to always be in the market as material that the capitalist can exploit. But this consumption itself is here only assumed as a condition for the productive consumption of labour-power by capital, hence only to the extent that the worker maintains and reproduces himself as labour-power by means of his individual consumption. However the MP, the commodities proper which enter into the circuit of capital, are nutriment for the productive consumption only. The act $L \rightarrow M$ promotes the individual consumption of the labourer, the transformation of the means of subsistence into his flesh and blood. True, the capitalist must also be there, must also live and consume to be able to perform the function of a capitalist. To this end, he has, indeed, to consume only as much as the labourer, and that is all this form of the circulation process presupposes. But even this is not formally expressed, since the formula concludes with M' , i.e., a result which can at once resume its function as money-capital, now augmented.

$C' \rightarrow M'$ directly contains the sale of C' ; but $C' \rightarrow M'$, a sale on the one part, is $M \rightarrow C$, a purchase, on the other part, and in the last analysis a commodity is bought only for its use-value, in order to enter (leaving intermediate sales out of consideration) the process of consumption, whether this is

individual or productive, according to the nature of the article bought. But this consumption does not enter the circuit of individual capital, the product of which is C' . This product is eliminated from the circuit precisely because it is a commodity for sale. C' is expressly designed for consumption by others than the producer. Thus we find that certain exponents of the mercantile system (which is based on the formula $M — C \dots P \dots C' — M'$) deliver lengthy sermons to the effect that the individual capitalist should consume only as much as the labourer, that the nation of capitalists should leave the consumption of their own commodities, and the consumption process in general, to the other, less intelligent nations but that they themselves should make productive consumption their life's task. These sermons frequently remind one in form and content of analogous ascetic expostulations of the fathers of the church.

Capital's movement in circuits is therefore the unity of circulation and production; it includes both. Since the two phases $M — C$ and $C' — M'$ are acts of circulation, the circulation of capital is a part of the general circulation of commodities. But as functionally they are definite sections, stages in capital's circuit, which pertains not only to the sphere of circulation but also to that of production, capital goes through its own circuit in the general circulation of commodities. The general circulation of commodities serves capital in the first stage as a means of assuming that shape in which it can perform the function of productive capital; in the second stage it serves to strip off the commodity-function in which capital cannot renew its circuit; at the same time it

opens up to capital the possibility of separating its own circuit from the circulation of the surplus-value that accrued to it.

The circuit made by money-capital is therefore the most one-sided, and thus the most striking and typical form in which the circuit of industrial capital appears, the capital whose aim and compelling motive — the self-expansion of value, the making of money, and accumulation — is thus conspicuously revealed (buying to sell dearer). Owing to the fact that the first phase is $M — C$ it is also revealed that the constituents of productive capital originate in the commodity-market, and in general that the capitalist process of production depends on circulation, on commerce. The circuit of money-capital is not merely the production of commodities; it is itself possible only through circulation and presupposes it. This is plain, if only from the fact that the form M belonging in circulation appears as the first and pure form of advanced capital-value, which is not the case in the other two circuit forms.

The money-capital circuit always remains the general expression of industrial capital, because it always includes the self-expansion of the advanced value. In $P \dots P$, the money-expression of capital appears only as the price of the elements of production, hence only as a value expressed in money of account and is fixed in this form in book-keeping.

$M \dots M'$ becomes a special form of the industrial capital circuit when newly active capital is first advanced in the form of money and then withdrawn in the same form, either in passing from one branch of industry to another or in retiring industrial capital from a business. This includes the functioning as

capital of the surplus-value first advanced in the form of money, and becomes most evident when surplus-value functions in some other business than the one in which it originated. $M \dots M'$ may be the first circuit of a certain capital; it may be the last; it may be regarded as the form of the total social capital; it is the form of capital that is newly invested, either as capital recently accumulated in the form of money, or as some old capital which is entirely transformed into money for the purpose of transfer from one branch of industry to another.

Being a form always contained in all circuits, money-capital performs this circuit precisely for that part of capital which produces surplus-value, viz., variable capital. The normal form of advancing wages is payment in money; this process must be renewed in comparatively short intervals, because the labourer lives from hand to mouth. The capitalist must therefore always confront the labourer as money-capitalist, and his capital as money-capital. There can be no direct or indirect balancing of accounts in this case such as we find in the purchase of means of production and in the sale of produced commodities (so that the greater part of the money-capital actually figures only in the form of commodities, money only in the form of money of account and finally in cash only in the balancing of accounts). On the other hand, a part of the surplus-value arising out of variable capital is spent by the capitalist for his individual consumption, which pertains to the retail trade and, however circuitous the route may be, this part is always spent in cash, in the money-form of surplus-value. Variable capital always appears anew as money-capital invested in wages ($M - L$)

and m as surplus-value to defray the cost of individual consumption of the capitalist. Hence M , advanced variable capital-value, and m , its increment, are necessarily held in the form of money to be spent in this form.

The formula $M — C \dots P \dots C' — M'$, with its result $M' = M + m$, is deceptive in form, is illusory in character, owing to the existence of the advanced and self-expanded value in its equivalent form, money. The emphasis is not on the self-expansion of value but on the *money-form* of this process, on the fact that more value in money-form is finally drawn out of the circulation than was originally advanced to it; hence on the multiplication of the mass of gold and silver belonging to the capitalist. The so-called monetary system is merely an expression of the irrational form $M — C — M'$, a movement which takes place exclusively in circulation and therefore can explain the two acts $M — C$ and $C — M'$ in no other way than as a sale of C above its value in the second act and therefore as C drawing more money out of the circulation than was put into it by its purchase. On the other hand $M — C \dots P \dots C' — M'$, fixed as the exclusive form, constitutes the basis of the more highly developed mercantile system, in which not only the circulation of commodities but also their production appears as a necessary element.

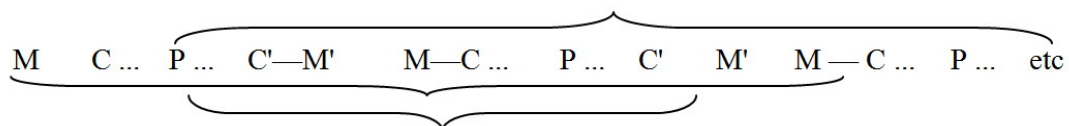
The illusory character of $M — C \dots P \dots C' — M'$ and the correspondingly illusory interpretation exists whenever this form is fixed as occurring once, not as fluent and ever renewed; hence whenever this form is considered not as one of the forms of the circuit but as its exclusive form. But it itself points toward other forms.

In the first place this entire circuit is premised on the capitalist character of the process of production, and therefore considers this process together with the specific social conditions

brought about by it as the basis. $M - C = M - C^{<L}_{MP}$; but $M - L$ assumes the existence of the wage-labourer, and hence the means of production as part of productive capital. It assumes therefore that the process of labour and self-expansion, the process of production, is a function of capital.

In the second place, if $M \dots M'$ is repeated, the return to the money-form appears just as evanescent as the money-form in the first stage. $M - C$ disappears to make room for P . The constantly recurrent advance in the form of money and its constant return in the form of money appear merely as fleeting moments in the circuit.

In the third place



Beginning with the second repetition of the circuit, the circuit $P \dots C' - M'$. $M - C \dots P$ appears before the second circuit of M is completed, and all subsequent circuits may thus be considered under the form of $P \dots C' - M - C \dots P$, so that $M - C$, being the first phase of the first circuit, is merely the passing preparation for the constantly repeated circuit of the productive capital. And this indeed is so in the case of industrial capital invested for the first time in the form of money-capital.

On the other hand before the second circuit of P is completed,

the first circuit, that of commodity-capital, $C' — M'.M — C ... P ... C'$ (abridged $C' ... C'$) has already been made. Thus the first form already contains the other two, and the money-form thus disappears, so far as it is not merely an expression of value but an expression of value in the equivalent form, in money.

Finally, if we consider some newly invested individual capital describing for the first time the circuit $M — C ... P ... C' — M'$, then $M — C$ is the preparatory phase, the forerunner of the first process of production gone through by this individual capital. This phase $M — C$ is consequently not presupposed but rather called for or necessitated by the process of production. But this applies only to this individual capital. The general form of the circuit of industrial capital is the *circuit of money-capital*, whenever the capitalist mode of production is taken for granted, hence in social conditions determined by capitalist production. Therefore the capitalist process of production is assumed as a pre-condition, if not in the first circuit of the money-capital of a newly invested industrial capital, then outside of it. The continuous existence of this process of production presupposes the constantly renewed circuit $P ... P$. Even in the first stage, $M — C \xrightarrow{I} MP$, this premise plays a part, for this assumes on the one hand the existence of the class of wage-labourers; and then, on the other, that which is $M — C$, the first stage, for the buyer of means of production, is $C' — M'$ for their seller; hence C' presupposes commodity-capital, and thus the commodities themselves as a result of capitalist production, and thereby the function of productive capital.

Notes

1. From Manuscript II. — *F.E.*
 2. Beginning of Manuscript VII, started July 1878.
 3. End of Manuscript VII. Beginning of Manuscript VI. — *F.E.*
 4. End of Manuscript VI. Beginning of Manuscript V. — *F.E.*
 5. This is true no matter how we separate capital-value and surplus-value. 10,000 lbs. of yarn contain 1,560 lbs., or £78 worth of surplus-value; likewise, one lb., or one shilling's worth of yarn, contains 2.496 ounces, or 1.872 pence worth, of surplus-value.
 6. A. Chuprov, *Railroading*, Moscow, 1875, pp. 69 and 70.
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Economic Manuscripts: Capital, Vol.3, Chapter 9

Karl Marx

42–53 minutes

Capital Vol. III Part II

Conversion of Profit into Average Profit

Chapter 9. Formation of a General Rate of Profit (Average Rate of Profit) and Transformation of the Values of Commodities into Prices of Production

The organic composition of capital depends at any given time on two circumstances: first, on the technical relation of labour power employed to the mass of the means of production employed; secondly, on the price of these means of production. This composition, as we have seen, must be examined on the basis of percentage ratios. We express the organic composition of a certain capital consisting $\frac{4}{5}$ of constant and $\frac{1}{5}$ of variable capital, by the formula $80_c + 20_v$. It is furthermore assumed in this comparison that the rate of surplus-value is unchangeable. Let it be any rate picked at

random; say, 100%. The capital of $80_c + 20_v$ then produces a surplus-value of 20_s , and this yields a rate of profit of 20% on the total capital. The magnitude of the actual value of its product depends on the magnitude of the fixed part of the constant capital, and on the portion which passes from it through wear and tear into the product. But since this circumstance has absolutely no bearing on the rate of profit, and hence, in the present analysis, we shall assume, for the sake of simplicity, that the constant capital is everywhere uniformly and entirely transferred to the annual product of the capitals. It is further assumed that the capitals in the different spheres of production annually realise the same quantities of surplus-value proportionate to the magnitude of their variable parts. For the present, therefore, we disregard the difference which may be produced in this respect by variations in the duration of turnovers. This point will be discussed later.

