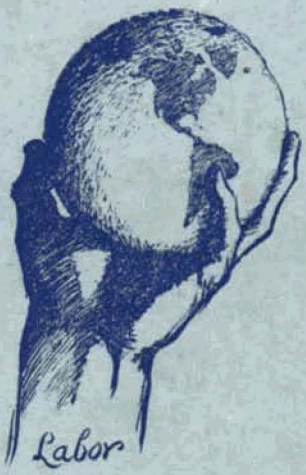
MARXISM AND DARWINISM

By ANTON PANNEKOEK



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ANTON PANNEKOEK

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"SURVIVAL OF THE FITTEST."

In northern climes, the polar bear
Protects himself with fat and hair,
Where snow is deep and ice is stark,
And half the year is cold and dark,
He still survives a clime like that
By growing fur, by growing fat.
These traits, O bear, which thou transmittest
Prove the Survival of the Fittest.

To polar regions waste and wan,
Comes the encroaching race of man,
A puny, feeble, little bubber,
He has no fur, he has no blubber.
The scornful bear sat down at ease
To see the stranger starve and freeze—
But, lo! the stranger slew the bear,
And ate his fat and wore his hair;
These deeds, O Man, which thou committest
Prove the Survival of the Fittest.

In modern times the Millionaire
Protects himself as did the bear:
Where Poverty and Hunger are
He counts his bullion by the car:
Where thousands perish still he thrives—

The wealth, O Croesus, thou transmittest
Proves the Survival of the Fittest.

But, lo, some people odd and funny,
Some men without a cent of money—
The simple common human race
Chose to improve their dwelling place:
They had no use for millionaires,
They calmly said the world was theirs,
They were so wise, so strong, so many,
The Millionaires?—there wasn't any.
These deeds, O Man, which thou committest
Prove the Survival of the Fittest.

—Mrs. Charlotte Stetson.

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MARXISM *and* DARWINISM

I. DARWINISM.

Two scientists can hardly be named who have, in the second half of the 19th century, dominated the human mind to a greater degree than Darwin and Marx. Their teachings revolutionized the conception that the great masses had about the world. For decades their names have been on the tongues of everybody, and their teachings have become the central point of the mental struggles which accompany the social struggles of today. The cause of this lies primarily in the highly scientific contents of their teachings.

The scientific importance of Marxism as well as of Darwinism consists in their following out the theory of evolution, the one upon the domain of the organic world, of things animate; the other, upon the domain of society. This theory of evolution, however, was in no way new, it had its advocates before Darwin and Marx; the philosopher, Hegel, made it even as the central point of his philosophy. It is, therefore, necessary to observe closely what were the achievements of Darwin and Marx in this domain.

The theory that plants and animals have developed one from another is met with first in the nineteenth century. Formerly the question, "Whence come all these thousands and hundreds of thousands of different kinds of plants and animals that we

know?" was answered. "At the time of creation God created them all, each after its kind." This primitive theory was in conformity with the experiences had and with the oldest information that could be got. According to the information, all known plants and animals have always been the same. Scientifically, this experience was thus expressed, "All kinds are invariable because the parents transmit their characteristics to their children."

There were, however, some peculiarities among plants and animals which gradually forced a different conception to be entertained. They so nicely let themselves be arranged into a system which was first set up by the Swedish scientist Linnaeus. According to this system, the animals are divided into main divisions; these divisions are divided into classes, classes into orders, orders into families, families into species, each of which contain a few kinds. The more semblance there is in their characteristics, the nearer they stand towards each other in this system, and the smaller is the group to which they belong. All the animals classed as mammalian show the same general characteristics in their bodily frame. The herbivorous animals, and carnivorous animals, and monkeys, each of which belongs to a different order, are again differentiated. Bears, dogs, and cats, all of which are rapacious animals, have much more in common in bodily form than they have with horses or monkeys. This conformity is still more obvious when we examine varieties of the same species; the cat, tiger and lion resemble each other in many respects where they differ from dogs and bears. If we turn from the class of mammals to other classes, such as birds or fishes, we find greater differences than we find in the other class.

There is still, however, a slight resemblance in the formation of the body, the skeleton and the nervous system are still there. These features first disappear when we turn from this main division, which embraces all the vertebrates, and go to the molluscs (soft bodied animals) or to the polyps.

