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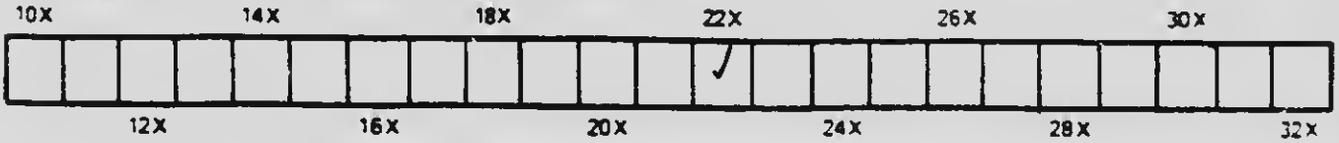

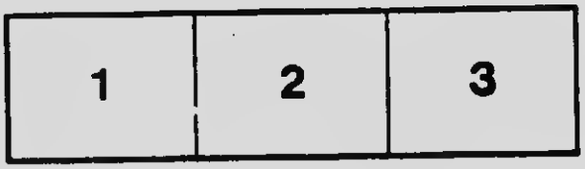

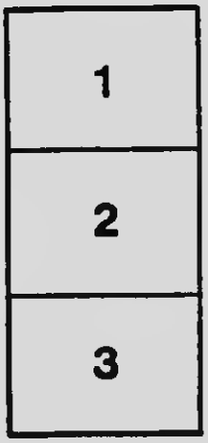

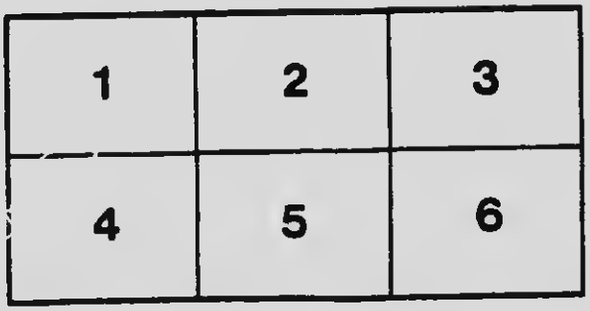

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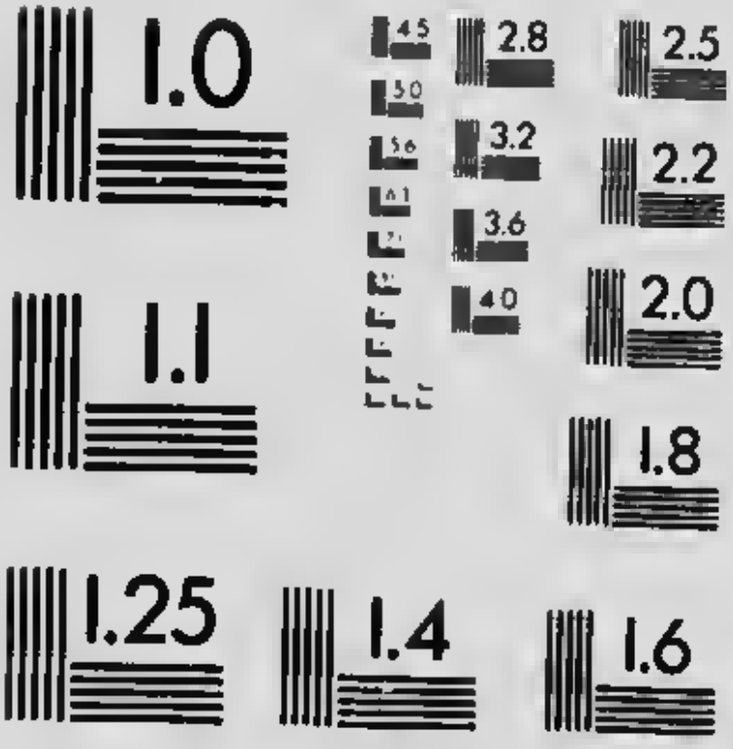

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Socialism *and the* Survival *of the* Fittest

BY J. CONNELL
AUTHOR OF "THE RED FLAG"

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Socialism *and* the Survival *of* the Fittest

There are people who tell us that Socialism is opposed to the teaching of Science, and that, therefore, it must be unsound. Those people say that the struggle for existence is a physiological law, and that to end it, or even to mitigate its severity, must result in the deterioration of the human species. I desire to say at once that if Socialism were opposed to Science I should immediately reject it. However forcibly it might appeal to the sentimental side of human nature it would not, in that case, be worth supporting. Science is knowledge of the laws of nature. If Socialism were opposed to those laws, even if established, it could not last. Nature, in the long run, always shapes her ends in her own way, and fighting against her is folly, or even crime. But I hold that Socialism is not opposed to the teaching of Science, and I hope to prove in this essay that those who say it is know very little about Science or else very little about Socialism. or perhaps very little about either. I undertake to show not only that Socialism is consistent with the laws of nature, but also that its antagonist, Individualism, as we know it, is utterly inconsistent with those laws. In order to do this it is necessary to explain the natural laws which govern the problem under consideration. A knowledge of the road along which man has travelled in the past will enable us to take an intelligent view of his position in the present, and of the possibilities which are open to him in the future.

ANTIQUITY OF MAN.