Let us take five different spheres of production, and let the capital in each have a different organic composition as follows:

Capitals	Rate of Surplus-Value	Surplus-Value	Value of Product	Rate of Profit
I. $80_c + 20_v$	100%	20	120	20%
II. $70_c + 30_v$	100%	30	130	30%
III. $60_c + 40_v$	100%	40	140	40%
IV. $85_c + 15_v$	100%	15	115	15%

V. $95_c + 5_v$	100%	5	105	5%
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Here, in different spheres of production with the same degree of exploitation, we find considerably different rates of profit corresponding to the different organic composition of these capitals.

The sum total of the capitals invested in these five spheres of production = 500; the sum total of the surplus-value produced by them = 110; the aggregate value of the commodities produced by them = 610. If we consider the 500 as a single capital, and capitals I to V merely as its component parts (as, say, different departments of a cotton mill, which has different ratios of constant to variable capital in its carding, preparatory spinning, spinning, and weaving shops, and in which the average ratio for the factory as a whole has still to be calculated), the mean composition of this capital of 500 would = $390_c + 110_v$, or, in per cent, = $78_c + 22_v$. Should each of the capitals of 100 be regarded as 1/5 of the total capital, its composition would equal this average of $78_c + 22_v$; for every 100 there would be an average surplus-value of 22; thus, the average rate of profit would = 22%, and, finally, the price of every fifth of the total product produced by the 500 would = 122. The product of each fifth of the advanced total capital would then have to be sold at 122.

But to avoid entirely erroneous conclusions it must not be assumed that all cost-prices = 100.

With $80_c + 20_v$ and a rate of surplus-value = 100%, the total value of commodities produced by capital I = 100 would be

$80_c + 20_v + 20_s = 120$, provided the entire constant capital went into the annual product. Now, this may under certain circumstances be the case in some spheres of production. But hardly in cases where the proportion of $c : v = 4 : 1$. We must, therefore, remember in comparing the values produced by each 100 of the different capitals, that they will differ in accordance with the different composition of c as to its fixed and circulating parts, and that, in turn, the fixed portions of each of the different capitals depreciate slowly or rapidly as the case may be, thus transferring unequal quantities of their value to the product in equal periods of time. But this is immaterial to the rate of profit. No matter whether the 80_c give up a value of 80, or 50, or 5, to the annual product, and the annual product consequently $= 80_c + 20_v + 20_s = 120$, or $50_c + 20_v + 20_s = 90$, or $5_v + 20_v + 20_s = 45$; in all these cases the redundancy of the product's value over its cost-price $= 20$, and in calculating the rate of profit these 20 are related to the capital of 100 in all of them. The rate of profit of capital I, therefore, is 20% in every case. To make this still plainer, we let different portions of constant capital go into the value of the product of the same five capitals in the following table:

Capitals	Rate of Surplus-Value	Surplus-Value	Rate of Profit	Used up c	Value of commodities	Cost-price
I. $80_c + 20_v$	100%	20	20%	50	90	110

II. 70_c + 30_v	100%	30	30%	51	111	8
III. 60_c + 40_v	100%	40	40%	51	131	9
IV. 85_c + 15_v	100%	15	15%	40	70	5
V. 95_c + 5_v	100%	5	5%	10	20	2
390_c + 110_v	—	110	110%	—	—	—
78_c + 22_v	—	22	22%	—	—	—

If we now again consider capitals I to V as a single total capital, we shall see that, in this case as well, the composition of the sums of these five capitals = $500 = 390_c + 110_v$, so that we get the same average composition = $78_c + 22_v$, and, similarly, the average surplus-value remains 22. If we divide this surplus-value uniformly among capitals I to V, we get the following commodity-prices:

Capitals	Surplus-Value	Value of Commodities	Cost-Price of Commodities	Price of Commod

I. $80_c + 20_v$	20	90	70	92
II. $70_c + 30_v$	30	111	81	103
III. $60_c + 40_v$	40	131	91	113
IV. $85_c + 15_v$	15	70	55	77
V. $95_c + 5_v$	5	20	15	37

Taken together, the commodities are sold at $2 + 7 + 17 = 26$ above, and $8 + 18 = 26$ below their value, so that the deviations of price from value balance out one another through the uniform distribution of surplus-value, or through addition of the average profit of 22 per 100 units of advanced capital to the respective cost-prices of the commodities I to V. One portion of the commodities is sold above its value in the same proportion in which the other is sold below it. And it is only the sale of the commodities at such prices that enables the rate of profit for capitals I to V to be uniformly 22%, regardless of their different organic composition. The prices which obtain as the average of the various rates of profit in the different spheres of production added to the cost-prices of the different spheres of production, constitute the prices of production.

They have as their prerequisite the existence of a general rate of profit, and this, again, presupposes that the rates of profit in every individual sphere of production taken by itself have previously been reduced to just as many average rates. These particular rates of profit = s/C in every sphere of production, and must, as occurs in Part I of this book, be deduced out of the values of the commodities. Without such deduction the general rate of profit (and consequently the price of production of commodities) remains a vague and senseless conception. Hence, the price of production of a commodity is equal to its cost-price plus the profit, allotted to it in per cent, in accordance with the general rate of profit, or, in other words, to its cost-price plus the average profit.

Owing to the different organic compositions of capitals invested in different lines of production, and, hence, owing to the circumstance that — depending on the different percentage which the variable part makes up in a total capital of a given magnitude — capitals of equal magnitude put into motion very different quantities of labour, they also appropriate very different quantities of surplus-labour or produce very different quantities of surplus-value. Accordingly, the rates of profit prevailing in the various branches of production are originally very different. These different rates of profit are equalized by competition to a single general rate of profit, which is the average of all these different rates of profit. The profit accruing in accordance with this general rate of profit to any capital of a given magnitude, whatever its organic composition, is called the average profit. The price of a commodity, which is equal to its cost-price plus the share of

the annual average profit on the total capital invested (not merely consumed) in its production that falls to it in accordance with the conditions of turnover, is called its price of production. Take, for example, a capital of 500, of which 100 is fixed capital, and let 10% of this wear out during one turnover of the circulating capital of 400. Let the average profit for the period of turnover be 10%. In that case the cost-price of the product created during this turnover will be 10_c for wear plus 400 (c + v) circulating capital = 410, and its price of production will be 410 cost-price plus (10% profit on 500) 50 = 460.

Thus, although in selling their commodities the capitalists of the various spheres of production recover the value of the capital consumed in their production, they do not secure the surplus-value, and consequently the profit, created in their own sphere by the production of these commodities. What they secure is only as much surplus-value, and hence profit, as falls, when uniformly distributed, to the share of every aliquot part of the total social capital from the total social surplus-value, or profit, produced in a given time by the social capital in all spheres of production. Every 100 of an invested capital, whatever its composition, draws as much profit in a year, or any other period of time, as falls to the share of every 100, the Nth part of the total capital, during the same period. So far as profits are concerned, the various capitalists are just so many stockholders in a stock company in which the shares of profit are uniformly divided per 100, so that profits differ in the case of the individual capitalists only in accordance with the amount of capital invested by each in the aggregate enterprise,

i. e., according to his investment in social production as a whole, according to the number of his shares. Therefore, the portion of the price of commodities which replaces the elements of capital consumed in the production of these commodities, the portion, therefore, which will have to be used to buy back these consumed capital-values, i. e., their cost-price, depends entirely on the outlay of capital within the respective spheres of production. But the other element of the price of commodities, the profit added to this cost-price, does not depend on the amount of profit produced in a given sphere of production by a given capital in a given period of time. It depends on the mass of profit which falls as an average for any given period to each individual capital as an aliquot part of the total social capital invested in social production.

When a capitalist sells his commodities at their price of production, therefore, he recovers money in proportion to the value of the capital consumed in their production and secures profit in proportion to this advanced capital as the aliquot part in the total social capital. His cost-prices are specific. But the profit added to them is independent of his particular sphere of production, being a simple average per 100 units of invested capital.

Let us assume that the five different investments I to V of the foregoing illustration belong to one man. The quantity of variable and constant capital consumed per 100 of the invested capital in each of the departments I to V in the production of commodities I to V would, needless to say, make up a part of their price, since at least this price is required to recover the advanced and consumed portions of the capital. These cost-

prices would therefore be different for each class of the commodities I to V, and would as such be set differently by the owner. But as regards the different quantities of surplus-value, or profit, produced by I to V, they might easily be regarded by the capitalist as profit on his advanced aggregate capital, so that each 100 units would get their definite aliquot part. Hence, the cost-prices of the commodities produced in the various departments I to V would be different; but that portion of their selling price derived from the profit added per 100 capital would be the same for all these commodities. The aggregate price of the commodities I to V would therefore equal their aggregate value, i. e., the sum of the cost-prices I to V plus the sum of the surplus-values, or profits, produced in I to V. It would hence actually be the money-expression of the total quantity of past and newly applied labour incorporated in commodities I to V. And in the same way the sum of the prices of production of all commodities produced in society — the totality of all branches of production — is equal to the sum of their values.

This statement seems to conflict with the fact that under capitalist production the elements of productive capital are, as a rule, bought on the market, and that for this reason their prices include profit which has already been realised, hence, include the price of production of the respective branch of industry together with the profit contained in it, so that the profit of one branch of industry goes into the cost-price of another. But if we place the sum of the cost-prices of the commodities of an entire country on one side, and the sum of its surplus-values, or profits, on the other, the calculation must

evidently be right. For instance, take a certain commodity A. Its cost-price may contain the profits of B, C, D, etc., just as the cost-prices of B, C, D, etc., may contain the profits of A. Now, as we make our calculation the profit of A will not be included in its cost-price, nor will the profits of B, C, D, etc., be included in theirs. Nobody ever includes his own profit in his cost-price. If there are, therefore, n spheres of production, and if each makes a profit amounting to p , then their aggregate cost-price = $k - np$. Considering the calculation as a whole we see that since the profits of one sphere of production pass into the cost-price of another, they are therefore included in the calculation as constituents of the total price of the end-product, and so cannot appear a second time on the profit side. If any do appear on this side, however, then only because the commodity in question is itself an ultimate product, whose price of production does not pass into the cost-price of some other commodity.