The entire animal world may thus be arranged into divisions and subdivisions. Had every different kind of animal been created entirely independent of all the others, there would be no reason why such orders should exist. There would be no reason why there should not be mammals having six paws. We would have to assume, then, that at the time of creation, God had taken Linnaeus' system as a plan and created everything according to this plan. Happily we have another way of accounting for it. The likeness in the construction of the body may be due to a real family relationship. According to this conception, the conformity of peculiarities show how near or remote the relationship is; just as the resemblance of brothers and sisters is greater than between remote relatives. The animal classes were, therefore, not created individually, but descended one from another. They form one trunk that started with simple foundations and which has continually developed; the last and thin twigs are our present existing kinds. All species of cats descend from a primitive cat, which together with the primitive dog and the primitive bear, is the descendant of some primitive type of rapacious animal. The primitive rapacious animal, the primitive hoofed animal and the primitive monkey have descended from some primitive mammal, etc.

This theory of descent was advocated by Lamarck and by Geoffrey St. Hilaire. It did not, however, meet

with general approval. These naturalists could not prove the correctness of this theory and, therefore, it remained only a hypothesis, a mere assumption. When Darwin came, however, with his main book, The Origin of Species, it struck like a thunderbolt; his theory of evolution was immediately accepted as a strongly proved truth. Since then the theory of evolution has become inseparable from Darwin's name. Why so?

This was partly due to the fact that through experience ever more material was accumulated which went to support this theory. Animals were found which could not very well be placed into the classification such as oviparous mammals (that is, animals which lay eggs and nourish their offspring from their breast.—Translator) fishes having lungs, and invertebrate animals. The theory of descent claimed that these are simply the remnants of the transition between the main groups. Excavations have revealed fossil remains which looked different from animals living now. These remains have partly proved to be the primitive forms of our animals, and that the primitive animals have gradually developed to existing ones. Then the theory of cells was formed; every plant, every animal, consists of millions of cells and has been developed by incessant division and differentiation of single cells. Having gone so far, the thought that the highest organisms have descended from primitive beings having but a single cell, could not appear as strange.

All these new experiences could not, however, raise the theory to a strongly proved truth. The best proof for the correctness of this theory would have been to have an actual transformation from one animal

kind to another take place before our eyes, so that we could observe it. But this is impossible. How then is it at all possible to prove that animal forms are really changing into new forms? This can be done by showing the cause, the propelling force of such development. This Darwin did. Darwin discovered the mechanism of animal development, and in doing so he showed that under certain conditions some animal-kinds will necessarily develop into other animal-kinds. We will now make clear this mechanism.

Its main foundation is the nature of transmission, the fact that parents transmit their peculiarities to children, but that at the same time the children diverge from their parents in some respects and also differ from each other. It is for this reason that animals of the same kind are not all alike, but differ in all directions from the average type. Without this so-called variation it would be wholly impossible for one animal species to develop into another. All that is necessary for the formation of a new species is that the divergence from the central type become greater and that it goes on in the same direction until this divergence has become so great that the new animal no longer resembles the one from which it descended. But where is that force that could call forth the ever growing variation in the same direction?

Lamarck declared that this was owing to the usage and much exercise of certain organs; that, owing to the continuous exercise of certain organs, these become ever more perfected. Just as the muscles of men's legs get strong from running much, in the same way the lion acquired its powerful paws and the hare its speedy legs. In the same way the giraffes got their long necks because in order to reach the tree leaves,

which they ate, their necks were stretched so that a short-necked animal developed to the long-necked giraffe. To many this explanation was incredible and it could not account for the fact that the frog should have such a green color which served him as a good protecting color.

To solve the same question, Darwin turned to another line of experience. The animal breeder and the gardener are able to raise artificially new races and varieties. When a gardener wants to raise from a certain plant a variety having large blossoms, all he has to do is to kill before maturity all those plants having small blossoms and preserve those having large ones. If he repeats this for a few years in succession, the blossoms will be ever larger, because each new generation resembles its predecessor, and our gardener, having always picked out the largest of the large for the purpose of propagation, succeeds in raising a plant with very large blossoms. Through such action, done sometimes deliberately and sometimes accidentally, people have raised a great number of races of our domesticated animals which differ from their original form much more than the wild kinds differ from each other.