If the cost-price of a commodity includes a sum = p , which stands for the profits of the producers of the means of production, and if a profit = p_1 is added to this cost-price, the aggregate profit $P = p + p_1$. The aggregate cost-price of the commodity, considered without the profit portions, is then its own cost-price minus P . Let this cost-price be k . Then, obviously, $k + p = k + p + p_1$. In dealing with surplus-values, we have seen in Book I that the product of every capital may be so treated, as though a part of it replaces only capital, while the other part represents only surplus-value. In applying this approach to the aggregate product of society, we must make

some rectifications. Looking upon society as a whole, the profit contained in, say, the price of flax cannot appear twice — not both as a portion of the linen price and as the profit of the flax.

There is no difference between surplus-value and profit, as long as, e.g., A's surplus-value passes into B's constant capital. It is, after all, quite immaterial to the value of the commodities, whether the labour contained in them is paid or unpaid. This merely shows that B pays for A's surplus-value. A's surplus-value cannot be entered twice in the total calculation.

But the difference is this: Aside from the fact that the price of a particular product, let us say that of capital B, differs from its value because the surplus-value realised in B may be greater or smaller than the profit added to the price of the products of B, the same circumstance applies also to those commodities which form the constant part of capital B, and indirectly also its variable part, as the labourers' necessities of life. So far as the constant portion is concerned, it is itself equal to the cost-price plus the surplus-value, here therefore equal to cost-price plus profit, and this profit may again be greater or smaller than the surplus-value for which it stands. As for the variable capital, the average daily wage is indeed always equal to the value produced in the number of hours the labourer must work to produce the necessities of life. But this number of hours is in its turn obscured by the deviation of the prices of production of the necessities of life from their values. However, this always resolves itself to one commodity receiving too little of the surplus-value while another receives

too much, so that the deviations from the value which are embodied in the prices of production compensate one another. Under capitalist production, the general law acts as the prevailing tendency only in a very complicated and approximate manner, as a never ascertainable average of ceaseless fluctuations.

Since the general rate of profit is formed by taking the average of the various rates of profit for each 100 of capital invested in a definite period, e.g., a year, it follows that in it the difference brought about by different periods of turnover of different capitals is also effaced. But these differences have a decisive bearing on the different rates of profit in the various spheres of production whose average forms the general rate of profit.

In the preceding illustration concerning the formation of the average rate of profit we assumed each capital in each sphere of production = 100, and we did so to show the difference in the rates of profit in per cent, and thus also the difference in the values of commodities produced by equal amounts of capital. But it goes without saying that the actual amounts of surplus-value produced in each sphere of production depend on the magnitude of the invested capitals, since the composition of capital is given in each sphere of production. Yet the actual rate of profit in any particular sphere of production is not affected by the fact that the capital invested is 100, or m times 100, or xm times 100. The rate of profit remains 10%, whether the total profit is 10:100, or 1,000:10,000.

However, since the rates of profit differ in the various spheres

of production, with very much different quantities of surplus-value, or profit, being produced in them, depending on the proportion of the variable to the total capital, it is evident that the average profit per 100 of the social capital, and hence the average, or general, rate of profit, will differ considerably in accordance with the respective magnitudes of the capitals invested in the various spheres. Let us take four capitals A, B, C, D. Let the rate of surplus-value for all = 100%. Let the variable capital for each 100 of the total be 25 in A, 40 in B, 15 in C, and 10 in D. Then each 100 of the total capital would yield a surplus-value, or profit, of 25 in A, 40 in B, 15 in C, and 10 in D. This would total 90, and if these four capitals are of the same magnitude, the average rate of profit would then be $90/4$ or $22\frac{1}{2}\%$.

Suppose, however, the total capitals are as follows: A = 200, B = 300, C = 1,000, D = 4,000. The profits produced would then respectively = 50, 120, 150, and 400. This makes a profit of 720, and an average rate of profit of $13\frac{1}{11}\%$ for 5,500, the sum of the four capitals.

The masses of the total value produced differ in accordance with the magnitudes of the total capitals invested in A, B, C, D, respectively. The formation of the average rate of profit is, therefore, not merely a matter of obtaining the simple average of the different rates of profit in the various spheres of production, but rather one of the relative weight which these different rates of profit have in forming this average. This, however, depends on the relative magnitude of the capital invested in each particular sphere, or on the aliquot part which the capital invested in each particular sphere forms in the

aggregate social capital. There will naturally be a very great difference, depending on whether a greater or smaller part of the total capital produces a higher or lower rate of profit. And this, again, depends on how much capital is invested in spheres, in which the variable capital is relatively small or large compared to the total capital. It is just like the average interest obtained by a usurer who lends various quantities of capital at different interest rates; for instance, at 4, 5, 6, 7%, etc. The average rate will depend entirely on how much of his capital he has loaned out at each of the different rates of interest.

The general rate of profit is, therefore, determined by two factors:

- 1) The organic composition of the capitals in the different spheres of production, and thus, the different rates of profit in the individual spheres.
- 2) The distribution of the total social capital in these different spheres, and thus, the relative magnitude of the capital invested in each particular sphere at the specific rate of profit prevailing in it; i. e., the relative share of the total social capital absorbed by each individual sphere of production.

In Books I and II we dealt only with the *value* of commodities. On the one hand, the *cost-price* has now been singled out as a part of this value, and, on the other, the *price of production* of commodities has been developed as its converted form.

Suppose the composition of the average social capital is $80_c + 20_v$ and the annual rate of surplus-value, s' , is 100%. In that case the average annual profit for a capital of $100 = 20$, and

the general annual rate of profit = 20%. Whatever the cost-price, k , of the commodities annually produced by a capital of 100, their price of production would then be $k + 20$. In those spheres of production in which the composition of capital would be $(80 - x)_c + (20 + x)_v$, the actually produced surplus-value, or the annual profit produced in that particular sphere, would be $20 + x$, that is, greater than 20, and the value of the produced commodities = $k + 20 + x$, that is, greater than $k + 20$, or greater than their price of production. In those spheres, in which the composition of the capital = $(80 + x)_c + (20 - x)_v$, the annually produced surplus-value, or profit, would be $20 - x$, or less than 20, and consequently the value of the commodities $k + 20 - x$ less than the price of production, which = $k + 20$. Aside from possible differences in the periods of turnover, the price of production of the commodities would then equal their value only in spheres, in which the composition would happen to be $80_c + 20_v$.

The specific development of the social productivity of labour in each particular sphere of production varies in degree, higher or lower, depending on how large a quantity of means of production are set in motion by a definite quantity of labour, hence in a given working-day by a definite number of labourers, and, consequently, on how small a quantity of labour is required for a given quantity of means of production. Such capitals as contain a larger percentage of constant and a smaller percentage of variable capital than the average social capital are, therefore, called capitals of *higher* composition, and, conversely, those capitals in which the constant is

relatively smaller, and the variable relatively greater than in the average social capital, are called capitals of *lower* composition. Finally, we call those capitals whose composition coincides with the average, capitals of average composition. Should the average social capital be composed in per cent of $80_c + 20_v$, then a capital of $90_c + 10_v$ is *higher*, and a capital of $70_c + 30_v$ *lower* than the social average. Generally speaking, if the composition of the average social capital = $mc + nv$, in which m and n are constant magnitudes and $m + n = 100$, the formula $(m + x)_c + (n - x)_v$ represents the higher composition, and $(m - x)_c + (n + x)_v$ the lower composition of an individual capital or group of capitals. The way in which these capitals perform their functions after establishment of an average rate of profit and assuming one turnover per year, is shown in the following tabulation, in which I represents the average composition with an average rate of profit of 20%.

I) $80_v + 20_v + 20_s$. Rate of profit = 20%.
Price of product = 120. Value = 120.
II) $90_c + 10_v + 10_s$. Rate of profit = 20%.
Price of product = 120. Value = 110.
III) $70_c + 30_v + 30_s$. Rate of profit = 20%.
Price of product = 120. Value = 130.

The value of the commodities produced by capital II would, therefore, be smaller than their price of production, the price of production of the commodities of III smaller than their

value, and only in the case of capital I in branches of production in which the composition happens to coincide with the social average, would value and price of production be equal. In applying these terms to any particular cases note must, however, be taken whether a deviation of the ratio between c and v is simply due to a change in the value of the elements of constant capital, rather than to a difference in the technical composition.

The foregoing statements have at any rate modified the original assumption concerning the determination of the cost-price of commodities. We had originally assumed that the cost-price of a commodity equalled the value of the commodities consumed in its production. But for the buyer the price of production of a specific commodity is its cost-price, and may thus pass as cost-price into the prices of other commodities. Since the price of production may differ from the value of a commodity, it follows that the cost-price of a commodity containing this price of production of another commodity may also stand above or below that portion of its total value derived from the value of the means of production consumed by it. It is necessary to remember this modified significance of the cost-price, and to bear in mind that there is always the possibility of an error if the cost-price of a commodity in any particular sphere is identified with the value of the means of production consumed by it. Our present analysis does not necessitate a closer examination of this point. It remains true, nevertheless, that the cost-price of a commodity is always smaller than its value. For no matter how much the cost-price of a commodity may differ from the value

of the means of production consumed by it, this past mistake is immaterial to the capitalist. The cost-price of a particular commodity is a definite condition which is given, and independent of the production of our capitalist, while the result of his production is a commodity containing surplus-value, therefore an excess of value over and above its cost-price. For all other purposes, the statement that the cost-price is smaller than the value of a commodity has now changed practically into the statement that the cost-price is smaller than the price of production. As concerns the total social capital, in which the price of production is equal to the value, this statement is identical with the former, namely that the cost-price is smaller than the value. And while it is modified in the individual spheres of production, the fundamental fact always remains that in the case of the total social capital the cost-price of the commodities produced by it is smaller than their value, or, in the case of the total mass of social commodities, smaller than their price of production, which is identical with their value. The cost-price of a commodity refers only to the quantity of paid labour contained in it, while its value refers to all the paid and unpaid labour contained in it. The price of production refers to the sum of the paid labour plus a certain quantity of unpaid labour determined for any particular sphere of production by conditions over which it has no control.

The formula that the price of production of a commodity = $k + p$, i. e., equals its cost-price plus profit, is now more precisely defined with $p = kp'$ (p' being the general rate of profit). Hence the price of production = $k + kp'$. If $k = 300$ and $p' = 15\%$, then the price of production is $k + kp' = 300 + 300 \times 15/100$, or

345.

The price of production of the commodities in any particular sphere may change in magnitude:

- 1) If the general rate of profit changes independently of this particular sphere, while the value of the commodities remains the same (the same quantities of congealed and living labour being consumed in their production as before).
- 2) If there is a change of value, either in this particular sphere in consequence of technical changes, or in consequence of a change in the value of those commodities which form the elements of its constant capital, while the general rate of profit remains unchanged.
- 3) Finally, if a combination of the two aforementioned circumstances takes place.

In spite of the great changes occurring continually, as we shall see, in the actual rates of profit within the individual spheres of production, any real change in the general rate of profit, unless brought about by way of an exception by extraordinary economic events, is the belated effect of a series of fluctuations extending over very long periods, fluctuations which require much time before consolidating and equalising one another to bring about a change in the general rate of profit. In all shorter periods (quite aside from fluctuations of market-prices), a change in the prices of production is, therefore, always traceable *prima facie* to actual changes in the value of commodities, i. e., to changes in the total amount of labour-time required for their production. Mere changes in the

money-expression of the same values are, naturally, not at all considered here.

On the other hand, it is evident that from the point of view of the total social capital the value of the commodities produced by it (or, expressed in money, their price) = value of constant capital + value of variable capital + surplus-value. Assuming the degree of labour exploitation to be constant, the rate of profit cannot change so long as the mass of surplus-value remains the same, unless there is a change in either the value of the constant capital, the value of the variable capital, or the value of both, so that C changes, and thereby s/C , which represents the general rate of profit. In each case, therefore, a change in the general rate of profit implies a change in the value of commodities which form the elements of the constant or variable capital, or of both.

Or, the general rate of profit may change, while the value of the commodities remains the same, when the degree of labour exploitation changes.

Or, if the degree of labour exploitation remains the same, the general rate of profit may change through a change in the amount of labour employed relative to the constant capital as a result of technical changes in the labour-process. But such technical changes must always show themselves in, and be attended by, a change in the value of the commodities, whose production would then require more or less labour than before.

We saw in Part I that surplus-value and profit are identical from the standpoint of their mass. But the rate of profit is from the very outset distinct from the rate of surplus-value, which

appears at first sight as merely a different form of calculating. But at the same time this serves, also from the outset, to obscure and mystify the actual origin of surplus-value, since the rate of profit can rise or fall while the rate of surplus-value remains the same, and vice versa, and since the capitalist is in practice solely interested in the rate of profit. Yet there was difference of magnitude only between the rate of surplus-value and the rate of profit and not between the surplus-value itself and profit. Since in the rate of profit the surplus-value is calculated in relation to the total capital and the latter is taken as its standard of measurement, the surplus-value itself appears to originate from the total capital, uniformly derived from all its parts, so that the organic difference between constant and variable capital is obliterated in the conception of profit. Disguised as profit, surplus-value actually denies its origin, loses its character, and becomes unrecognisable. However, hitherto the distinction between profit and surplus-value applied solely to a qualitative change, or change of form, while there was no real difference of magnitude in this first stage of the change between surplus-value and profit, but only between the rate of profit and the rate of surplus-value.

But it is different, as soon as a general rate of profit, and thereby an average profit corresponding to the magnitude of invested capital given in the various spheres of production, have been established.

It is then only an accident if the surplus-value, and thus the profit, actually produced in any particular sphere of production, coincides with the profit contained in the selling price of a commodity. As a rule, surplus-value and profit and

not their rates alone, are then different magnitudes. At a given degree of exploitation, the mass of surplus-value produced in a particular sphere of production is then more important for the aggregate average profit of social capital, and thus for the capitalist class in general, than for the individual capitalist in any specific branch of production. It is of importance to the latter only in so far as the quantity of surplus-value produced in his branch helps to regulate the average profit. But this is a process which occurs behind his back, one he does not see, nor understand, and which indeed does not interest him. The actual difference of magnitude between profit and surplus-value — not merely between the rate of profit and the rate of surplus-value — in the various spheres of production now completely conceals the true nature and origin of profit not only from the capitalist, who has a special interest in deceiving himself on this score, but also from the labourer. The transformation of values into prices of production serves to obscure the basis for determining value itself. Finally, since the mere transformation of surplus-value into profit distinguishes the portion of the value of a commodity forming the profit from the portion forming its cost-price, it is natural that the conception of value should elude the capitalist at this juncture, for he does not see the total labour put into the commodity, but only that portion of the total labour for which he has paid in the shape of means of production, be they living or not, so that his profit appears to him as something outside the immanent value of the commodity. Now this idea is fully confirmed, fortified, and ossified in that, from the standpoint of his particular sphere of production, the profit added to the

cost-price is not actually determined by the limits of the formation of value within his own sphere, but through completely outside influences.

The fact that this intrinsic connection is here revealed for the first time; that up to the present time political economy, as we shall see in the following and in Book IV, either forcibly abstracted itself from the distinctions between surplus-value and profit, and their rates, so it could retain value determination as a basis, or else abandoned this value determination and with it all vestiges of a scientific approach, in order to cling to the differences that strike the eye in this phenomenon — this confusion of the theorists best illustrates the utter incapacity of the practical capitalist, blinded by competition as he is, and incapable of penetrating its phenomena, to recognise the inner essence and inner structure of this process behind its outer appearance.

In fact, all the laws evolved in Part I concerning the rise and fall of the rate of profit have the following two-fold meaning:

1) On the one hand, they are the laws of the general rate of profit. In view of the many different causes which make the rate of profit rise or fall one would think, after everything that has been said and done, that the general rate of profit must change every day. But a trend in one sphere of production compensates for that in another, their effects cross and paralyse one another. We shall later examine to which side these fluctuations ultimately gravitate. But they are slow. The suddenness, multiplicity, and different duration of the fluctuations in the individual spheres of production make them

compensate for one another in the order of their succession in time, a fall in prices following a rise, and vice versa, so that they remain limited to local, i. e., individual, spheres. Finally, the various local fluctuations neutralise one another. Within each individual sphere of production, there take place changes, i. e., deviations from the general rate of profit, which counterbalance one another in a definite time on the one hand, and thus have no influence upon the general rate of profit, and which, on the other, do not react upon it, because they are balanced by other simultaneous local fluctuations. Since the general rate of profit is not only determined by the average rate of profit in each sphere, but also by the distribution of the total social capital among the different individual spheres, and since this distribution is continually changing, it becomes another constant cause of change in the general rate of profit. But it is a cause of change which mostly paralyses itself, owing to the uninterrupted and many-sided nature of this movement.

2) Within each sphere, there is some room for play for a longer or shorter space of time, in which the rate of profit of this sphere may fluctuate, before this fluctuation consolidates sufficiently after rising or falling to gain time for influencing the general rate of profit and therefore assuming more than local importance. The laws of the rate of profit, as developed in Part I of this book, likewise remain applicable within these limits of space and time.

The theoretical conception concerning the first transformation of surplus-value into profit, that every part of a capital yields a uniform profit, expresses a practical fact. Whatever the

composition of an industrial capital, whether it sets in motion one quarter of congealed labour and three-quarters of living labour, or three-quarters of congealed labour and one-quarter of living labour, whether in one case it absorbs three times as much surplus-labour, or produces three times as much surplus-value than in another — in either case it yields the same profit, given the same degree of labour exploitation and leaving aside individual differences, which, incidentally, disappear because we are dealing in both cases with the average composition of the entire sphere of production. The individual capitalist (or all the capitalists in each individual sphere of production), whose outlook is limited, rightly believes that his profit is not derived solely from the labour employed by him, or in his line of production. This is quite true, as far as his average profit is concerned. To what extent this profit is due to the aggregate exploitation of labour on the part of the total social capital, i. e., by all his capitalist colleagues — this interrelation is a complete mystery to the individual capitalist; all the more so, since no bourgeois theorists, the political economists, have so far revealed it. A saving of labour — not only labour necessary to produce a certain product, but also the number of employed labourers — and the employment of more congealed labour (constant capital), appear to be very sound operations from the economic standpoint and do not seem to exert the least influence on the general rate of profit and the average profit. How could living labour be the sole source of profit, in view of the fact that a reduction in the quantity of labour required for production appears not to exert any influence on profit? Moreover, it even seems in certain

circumstances to be the nearest source of an increase of profits, at least for the individual capitalist.

If in any particular sphere of production there is a rise or fall of the portion of the cost-price which represents the value of constant capital, this portion comes from the circulation and, either enlarged or reduced, passes from the very outset into the process of production of the commodity. If, on the other hand, the same number of labourers produces more or less in the same time, so that the quantity of labour required for the production of a definite quantity of commodities varies while the number of labourers remains the same, that portion of the cost-price which represents the value of the variable capital may remain the same, i. e., contribute the same amount to the cost-price of the total product. But every one of the individual commodities whose sum makes up the total product, shares in more or less labour (paid and therefore also unpaid), and shares consequently in the greater or smaller outlay for this labour, i. e., a larger or smaller portion of the wage. The total wages paid by the capitalist remain the same, but wages differ if calculated per piece of the commodity. Thus, there is a change in this portion of the cost-price of the commodity. But no matter whether the cost-price of the individual commodity (or, perhaps, the cost-price of the sum of commodities produced by a capital of a given magnitude) rises or falls, be it due to such changes in its own value, or in that of its elements, the average profit of, e.g., 10% remains 10%. Still, 10% of an individual commodity may represent very different amounts, depending on the change of magnitude caused in the cost-price of the individual commodity by such changes of value as we

have assumed.

So far as the variable capital is concerned — and this is most important, because it is the source of surplus-value, and because anything which conceals its relation to the accumulation of wealth by the capitalist serves to mystify the entire system — matters get cruder or appear to the capitalist in the following light: A variable capital of £100 represents the weekly wage of, say, 100 labourers. If these 100 labourers weekly produce 200 pieces of a commodity = 200C, in a given working-time, then 1C — abstracted from that portion of its cost-price which is added by the constant capital, costs $£100/200 = 10$ shillings, since $£100 = 200C$. Now suppose that a change occurs in the productiveness of labour. Suppose it doubles, so that the same number of labourers now produces twice 200C in the time which it previously took to produce 200C. In that case (considering only that part of the cost-price which consists of wages) $1C = £100/400 = 5$ shillings, since now $£100 = 400C$. Should the productiveness decrease one-half, the same labour would produce only $200C/2$ and since $£100 = 200C/2$, $1C = £200/2 = £1$. The changes in the labour-time required for the production of the commodities, and hence the changes in their value, thus appear in regard to the cost-price, and hence to the price of production, as a different distribution of the same wage for more or fewer commodities, depending on the greater or smaller quantity of commodities produced in the same working-time for the same wage. What the capitalist, and consequently also the political economist, see is that the part of the paid labour per piece of commodity changes with the productivity of labour, and that the value of

each piece also changes accordingly. What they do not see is that the same applies to unpaid labour contained in every piece of the commodity, and this is perceived so much less since the average profit actually is only accidentally determined by the unpaid labour absorbed in the sphere of the individual capitalist. It is only in such crude and meaningless form that we can glimpse that the value of commodities is determined by the labour contained in them.