If we should ask an animal-breeder to raise a long-necked animal from a short-necked one, it would not appear to him an impossibility. All he would have to do would be to choose those having partly longer necks, have them inter-bred, kill the young ones having narrow necks and again have the long-necked inter-breed. If he repeated this at every new generation the result would be that the neck would ever become longer and we would get an animal resembling the giraffe.

This result is achieved because there is a definite will with a definite object, which, to raise a certain variety, chooses certain animals. In nature there is no such will, and all the deviations must again be straightened out by interbreeding, so that it is impossible for an animal to keep on departing from the original stock and keep going in the same direction until it becomes an entirely different species. Where, then, is that power in nature that chooses the animals just as the breeder does?

Darwin pondered this problem long before he found its solution in the "struggle for existence." In this theory we have a reflex of the productive system of the time in which Darwin lived; because it was the capitalist competitive struggle which served him as a picture for the struggle for existence prevailing in nature. It was not through his own observation that this solution presented itself to him. It came to him by his reading the works of the economist Malthus. Malthus tried to explain that in our bourgeois world there is so much misery and starvation and privation because population increases much more rapidly than the existing means of subsistence. There is not enough food for all; people must, therefore, struggle with each other for their existence, and many must go down in this struggle. By this theory capitalist competition as well as the misery existing were declared as an unavoidable natural law. In his autobiography Darwin declares that it was Malthus' book which made him think about the struggle for existence.

"In October, 1838, that is, fifteen months after I had begun my systematic inquiry, I happened to read for amusement Malthus on population, and being well prepared to appreciate the struggle for existence which

everywhere goes on from long continuous observation of the habits of animals and plants, it at once struck me that under these circumstances favorable variations would tend to be preserved, and unfavorable ones to be destroyed. The result of this would be the formation of new species. Here, then, I had at last got a theory by which to work."

It is a fact that the increase in the birth of animals is greater than the existing food permits of sustaining. There is no exception to the rule that all organic beings tend to increase so rapidly that our earth would be overrun very soon by the offspring of a single pair, were these not destroyed. It is for this reason that a struggle for existence must arise. Every animal tries to live, does its best to eat, and seeks to avoid being eaten by others. With its particular peculiarities and weapons it struggles against the entire antagonistic world, against animals, cold, heat, dryness, inundations, and other natural occurrences that may threaten to destroy it. Above all, it struggles with the animals of its own kind, who live in the same way, have the same peculiarities, use the same weapons and live by the same nourishment. This struggle is not a direct one; the hare does not struggle directly with the hare, nor the lion with the lion—unless it is a struggle for the female—but it is a struggle for existence, a race, a competitive struggle. All of them can not reach a grown-up age; most of them are destroyed, and only those who win the race remain. But which are the ones to win in the race? Those which, through their peculiarities, through their bodily structures are best able to find food or to escape an enemy; in other words, those which are best adapted to existing conditions will survive. "Because there

are ever more individuals born than can remain alive, the struggle as to which shall remain alive must start again and that creature that has some advantage over the others will survive, but as these diverging peculiarities are transmitted to the new generations, nature itself does the choosing, and a new generation will arise having changed peculiarities."

Here we have another application for the origin of the giraffe. When grass does not grow in some places, the animals must nourish themselves on tree leaves, and all those whose necks are too short to reach these leaves must perish. In nature itself there is selection, and nature selects only those having long necks. In conformity with the selection done by the animal breeder, Darwin called this process "natural selection."

This process must necessarily produce new species. Because too many are born of a certain species, more than the existing food supply can sustain, they are forever trying to spread over a larger area. In order to procure their food, those living in the woods go to the plain, those living on the soil go into the water, and those living on the ground climb on trees. Under these new conditions divergence is necessary. These divergencies are increased, and from the old species a new one develops. This continuous movement of existing species branching out into new relations results in these thousands of different animals changing still more.