Economic Manuscripts: Capital, Vol.3, Chapter 13

Karl Marx

50–63 minutes

Capital Vol. III

Part III. The Law of the Tendency of the Rate of Profit to Fall

Chapter 13. The Law As Such

Assuming a given wage and working-day, a variable capital, for instance of 100, represents a certain number of employed labourers. It is the index of this number. Suppose £100 are the wages of 100 labourers for, say, one week. If these labourers perform equal amounts of necessary and surplus-labour, if they work daily as many hours for themselves, *i.e.*, for the reproduction of their wage, as they do for the capitalist, *i.e.*, for the production of surplus-value, then the value of their total product = £200, and the surplus-value they produce would amount to £100. The rate of surplus-value, s/v , would = 100%. But, as we have seen, this rate of surplus-value would nonetheless express itself in very different rates of profit,

depending on the different volumes of constant capital c and consequently of the total capital C , because the rate of profit = s/C . The rate of surplus-value is 100%:

If $c = 50$, and $v = 100$, then $p' = 100/150 = 66\frac{2}{3}\%$;

$c = 100$, and $v = 100$, then $p' = 100/200 = 50\%$;

$c = 200$, and $v = 100$, then $p' = 100/300 = 33\frac{1}{3}\%$;

$c = 300$, and $v = 100$, then $p' = 100/400 = 25\%$;

$c = 400$, and $v = 100$, then $p' = 100/500 = 20\%$.

This is how the same rate of surplus-value would express itself under the same degree of labour exploitation in a falling rate of profit, because the material growth of the constant capital implies also a growth — albeit not in the same proportion — in its value, and consequently in that of the total capital.

If it is further assumed that this gradual change in the composition of capital is not confined only to individual spheres of production, but that it occurs more or less in all, or at least in the key spheres of production, so that it involves changes in the average organic composition of the total capital of a certain society, then the gradual growth of constant capital in relation to variable capital must necessarily lead to *a gradual fall of the general rate of profit*, so long as the rate of surplus-value, or the intensity of exploitation of labour by capital, remain the same. Now we have seen that it is a law of capitalist production that its development is attended by a relative decrease of variable in relation to constant capital, and consequently to the total capital set in motion. This is just another way of saying that owing to the distinctive methods of production developing in the capitalist system the same

number of labourers, *i.e.*, the same quantity of labour-power set in motion by a variable capital of a given value, operate, work up and productively consume in the same time span an ever-increasing quantity of means of labour, machinery and fixed capital of all sorts, raw and auxiliary materials — and consequently a constant capital of an ever-increasing value. This continual relative decrease of the variable capital vis-a-vis the constant, and consequently the total capital, is identical with the progressively higher organic composition of the social capital in its average. It is likewise just another expression for the progressive development of the social productivity of labour, which is demonstrated precisely by the fact that the same number of labourers, in the same time, *i.e.*, with less labour, convert an ever-increasing quantity of raw and auxiliary materials into products, thanks to the growing application of machinery and fixed capital in general. To this growing quantity of value of the constant capital — although indicating the growth of the real mass of use-values of which the constant capital materially consists only approximately — corresponds a progressive cheapening of products. Every individual product, considered by itself, contains a smaller quantity of labour than it did on a lower level of production, where the capital invested in wages occupies a far greater place compared to the capital invested in means of production. The hypothetical series drawn up at the beginning of this chapter expresses, therefore, the actual tendency of capitalist production. This mode of production produces a progressive relative decrease of the variable capital as compared to the constant capital, and consequently a continuously rising

organic composition of the total capital. The immediate result of this is that the rate of surplus-value, at the same, or even a rising, degree of labour exploitation, is represented by a continually falling general rate of profit. (We shall see later [Present edition: Ch. XIV. — *Ed.*] why this fall does not manifest itself in an absolute form, but rather as a tendency toward a progressive fall.) The progressive tendency of the general rate of profit to fall is, therefore, just *an expression peculiar to the capitalist mode of production* of the progressive development of the social productivity of labour. This does not mean to say that the rate of profit may not fall temporarily for other reasons. But proceeding from the nature of the capitalist mode of production, it is thereby proved logical necessity that in its development the general average rate of surplus-value must express itself in a falling general rate of profit. Since the mass of the employed living labour is continually on the decline as compared to the mass of materialised labour set in motion by it, *i.e.*, to the productively consumed means of production, it follows that the portion of living labour, unpaid and congealed in surplus-value, must also be continually on the decrease compared to the amount of value represented by the invested total capital. Since the ratio of the mass of surplus-value to the value of the invested total capital forms the rate of profit, this rate must constantly fall.

Simple as this law appears from the foregoing statements, all of political economy has so far had little success in discovering it, as we shall see in a later part. [K. Marx, *Theorien über den Mehrwert*. K. Marx/F. Engels, *Werke*, Band 26, Teil 2, S. 435-66, 541-43. — *Ed.*] The economists

perceived the phenomenon and cudgelled their brains in tortuous attempts to interpret it. Since this law is of great importance to capitalist production, it may be said to be a mystery whose solution has been the goal of all political economy since Adam Smith, the difference between the various schools since Adam Smith having been in the divergent approaches to a solution. When we consider, on the other hand, that up to the present political economy has been running in circles round the distinction between constant and variable capital, but has never known how to define it accurately; that it has never separated surplus-value from profit, and never even considered profit in its pure form as distinct from its different, independent components, such as industrial profit, commercial profit, interest, and ground-rent; that it has never thoroughly analysed the differences in the organic composition of capital, and, for this reason, has never thought of analysing the formation of the general rate of profit — if we consider all this, the failure to solve this riddle is no longer surprising.

We intentionally present this law before going on to the division of profit into different independent categories. The fact that this analysis is made independently of the division of profit into different parts, which fall to the share of different categories of people, shows from the outset that this law is, in its entirety, independent of this division, and just as independent of the mutual relations of the resultant categories of profit. The profit to which we are here referring is but another name for surplus-value itself, which is presented only in its relation to total capital rather than to variable capital,

from which it arises. The drop in the rate of profit, therefore, expresses the falling relation of surplus-value to advanced total capital, and is for this reason independent of any division whatsoever of this surplus-value among the various categories.

We have seen that at a certain stage of capitalist development, where the organic composition of capital $c : v$ was $50 : 100$, a rate of surplus-value of 100% was expressed in a rate of profit of $66\frac{2}{3}\%$, and that at a higher stage, where $c : v$ was $400 : 100$, the same rate of surplus-value was expressed in a rate of profit of only 20%. What is true of different successive stages of development in one country, is also true of different coexisting stages of development in different countries. In an undeveloped country, in which the former composition of capital is the average, the general rate of profit would = $66\frac{2}{3}\%$, while in a country with the latter composition and a much higher stage of development it would = 20%.

The difference between the two national rates of profit might disappear, or even be reversed, if labour were less productive in the less developed country, so that a larger quantity of labour were to be represented in a smaller quantity of the same commodities, and a larger exchange-value were represented in less use-value. The labourer would then spend more of his time in reproducing his own means of subsistence, or their value, and less time in producing surplus-value; consequently, he would perform less surplus-labour, with the result that the rate of surplus-value would be lower. Suppose, the labourer of the less developed country were to work $\frac{2}{3}$ of the working-day for himself and $\frac{1}{3}$ for the capitalist; in accordance with the above illustration, the same labour-power would then be paid

with $133\frac{1}{3}$ and would furnish a surplus of only $60\frac{2}{3}$. A constant capital of 50 would correspond to a variable capital of $433\frac{1}{3}$. The rate of surplus-value would amount to $66\frac{2}{3} : 133\frac{1}{3} = 50\%$, and the rate of profit to $66\frac{2}{3} : 133\frac{1}{3}$, or approximately 36%.

Since we have not so far analysed the different component parts of profit, *i.e.*, they do not for the present exist for us, we make the following remarks beforehand merely to avoid misunderstanding: In comparing countries in different stages of development it would be a big mistake to measure the level of the national rate of profit by, say, the level of the national rate of interest, namely when comparing countries with a developed capitalist production with countries in which labour has not yet been formally subjected to capital, although in reality the labourer is exploited by the capitalist (as, for instance, in India, where the ryot manages his farm as an independent producer whose production as such is not, therefore, as yet subordinated to capital, although the usurer may not only rob him of his entire surplus-labour by means of interest, but may also, to use a capitalist term, hack off a part of his wage). This interest comprises all the profit, and more than the profit, instead of merely expressing an aliquot part of the produced surplus-value, or profit, as it does in countries with a developed capitalist production. On the other hand, the rate of interest is, in this case, mostly determined by relations (loans granted by usurers to owners of larger estates who draw ground-rent) which have nothing to do with profit, and rather indicate to what extent usury appropriates ground-rent.

As regards countries possessing different stages of

development of capitalist production, and consequently capitals of different organic composition, a country where the normal working-day is shorter than another's may have a higher rate of surplus-value (one of the factors which determines the rate of profit). *First*, if the English ten-hour working-day is, on account of its higher intensity, equal to an Austrian working-day of 14 hours, then, dividing the working-day equally in both instances, 5 hours of English surplus-labour may represent a greater value on the world-market than 7 hours of Austrian surplus-labour. *Second*, a larger portion of the English working-day than of the Austrian may represent surplus-labour.

The law of the falling rate of profit, which expresses the same, or even a higher, rate of surplus-value, states, in other words, that any quantity of the average social capital, say, a capital of 100, comprises an ever larger portion or means of labour, and an ever smaller portion of living labour. Therefore, since the aggregate mass of living labour operating the means of production decreases in relation to the value of these means of production, it follows that the unpaid labour and the portion of value in which it is expressed must decline as compared to the value of the advanced total capital. Or: An ever smaller aliquot part of invested total capital is converted into living labour, and this total capital, therefore, absorbs in proportion to its magnitude less and less surplus-labour, although the unpaid part of the labour applied may at the same time grow in relation to the paid part. The relative decrease of the variable and increase of the constant capital, however much both parts may grow in absolute magnitude, is, as we have said, but

another expression for greater productivity of labour.

Let a capital of 100 consist of $80_c + 20_v$, and the latter = 20 labourers. Let the rate of surplus-value be 100%, *i.e.*, the labourers work half the day for themselves and the other half for the capitalist. Now let the capital of 100 in a less developed country = $20_c + 80_v$, and let the latter = 80 labourers. But these labourers require $2/3$ of the day for themselves, and work only $1/3$ for the capitalist. Everything else being equal, the labourers in the first case produce a value of 40, and in the second of 120. The first capital produces $80_c + 20_v + 20_s = 120$; rate of profit = 20%. The second capital, $20_c + 80_v + 40_s = 140$; rate of profit 40%. In the second case the rate of profit is, therefore, double the first, although the rate of surplus-value in the first = 100%, which is double that of the second, where it is only 50%. But then, a capital of the same magnitude appropriates the surplus-labour of only 20 labourers in the first case, and of 80 labourers in the second case.

The law of the progressive falling of the rate of profit, or the relative decline of appropriated surplus-labour compared to the mass of materialised labour set in motion by living labour, does not rule out in any way that the absolute mass of exploited labour set in motion by the social capital, and consequently the absolute mass of the surplus-labour it appropriates, may grow; nor, that the capitals controlled by individual capitalists may dispose of a growing mass of labour and, hence, of surplus-labour, the latter even though the number of labourers they employ does not increase.

Take a certain working population of, say, two million. Assume, furthermore, that the length and intensity of the average working-day, and the level of wages, and thereby the proportion between necessary and surplus-labour, are given. In that case the aggregate labour of these two million, and their surplus-labour expressed in surplus-value, always produces the same magnitude of value. But with the growth of the mass of the constant (fixed and circulating) capital set in motion by this labour, this produced quantity of value declines in relation to the value of this capital, which value grows with its mass, even if not in quite the same proportion. This ratio, and consequently the rate of profit, shrinks in spite of the fact that the mass of commanded living labour is the same as before, and the same amount of surplus-labour is sucked out of it by the capital. It changes because the mass of materialised labour set in motion by living labour increases, and not because the mass of living labour has shrunk. It is a relative decrease, not an absolute one, and has, in fact, nothing to do with the absolute magnitude of the labour and surplus-labour set in motion. The drop in the rate of profit is not due to an absolute, but only to a relative decrease of the variable part of the total capital, *i.e.*, to its decrease in relation to the constant part.

What applies to any given mass of labour and surplus-labour, also applies to a growing number of labourers, and, thus, under the above assumption, to any growing mass of commanded labour in general, and to its unpaid part, the surplus-labour, in particular. If the working population increases from two million to three, and if the variable capital invested in wages also rises to three million from its former

two million, while the constant capital rises from four million to fifteen million, then, under the above assumption of a constant working-day and a constant rate of surplus-value, the mass of surplus-labour, and of surplus-value, rises by one-half, *i.e.*, 50%, from two million to three. Nevertheless, in spite of this growth of the absolute mass of surplus-labour, and hence of surplus-value, by 50%, the ratio of variable to constant capital would fall from 2 : 4 to 3 : 15, and the ratio of surplus-value to total capital would be (in millions)

I. $4_c + 2_v + 2_s$; $C = 6$, $p' = 33\frac{1}{3}\%$.

II. $15_c + 3_v + 3_s$; $C = 18$, $p' = 16\frac{2}{3}\%$.

While the mass of surplus-value has increased by one-half, the rate of profit has fallen by one-half. However, the profit is only the surplus-value calculated in relation to the total social capital, and the mass of profit, its absolute magnitude, is socially equal to the absolute magnitude of the surplus-value. The absolute magnitude of the profit, its total amount, would, therefore, have grown by 50%, in spite of its enormous relative decrease compared to the advanced total capital, or in spite of the enormous decrease in the general rate of profit. The number of labourers employed by capital, hence the absolute mass of the labour set in motion by it, and therefore the absolute mass of surplus-labour absorbed by it, the mass of the surplus-value produced by it, and therefore the absolute mass of the profit produced by it, *can*, consequently, increase, and increase progressively, in spite of the progressive drop in the rate of profit. And this not only *can* be so. Aside from temporary fluctuations it *must* be so, on the basis of capitalist

production.

Essentially, the capitalist process of production is simultaneously a process of accumulation. We have shown that with the development of capitalist production the mass of values to be simply reproduced, or maintained, increases as the productivity of labour grows, even if the labour-power employed should remain constant. But with the development of social productivity of labour the mass of produced use-values, of which the means of production form a part, grows still more. And the additional labour, through whose appropriation this additional wealth can be reconverted into capital, does not depend on the value, but on the mass of these means of production (including means of subsistence), because in the production process the labourers have nothing to do with the value, but with the use-value, of the means of production. Accumulation itself, however, and the concentration of capital that goes with it, is a material means of increasing productiveness. Now, this growth of the means of production includes the growth of the working population, the creation of a working population, which corresponds to the surplus-capital, or even exceeds its general requirements, thus leading to an over-population of workers. A momentary excess of surplus-capital over the working population it has commandeered, would have a two-fold effect. It could, on the one hand, by raising wages, mitigate the adverse conditions which decimate the offspring of the labourers and would make marriages easier among them, so as gradually to increase the population. On the other hand, by applying methods which yield relative surplus-value (introduction and improvement of

machinery) it would produce a far more rapid, artificial, relative over-population, which in its turn, would be a breeding-ground for a really swift propagation of the population, since under capitalist production misery produces population. It therefore follows of itself from the nature of the capitalist process of accumulation, which is but one facet of the capitalist production process, that the increased mass of means of production that is to be converted into capital always finds a correspondingly increased, even excessive, exploitable worker population. As the process of production and accumulation advances therefore, the mass of available and appropriated surplus-labour, and hence the absolute mass of profit appropriated by the social capital, *must* grow. Along with the volume, however, the same laws of production and accumulation increase also the value of the constant capital in a mounting progression more rapidly than that of the variable part of capital, invested as it is in living labour. Hence, the same laws produce for the social capital a growing absolute mass of profit, and a falling rate of profit.

We shall entirely ignore here that with the advance of capitalist production and the attendant development of the productiveness of social labour and multiplication of production branches, hence products, the same amount of value represents a progressively increasing mass of use-values and enjoyments.

The development of capitalist production and accumulation lifts labour-processes to an increasingly enlarged scale and thus imparts to them ever greater dimensions, and involves accordingly larger investments of capital for each individual

establishment. A mounting concentration of capitals (accompanied, though on a smaller scale, by an increase in the number of capitalists) is, therefore, one of its material requirements as well as one of its results. Hand in hand with it, mutually interacting, there occurs a progressive expropriation of the more or less direct producers. It is, then, natural for the individual capitalists to command increasingly large armies of labourers (no matter how much the variable capital may decrease in relation to the constant), and natural, too, that the mass of surplus-value, and hence profit, appropriated by them, should grow simultaneously with, and in spite of, the fall in the rate of profit. The causes which concentrate masses of labourers under the command of individual capitalists, are the very same that swell the mass of the invested fixed capital, and auxiliary and raw materials, in mounting proportion as compared to the mass of employed living labour.

It requires no more than a passing remark at this point to indicate that, given a certain labouring population, the mass of surplus-value, hence the absolute mass of profit, must grow if the rate of surplus-value increases, be it through a lengthening or intensification of the working-day, or through a drop in the value of wages due to an increase in the productiveness of labour, and that it must do so in spite of the relative decrease of variable capital in respect to constant.

The same development of the productiveness of social labour, the same laws which express themselves in a relative decrease of variable as compared to total capital, and in the thereby facilitated accumulation, while this accumulation in its turn becomes a starting-point for the further development of the

productiveness and for a further relative decrease of variable capital — this same development manifests itself, aside from temporary fluctuations, in a progressive increase of the total employed labour-power and a progressive increase of the absolute mass of surplus-value, and hence of profit.

Now, what must be the form of this double-edged law of a decrease in the *rate* of profit and a simultaneous increase in the absolute *mass* of profit arising from the same causes? As a law based on the fact that under given conditions the appropriated mass of surplus-labour, hence of surplus-value, increases, and that, so far as the total capital is concerned, or the individual capital as an aliquot part of the total capital, profit and surplus-value are identical magnitudes?

Let us take an aliquot part of capital upon which we calculate the rate of profit, *e.g.*, 100. These 100 represent the average composition of the total capital, say, $80_c + 20_v$. We have seen in the second part of this book that the average rate of profit in the various branches of production is determined not by the particular composition of each individual capital, but by the average social composition. As the variable capital decreases relative to the constant, hence the total capital of 100, the rate of profit, or the relative magnitude of surplus-value, *i.e.*, its ratio to the advanced total capital of 100, falls even though the intensity of exploitation were to remain the same, or even to increase. But it is not this relative magnitude alone which falls. The magnitude of the surplus-value or profit absorbed by the total capital of 100 also falls absolutely. At a rate of surplus-value of 100%, a capital of $60_c + 40_v$ produces a mass of

surplus-value, and hence of profit, amounting to 40; a capital of $70_c + 230_v$ a mass of profit of 30; and for a capital of $80_c + 20_v$ the profit falls to 20. This falling applies to the mass of surplus-value, and hence of profit, and is due to the fact that the total capital of 100 employs less living labour, and, the intensity of labour exploitation remaining the same, sets in motion less surplus-labour, and therefore produces less surplus-value. Taking any aliquot part of the social capital, *i.e.*, a capital of average composition, as a standard by which to measure surplus-value — and this is done in all profit calculations — a relative fall of surplus-value is generally identical with its absolute fall. In the cases given above, the rate of profit sinks from 40% to 30% and to 20%, because, in fact, the mass of surplus-value, and hence of profit, produced by the same capital falls absolutely from 40 to 30 and to 20. Since the magnitude of the value of the capital, by which the surplus-value is measured, is given as 100, a fall in the proportion of surplus-value to this given magnitude can be only another expression for the decrease of the absolute magnitude of surplus-value and profit. This is, indeed, a tautology. But, as shown, the fact that this decrease occurs at all, arises from the nature of the development of the capitalist process of production.

On the other hand, however, the same causes which bring about an absolute decrease of surplus-value, and hence profit, on a given capital, and consequently of the rate of profit calculated in per cent, produce an increase in the absolute mass of surplus-value, and hence of profit, appropriated by the social capital (*i.e.*, by all capitalists taken as a whole). How

does this occur, what is the only way in which this can occur, or what are the conditions obtaining in this seeming contradiction?

If any aliquot part = 100 of the social capital, and hence any 100 of average social composition, is a given magnitude, for which therefore a fall in the rate of profit coincides with a fall in the absolute magnitude of the profit because the capital which here serves as a standard of measurement is a constant magnitude, then the magnitude of the social capital like that of the capital in the hands of individual capitalists, is variable, and in keeping with our assumptions it must vary inversely with the decrease of its variable portion.