While the Darwinian theory explains thus the general descent of the animals, their transmutation and formation out of primitive beings, it explains, at the same time, the wonderful conformity throughout nature. Formerly this wonderful conformity could

only be explained through the wise superintending care of God. Now, however, this natural descent is clearly understood. For this conformity is nothing else than the adaptation to the means of life. Every animal and every plant is exactly adapted to existing circumstances, for all those whose build is less conformable are less adapted and are exterminated in the struggle for existence. The green-frog, having descended from the brown-frog, must preserve its protecting color, for all those that deviate from this color are sooner found by the enemies and destroyed or find greater difficulty in obtaining their food and must perish.

It was thus that Darwin showed us, for the first time, that new species continually formed out of old ones. The theory of descent, which until then was merely a presumptive inference of many phenomena that could not be explained well in any other way, gained the certainty of an absolute inference of definite forces that could be proved. In this lies the main reason that this theory had so quickly dominated the scientific discussions and public attention.

II. MARXISM.

If we turn to Marxism we immediately see a great conformity with Darwinism. As with Darwin, the scientific importance of Marx's work consists in this, that he discovered the propelling force, the cause of social development. He did not have to prove that such a development was taking place; every one knew that from the most primitive times new social forms

ever supplanted older, but the causes and aims of this development were unknown.

In his theory Marx started with the information at hand in his time. The great political revolution that gave Europe the aspect it had, the French Revolution, was known to everyone to have been a struggle for supremacy, waged by the bourgeois against nobility and royalty. After this struggle new class struggles originated. The struggle carried on in England by the manufacturing capitalists against the landowners dominated politics; at the same time the working class revolted against the bourgeoisie. What were all these classes? Wherein did they differ from each other? Marx proved that these class distinctions were owing to the various functions each one played in the productive process. It is in the productive process that classes have their origin, and it is this process which determines to what class one belongs. Production is nothing else than the social labor process by which men obtain their means of subsistence from nature. It is the production of the material necessities of life that forms the main structure of society and that determines the political relations and social struggles.

The methods of production have continuously changed with the progress of time. Whence came these changes? The manner of labor and the productive relationship depend upon the tools with which people work, upon the development of technique and upon the means of production in general. Because in the Middle Ages people worked with crude tools, while now they work on gigantic machinery, we had at that time small trade and feudalism, while now we have capitalism; it is also for this reason that at that time the feudal nobility and the small bourgeoisie were the

most important classes, while now it is the bourgeoisie and the proletarians which are the classes.

It is the development of tools, of these technical aids which men direct, which is the main cause, the propelling force of all social development. It is self-understood that the people are ever trying to improve these tools so that their labor be easier and more productive, and the practice they acquire in using these tools, leads their thoughts upon further improvements. Owing to this development, a slow or quick progress of technique takes place, which at the same time changes the social forms of labor. This leads to new class relations, new social institutions and new classes. At the same time social, i. e., political struggles arise. Those classes predominating under the old process of production try to preserve artificially their institutions, while the rising classes try to promote the new process of production; and by waging the class struggles against the ruling class and by conquering them they pave the way for the further unhindered development of technique.

Thus the Marxian theory disclosed the propelling force and the mechanism of social development. In doing this it has proved that history is not something irregular, and that the various social systems are not the result of chance or haphazard events, but that there is a regular development in a definite direction. In doing this it was also proved that social development does not cease with our system, because technique continually develops.

Thus, both teachings, the teachings of Darwin and of Marx, the one in the domain of the organic world and the other upon the field of human society, raised the theory of evolution to a positive science.

In doing this they made the theory of evolution acceptable to the masses as the basic conception of social and biological development.

III. MARXISM AND THE CLASS STRUGGLE.

While it is true that for a certain theory to have a lasting influence on the human mind it must have a highly scientific value, yet this in itself is not enough. It quite often happened that a scientific theory was of utmost importance to science, nevertheless, with the probable exception of a few learned men, it evoked no interest whatsoever. Such, for instance, was Newton's theory of gravitation. This theory is the foundation of astronomy, and it is owing to this theory that we have our knowledge of heavenly bodies, and can foretell the arrival of certain planets and eclipses. Yet, when Newton's theory of gravitation made its appearance, a few English scientists were its only adherents. The broad mass paid no attention to this theory. It first became known to the mass by a popular book of Voltaire's written a half century afterwards.