In our former illustration, when the percentage of composition was $60_c + 40_v$, the corresponding surplus-value, or profit, was 40, and hence the rate of profit 40%. Suppose, the total capital in this stage of composition was one million. Then the total surplus-value, and hence the total profit, amounted to 400,000. Now, if the composition later = $80_c + 20_v$, while the degree of labour exploitation remained the same, then the surplus-value or profit for each 100 = 20. But since the absolute mass of surplus-value or profit increases, as demonstrated, in spite of the decreasing rate of profit or the decreasing production of surplus-value by every 100 of capital — increases, say, from 400,000 to 440,000, then this occurs solely because the total capital which formed at the time of this new composition has risen to 2,200,000. The mass of the total capital set in motion has risen to 220%, while the rate of profit has fallen by 50%. Had the total capital no more than doubled, it would have to

produce as much surplus-value and profit to obtain a rate of profit of 20% as the old capital of 1,000,000 produced at 40%. Had it grown to less than double, it would have produced less surplus-value, or profit, than the old capital of 1,000,000, which, in its former composition, would have had to grow from 1,000,000 to no more than 1,100,000 to raise its surplus-value from 400,000 to 440,000.

We again meet here the previously defined law that the relative decrease of the variable capital, hence the development of the social productiveness of labour, involves an increasingly large mass of total capital to set in motion the same quantity of labour-power and squeeze out the same quantity of surplus-labour. Consequently, the possibility of a relative surplus of labouring people develops proportionately to the advances made by capitalist production not because the productiveness of social labour *decreases*, but because it *increases*. It does not therefore arise out of an absolute disproportion between labour and the means of subsistence, or the means for the production of these means of subsistence, but out of a disproportion occasioned by capitalist exploitation of labour, a disproportion between the progressive growth of capital and its relatively shrinking need for an increasing population.

Should the rate of profit fall by 50%, it would shrink one-half. If the mass of profit is to remain the same, the capital must be doubled. For the mass of profit made at a declining rate of profit to remain the same, the multiplier indicating the growth of the total capital must be equal to the divisor indicating the fall of the rate of profit. If the rate of profit falls from 40 to 20,

the total capital must rise inversely at the rate of 20 : 40 to obtain the same result. If the rate of profit falls from 40 to 8, the capital would have to increase at the rate of 8 : 40, or five-fold. A capital of 1,000,000 at 40% produces 400,000, and a capital of 5,000,000 at 8% likewise produces 400,000. This applies if we want the result to remain the same. But if the result is to be higher, then the capital must grow at a greater rate than the rate of profit falls. In other words, for the variable portion of the total capital not to remain the same in absolute terms, but to increase absolutely in spite of its falling in percentage of the total capital, the total capital must grow at a faster rate than the percentage of the variable capital falls. It must grow so considerably that in its new composition it should require more than the old portion of variable capital to purchase labour-power. If the variable portion of a capital = 100 should fall from 40 to 20, the total capital must rise higher than 200 to be able to employ a larger variable capital than 40.

Even if the exploited mass of the working population were to remain constant, and only the length and intensity of the working-day were to increase, the mass of the invested capital would have to increase, since it would have to be greater in order to employ the same mass of labour under the old conditions of exploitation after the composition of capital changes.

Thus, the same development of the social productiveness of labour expresses itself with the progress of capitalist production on the one hand in a tendency of the rate of profit to fall progressively and, on the other, in a progressive growth of the absolute mass of the appropriated surplus-value, or

profit; so that on the whole a relative decrease of variable capital and profit is accompanied by an absolute increase of both. This two-fold effect, as we have seen, can express itself only in a growth of the total capital at a pace more rapid than that at which the rate of profit falls. For an absolutely increased variable capital to be employed in a capital of higher composition, or one in which the constant capital has increased relatively more, the total capital must not only grow proportionately to its higher composition, but still more rapidly. It follows, then, that as the capitalist mode of production develops, an ever larger quantity of capital is required to employ the same, let alone an increased, amount of labour-power. Thus, on a capitalist foundation, the increasing productiveness of labour necessarily and permanently creates a seeming over-population of labouring people. If the variable capital forms just $\frac{1}{6}$ of the total capital instead of the former $\frac{1}{2}$, the total capital must be trebled to employ the same amount of labour-power. And if twice as much labour-power is to be employed, the total capital must increase six-fold.

Political economy, which has until now been unable to explain the law of the tendency of the rate of profit to fall, pointed self-consoling to the increasing mass of profit, *i.e.*, to the growth of the absolute magnitude of profit, be it for the individual capitalist or for the social capital, but this was also based on mere platitude and speculation.

To say that the mass of profit is determined by two factors — first, the rate of profit, and, secondly, the mass of capital invested at this rate, is mere tautology. It is therefore but a corollary of this tautology to say that there is a possibility for

the mass of profit to grow even though the rate of profit may fall at the same time. It does not help us one step farther, since it is just as possible for the capital to increase without the mass of profit growing, and for it to increase even while the mass of profit falls. For 100 at 25% yields 25, and 400 at 5% yields only 20.^[1] But if the same causes which make the rate of profit fall, entail the accumulation, *i.e.*, the formation, of additional capital, and if each additional capital employs additional labour and produces additional surplus-value; if, on the other hand, the mere fall in the rate of profit implies that the constant capital, and with it the total old capital, have increased, then this process ceases to be mysterious. We shall see later [K. Marx, *Theorien über den Mehrwert*. K. Marx/F. Engels, *Werke*, Band 26, Teil 2, S. 435-66, 541- 43. — *Ed*] to what deliberate falsifications some people resort in their calculations to spirit away the possibility of an increase in the mass of profit simultaneous with a decrease in the rate of profit.

We have shown how the same causes that bring about a tendency for the general rate of profit to fall necessitate an accelerated accumulation of capital and, consequently, an increase in the absolute magnitude, or total mass, of the surplus-labour (surplus-value, profit) appropriated by it. Just as everything appears reversed in competition, and thus in the consciousness of the agents of competition, so also this law, this inner and necessary connection between two seeming contradictions. It is evident that within the proportions indicated above a capitalist disposing of a large capital will receive a larger mass of profit than a small capitalist making

seemingly high profits. Even a cursory examination of competition shows, furthermore, that under certain circumstances, when the greater capitalist wishes to make room for himself on the market, and to crowd out the smaller ones, as happens in times of crises, he makes practical use of this, *i.e.*, he deliberately lowers his rate of profit in order to drive the smaller ones to the wall. Merchants capital, which we shall describe in detail later, also notably exhibits phenomena which appear to attribute a fall in profit to an expansion of business, and thus of capital. The scientific expression for this false conception will be given later. Similar superficial observations result from a comparison of rates of profit in individual lines of business, distinguished either as subject to free competition, or to monopoly. The utterly shallow conception existing in the minds of the agents of competition is found in Roscher, namely, that a reduction in the rate of profit is "more prudent and humane". [Roscher, *Die Grundlage der Nationalökonomie*, 3 Auflage, 1858, 108, S. 192. — *Ed.*] The fall in the rate of profit appears in this case as an *effect* of an increase in capital and of the concomitant calculation of the capitalist that the mass of profits pocketed by him will be greater at a smaller rate of profit. This entire conception (with the exception of Adam Smith's, which we shall mention later) [K. Marx, *Theorien über den Mehrwert*. K. Marx/F. Engels, *Werke*, Band 26, Teil 2, S. 214-28. — *Ed.*] rests on an utter misapprehension of what the general rate of profit is, and on the crude notion that prices are actually determined by adding a more or less arbitrary quota of profit to the true value of commodities. Crude as these ideas are,

they arise necessarily out of the inverted aspect which the immanent laws of capitalist production represent in competition.

The law that a fall in the rate of profit due to the development of productiveness is accompanied by an increase in the mass of profit, also expresses itself in the fact that a fall in the price of commodities produced by a capital is accompanied by a relative increase of the masses of profit contained in them and realised by their sale.

Since the development of the productiveness and the correspondingly higher composition of capital sets in motion an ever-increasing quantity of means of production through a constantly decreasing quantity of labour, every aliquot part of the total product, *i.e.*, every single commodity, or each particular lot of commodities in the total mass of products, absorbs less living labour, and also contains less materialised labour, both in the depreciation of the fixed capital applied and in the raw and auxiliary materials consumed. Hence every single commodity contains a smaller sum of labour materialised in means of production and of labour newly added during production. This causes the price of the individual commodity to fall. But the mass of profits contained in the individual commodities may nevertheless increase if the rate of the absolute or relative surplus-value grows. The commodity contains less newly added labour, but its unpaid portion grows in relation to its paid portion. However, this is the case only within certain limits. With the absolute amount of living labour newly incorporated in individual commodities decreasing enormously as production develops, the absolute

mass of unpaid labour contained in them will likewise decrease, however much it may have grown as compared to the paid portion. The mass of profit on each individual commodity will shrink considerably with the development of the productiveness of labour, in spite of a growth in the rate of surplus-value. And this reduction, just as the fall in the rate of profit, is only delayed by the cheapening of the elements of constant capital and by the other circumstances set forth in the first part of this book, which increase the rate of profit at a given, or even falling, rate of surplus-value.

That the price of individual commodities whose sum makes up the total product of capital falls, means simply that a certain quantity of labour is realised in a larger quantity of commodities, so that each individual commodity contains less labour than before. This is the case even if the price of one part of constant capital, such as raw material, etc., should rise. Outside of a few cases (for instance, if the productiveness of labour uniformly cheapens all elements of the constant, and the variable, capital), the rate of profit will fall, in spite of the higher rate of surplus-value, 1) because even a larger unpaid portion of the smaller total amount of newly added labour is smaller than a smaller aliquot unpaid portion of the former larger amount and 2) because the higher composition of capital is expressed in the individual commodity by the fact that the portion of its value in which newly added labour is materialised decreases in relation to the portion of its value which represents raw and auxiliary material, and the wear and tear of fixed capital. This change in the proportion of the various component parts in the price of individual

commodities, *i.e.*, the decrease of that portion of the price in which newly added living labour is materialised, and the increase of that portion of it in which formerly materialised labour is represented, is the form which expresses the decrease of the variable in relation to the constant capital through the price of the individual commodities. Just as this decrease is absolute for a certain amount of capital, say of 100, it is also absolute for every individual commodity as an aliquot part of the reproduced capital. However, the rate of profit, if calculated merely on the elements of the price of an individual commodity, would be different from what it actually is. And for the following reason:

[The rate of profit is calculated on the total capital invested, but for a definite time, actually a year. The rate of profit is the ratio of the surplus-value, or profit, produced and realised in a year, to the total capital calculated in per cent. It is, therefore, not necessarily equal to a rate of profit calculated for the period of turnover of the invested capital rather than for a year. It is only if the capital is turned over exactly in one year that the two coincide.

On the other hand, the profit made in the course of a year is merely the sum of profits on commodities produced and sold during that same year. Now, if we calculate the profit on the cost-price of commodities, we obtain a rate of profit $= p/k$ in which p stands for the profit realised during one year, and k for the sum of the cost-prices of commodities produced and sold within the same period. It is evident that this rate of profit p/k will not coincide with the actual rate of profit p/C , mass of profit divided by total capital, unless $k = C$, that is, unless the

capital is turned over in exactly one year.

Let us take three different conditions of an industrial capital.

I. A capital of £8,000 produces and sells annually 5,000 pieces of a commodity at 30s. per piece, thus making an annual turnover of £7,500. It makes a profit of 10s. on each piece, or £2,500 per year. Every piece, then, contains 20s. advanced capital and 10s. profit, so that the rate of profit per piece is $10/20 = 50\%$. The turned-over sum of £7,500 contains £5,000 advanced capital and £2,500 profit. Rate of profit per turnover, p/k , likewise 50%. But calculated on the total capital the rate of profit $p/C = 2,500/8,000 = 31\frac{1}{4}\%$

II. The capital rises to £10,000. Owing to increased productivity of labour it is able to produce annually 10,000 pieces of the commodity at a cost-price of 20s. per piece. Suppose the commodity is sold at a profit of 4s., hence at 24s. per piece. In that case the price of the annual product = £12,000, of which £10,000 is advanced capital and £2,000 is profit. The rate of profit $p/k = 4/20$ per piece, and $2,000/10,000$ for the annual turnover, or in both cases = 20%. And since the total capital is equal to the sum of the cost-prices, namely £10,000, it follows that p/C , the actual rate of profit, is in this case also 20%.

III. Let the capital rise to £15,000 owing to a constant growth of the productiveness of labour, and let it annually produce 30,000 pieces of the commodity at a cost-price of 13s. per piece, each piece being sold at a profit of 2s., or at 15s. The annual turnover therefore = $30,000 \times 15s. = £22,500$, of which £19,500 is advanced capital and £3,000 profit. The rate of

profit p/k then $= 2/13 = 3,000/19,500 = 15 \frac{5}{13}\%$. But $p/C = 3,000/15,000 = 20\%$.

We see, therefore, that only in case II, where the turned-over capital-value is equal to the total capital, the rate of profit per piece, or per total amount of turnover, is the same as the rate of profit calculated on the total capital. In case I, in which the amount of the turnover is smaller than the total capital, the rate of profit calculated on the cost-price of the commodity is higher; and in case III, in which the total capital is smaller than the amount of the turnover, it is lower than the actual rate calculated on the total capital. This is a general rule.

In commercial practice, the turnover is generally calculated inaccurately. It is assumed that the capital has been turned over once as soon as the sum of the realised commodity-prices equals the sum of the invested total capital. But the *capital* can complete one whole turnover only when the sum of the *cost-prices* of the realised commodities equals the sum of the total capital. — *F.E.*]

This again shows how important it is in capitalist production to regard individual commodities, or the commodity-product of a certain period, as products of advanced capital and in relation to the total capital which produces them, rather than in isolation, by themselves, as mere commodities.

The *rate* of profit must be calculated by measuring the mass of produced and realised surplus-value not only in relation to the consumed portion of capital reappearing in the commodities, but also to this part plus that portion of unconsumed but applied capital which continues to operate in production.

However, the *mass* of profit cannot be equal to anything but the mass of profit or surplus-value, contained in the commodities themselves, and to be realised by their sale.

If the productivity of industry increases, the price of individual commodities falls. There is less labour in them, less paid and unpaid labour. Suppose, the same labour produces, say, triple its former product. Then $\frac{2}{3}$ less labour yields individual product. And since profit can make up but a portion of the amount of labour contained in an individual commodity, the mass of profit in the individual commodity must decrease, and this takes place within certain limits, even if the rate of surplus-value should rise. In any case, the mass of profit on the total product does not fall below the original mass of profit so long as the capital employs the same number of labourers at the same degree of exploitation. (This may also occur if fewer labourers are employed at a higher rate of exploitation.) For the mass of profit on the individual product decreases proportionately to the increase in the number of products. The mass of profit remains the same, but it is distributed differently over the total amount of commodities. Nor does this alter the distribution between the labourers and capitalists of the amount of value created by newly added labour. The mass of profit cannot increase so long as the same amount of labour is employed, unless the unpaid surplus-labour increases, or, should intensity of exploitation remain the same, unless the number of labourers grows. Or, both these causes may combine to produce this result. In all these cases — which, however, in accordance with our assumption, presuppose an increase of constant capital as compared to variable, and an

increase in the magnitude of total capital — the individual commodity contains a smaller mass of profit and the rate of profit falls even if calculated on the individual commodity. A given quantity of newly added labour materialises in a larger quantity of commodities. The price of the individual commodity falls. Considered abstractly the rate of profit may remain the same, even though the price of the individual commodity may fall as a result of greater productiveness of labour and a simultaneous increase in the number of this cheaper commodity if, for instance, the increase in productiveness of labour acts uniformly and simultaneously on all the elements of the commodity, so that its total price falls in the same proportion in which the productivity of labour increases, while, on the other hand, the mutual relation of the different elements of the price of the commodity remains the same. The rate of profit could even rise if a rise in the rate of surplus-value were accompanied by a substantial reduction in the value of the elements of constant, and particularly of fixed, capital.

But in reality, as we have seen, the rate of profit will fall in the long run. In no case does a fall in the price of any individual commodity by itself give a clue to the rate of profit.

Everything depends on the magnitude of the total capital invested in its production. For instance, if the price of one yard of fabric falls from 3s. to $1\frac{2}{3}$ s., if we know that before this price reduction it contained $1\frac{2}{3}$ s. constant capital, yarn, etc., $\frac{2}{3}$ s. wages, and $\frac{2}{3}$ s. profit, while after the reduction it contains 1s. constant capital, $\frac{2}{3}$ s. wages, and $\frac{1}{3}$ s. profit, we cannot tell if the rate of profit has remained the same or not. This

depends on whether, and by how much, the advanced total capital has increased, and how many yards more it produces in a given time.

The phenomenon, springing from the nature of the capitalist mode of production, that increasing productivity of labour implies a drop in the price of the individual commodity, or of a certain mass of commodities, an increase in the number of commodities, a reduction in the mass of profit on the individual commodity and in the rate of profit on the aggregate of commodities, and an increase in the mass of profit on the total quantity of commodities — this phenomenon appears on the surface only in a reduction of the mass of profit on the individual commodity, a fall in its price, an increase in the mass of profit on the augmented total number of commodities produced by the total social capital or an individual capitalist. It then appears as if the capitalist adds less profit to the price of the individual commodity of his own free will, and makes up for it through the greater number of commodities he produces. This conception rests upon the notion of profit upon alienation, which, in its turn, is deduced from the conception of merchant capital.

We have previously seen in Book I (4 and 7 Abschnitt) [English edition: Parts IV and VII. — *Ed.*] that the mass of commodities growing along with the productivity of labour and the cheapening of the individual commodity as such (as long as these commodities do not enter the price of labour-power as determinants) — that this does not affect the proportion between paid and unpaid labour in the individual commodity, in spite of the falling price.

Since all things appear distorted, namely, reversed in competition, the individual capitalist may imagine: 1) that he is reducing his profit on the individual commodity by cutting its price, but still making a greater profit by selling a larger quantity of commodities; 2) that he fixes the price of the individual commodities and that he determines the price of the total product by multiplication, while the original process is really one of division (see Book I, Kap. X, S. 281 [English edition: Ch. XII. — *Ed*]), and multiplication is only correct secondarily, since it is based on that division. The vulgar economist does practically no more than translate the singular concepts of the capitalists, who are in the thrall of competition, into a seemingly more theoretical and generalised language, and attempt to substantiate the justice of those conceptions.

The fall in commodity-prices and the rise in the mass of profit on the augmented mass of these cheapened commodities is, in fact, but another expression for the law of the falling rate of profit attended by a simultaneously increasing mass of profit.

The analysis of how far a falling rate of profit may coincide with rising prices no more belongs here than that of the point previously discussed in Book I (S. 280-81 [English edition: Ch. XII. — *Ed.*]), concerning relative surplus-value. A capitalist working with improved but not as yet generally adopted methods of production sells below the market-price, but above his individual price of production; his rate of profit rises until competition levels it out. During this equalisation period the second requisite, expansion of the invested capital, makes its appearance. According to the degree of this expansion the capitalist will be able to employ a part of his

former labourers, actually perhaps all of them, or even more, under the new conditions, and hence to produce the same, or a greater, mass of profit.

Notes

1. "We should also expect that, however the rate of the profits of stock might diminish in consequence of the accumulation of capital on the land and the rise of wages, yet the aggregate amount of profits would increase. Thus, supposing that, with repeated accumulations of £100,000, the rate of profit should fall from 20 to 19, to 18, to 17%, a constantly diminishing rate, we should expect that the whole amount of profits received by those successive owners of capital would be always progressive; that it would be greater when the capital was £200,000, than when £100,000; still greater when £300,000; and so on, increasing, though at a diminishing rate, with every increase of capital. This progression, however, is only true for a certain time; thus 19% on £200,000 is more than 20% on £100,000; again 18% on £300,000 is more than 19% on £200,000; but after capital has accumulated to a large amount, and profits have fallen, the further accumulation diminishes the aggregate of profits. Thus, suppose the accumulation should be £1,000,000, and the profits 7%, the whole amount of profits will be £70,000; now if an addition of £100,000 capital be made to the million, and profits should fall to 6%, £66,000 or a diminution of £4,000 will be received by the owners of the stock, although the whole amount of stock will be increased from £1,000,000 to £1,100,000." — Ricardo, *Political Economy*, Chap. VI (*Works*, ed. by MacCulloch,

1852, pp. 68-69). — The fact is, that the assumption has here been made that the capital increases from 1,000,000 to 1,100,000, that is, by 10%, while the rate of profit falls from 7 to 6, hence by $14\frac{2}{7}\%$. *Hinc illae lacrimae!* ['Thus these tears' - Publius, Terence, *Andria*, Act I, Scene 1. — *Ed.*]