There is nothing surprising about this. Science has become a specialty for a certain group of learned men, and its progress concerns these men only, just as smelting is the smith's specialty, and an improvement in the smelting of iron concerns him only. Only that which all people can make use of and which is found by everyone to be a life necessity can gain adherents among the large mass. When, therefore, we see that a certain scientific theory stirs up zeal and passion in the large mass, this can be attributed to

the fact that this theory serves them as a weapon in the class struggle. For it is the class struggle that engages almost all the people.

This can be seen most clearly in Marxism. Were the Marxian economic teachings of no importance in the modern class struggle, then none but a few professional economists would spend their time on them. It is, however, owing to the fact that Marxism serves the proletarians as a weapon in the struggle against capitalism that the scientific struggles are centered on this theory. It is owing to this service that Marx's name is honored by millions who know even very little of his teaching, and is despised by thousands that understand nothing of his theory. It is owing to the great role the Marxian theory plays in the class struggle that his theory is diligently studied by the large mass and that it dominates the human mind.

The proletarian class struggle existed before Marx for it is the offspring of capitalist exploitation. It was nothing more than natural that the workers, being exploited, should think about and demand another system of society where exploitation would be abolished. But all they could do was to hope and dream about it. They were not sure of its coming to pass. Marx gave to the labor movement and Socialism a theoretical foundation. His social theory showed that social systems were in a continuous flow wherein capitalism was only a temporary form. His studies of capitalism showed that owing to the continuous development of perfection of technique, capitalism must necessarily develop to Socialism. This new system of production can only be established by the proletarians struggling against the capitalists, whose interest it is to maintain the old system of production. So-

cialism is therefore the fruit and aim of the proletarian class struggle.

Thanks to Marx, the proletarian class struggle took on an entirely different form. Marxism became a weapon in the proletarian hands; in place of vague hopes he gave a positive aim, and in teaching a clear recognition of the social development he gave strength to the proletarian and at the same time he created the foundation for the correct tactics to be pursued. It is from Marxism that the workingmen can prove the transitoriness of capitalism and the necessity and certainty of their victory. At the same time Marxism has done away with the old utopian views that Socialism would be brought about by the intelligence and good will of some judicious men; as if Socialism were a demand for justice and morality; as if the object were to establish an infallible and perfect society. Justice and morality change with the productive system, and every class has different conceptions of them. Socialism can only be gained by the class whose interest lies in Socialism, and it is not a question about a perfect social system, but a change in the methods of production leading to a higher step, i. e., to social production.

Because the Marxian theory of social development is indispensable to the proletarians in their struggle, they, the proletarians, try to make it a part of their inner self; it dominates their thoughts, their feelings, their entire conception of the world. Because Marxism is the theory of social development, in the midst of which we stand, therefore Marxism itself stands as the central point of the great mental struggles that accompany our economic revolution.

IV. DARWINISM AND THE CLASS STRUGGLE.

That Marxism owes its importance and position only to the role it takes in the proletarian class struggle, is known to all. With Darwinism, however, things seem different to the superficial observer, for Darwinism deals with a new scientific truth which has to contend with religious prejudices and ignorance. Yet it is not hard to see that in reality Darwinism had to undergo the same experiences as Marxism. Darwinism is not a mere abstract theory which was adopted by the scientific world after discussing and testing it in a mere objective manner. No, immediately after Darwinism made its appearance, it had its enthusiastic advocates and passionate opponents; Darwin's name, too, was either highly honored by people who understood something of his theory, or despised by people who knew nothing more of his theory than that "man descended from the monkey," and who were surely unqualified to judge from a scientific standpoint the correctness or falsity of Darwin's theory. Darwinism, too, played a role in the class-struggle, and it is owing to this role that it spread so rapidly and had enthusiastic advocates and venomous opponents.

Darwinism served as a tool to the bourgeoisie in their struggle against the feudal class, against the nobility, clergy-rights and feudal lords. This was an entirely different struggle from the struggle now waged by the proletarians. The bourgeoisie was not an exploited class striving to abolish exploitation. Oh no. What the bourgeoisie wanted was to get rid of the old ruling powers standing in their way. The bourgeoisie themselves wanted to rule, basing their demands upon the fact that they were the most impor-