The scientific view is that man is the result of an evolutionary process, and if the reader is o understand this process he must banish from his mind the notion that man was first created about six thousand years ago. There is no desire here of attacking theology, but it is necessary for the purposes of the argument to explain that man lived on this earth not only more than six thousand years ago, but more than sixty thousand, and probably very much more than six hundred thousand years ago. If we were to assume that the world was created only six thousand years ago, as is asserted in certain Jewish documents, then the modern scientific theory of evolution would have to be dropped, as that time would be by no means sufficient to account for the

immense changes in structure which, according to the teachings of Science, have taken place in almost all species. It has long seemed to the present writer that the facts, which are obvious to all of us, abundantly disprove the reliability of the so-called Mosaic account of creation. It seems utterly incredible that the different races of men on the earth to day have differentiated and descended from a common stock in six thousand years. The Negro and the Caucasian, the Patagonian and the Laplander, the timid New Hollander and the innovating Frenchman, the stolid Chinaman and the vivacious Celt, the warlike Red Indian and the philosophical Hindu—can all these have descended from the Adam and Eve of Genesis? Let it be borne in mind that, according to the book, Adam and Eve were created perfect, and even immortal. Had the apple not been eaten, immersion in the depths of the sea for a week, or blowing to pieces with gunpowder, would not have killed them. To what an appalling extent have we degenerated! Do those who scornfully reject the view that men have evolved from monkeys, or some other of the lower forms, quite realize that, according to the alternative theory with which they provide us, men are last degenerating into monkeys, and ultimately into something very much lower? Let us leave this part of the subject with just one remark. It is not here contended that God did not make man. The contention is that, if he interfered in the matter at all, God, in making Nature, endowed her with laws and forces capable of producing all the results we see, man included.

Evidences of the antiquity of man are scattered all over the earth. One or two points only can be dealt with here. The proofs furnished by the delta of the Mississippi may be taken first.

The Mississippi delta is a triangular stretch of country beginning at the seashore at either side of the river's mouth, and extending, or rather narrowing, to a point some two hundred miles up the stream. It is formed of alluvial matter deposited in a manner about to be described. The Mississippi, with the Missouri, is the longest river in the world, and is fed by numerous tributary streams. It, in fact, drains an immense area. At some part or other of this area floods are constantly occurring. Everybody knows that floods of even moderate dimensions wash away river banks and bottoms and carry the solid matter downward towards the sea. Thus is the Mississippi constantly being charged at some point with leaves or grass or earth. As the river and its tributaries take their rise in high altitudes, the water flows rather rapidly and carries the solid matter along. This happens until a point is reached about two hundred miles from the sea. Here a level country is encountered, the river widens, the water flows sluggishly, and the solid matter is gradually but surely deposited on the bottom. It happens that this part of the world is peculiarly adapted for the production of cypress trees. If an area be cleared it will be found to be covered with a cypress forest in a very short time.

We will ask the reader to come back with us in imagination to the time when the conformation of this part of the American continent first became what it is today. That which is now the delta of the Mississippi was then a valley, bounded on either side by a row of hills, which the Yankees call bluffs. In flowing towards the sea the river selected as its channel the lowest

part of this valley. The solid matter which it brought down was deposited on the bottom, with the result that the river-bed at once began to be elevated. The process was continued until the bed of the river was above the level of the surrounding country. The water, naturally, then sought a lower level, leaving the first bed high and dry. This, in a few years, was covered with a forest of cypress trees. In the meantime the river began to elevate its second bed, as it had elevated the first. In due course, that also became higher than the surrounding country, was then deserted for a third channel, and soon covered with a cypress forest. It will be sufficient to say that the third and all subsequent channels were treated in the same way as the first two. The river at one time or other flowed over every part of the valley. It could not go outside certain limits because of the bluffs. Every part of the surface was elevated in turn, and in time the first bed, which was deserted because it was the highest part of the valley, had again become the lowest. Then the river returned to it, and found growing there a forest of cypress trees, which it promptly levelled, and soon covered with a layer of the solid matter brought down by the water. In due course this bed was again deserted, and after every other part of the valley had been elevated, was again sought. Enough has now been said to enable the reader to understand the process. The alluvial matter of the valley has been found to be 528 feet deep, and to contain eleven cypress forests, showing that the river has run over some parts as many as eleven times. The rate at which the matter is being deposited can be measured, and is known. Human remains have been discovered in many parts of the delta, under several of the buried forests, and in one case in a stratum which all geologists are agreed is older than all of them. The minimum time which has elapsed since those remains were deposited where they were found has been ascertained in the following manner: The age of a tree can always be found by counting its rings of annual growth. The geologists took one tree from each of the buried forests, counted its rings, added all together, and got a total of over fifty-seven thousand years. Let it be borne in mind that this is but the minimum age of the remains. Each of the forests may have lived much longer than any one of its trees, longer in fact than a dozen trees, but we know it must have lived as long as one. Besides, in this calculation no account is taken of the long periods which elapsed between the destruction of one forest and the birth of the next. That enormous mass of alluvial matter probably took hundreds of thousands of years to accumulate. But, taking the minimum named, it follows that fifty-seven thousand years ago men lived in North America. What, then, must we think of the statement that man was first made less than six thousand years ago?

But one need not go to America to find proofs of man's antiquity. They exist here at home. Near the town of Torquay in Devonshire, there is a cavern called Kent's Cavern, in a limestone hill, which will probably satisfy the most exacting inquirer. Kent's Cavern is simply a hole in the rock, with a floor of dissolved limestone, commonly called stalagmite. In order that the reader may appreciate the significance of the facts, it is necessary to explain how this substance is formed. Pure water will not dissolve limestone, but a slight admixture of the gas known as carbonic acid will enable it to do so. This exists in the air and in plants. The rain, in falling, acquires a little car-

bonic acid from the atmosphere through which it descends, and a little more from the plants on which it falls. When it reaches the surface of the hill it percolates through fissures in the rock, dissolving the limestone in its descent, and when the roof of the cavern is reached some of the dissolved matter adheres to it in the form of icicles, whilst the remainder falls to the ground and forms a floor. Where the drip from the roof is great, the floor rises like a hillock; where it is slight, the floor sinks. It is characteristic of the English people that wherever they go they deface objects of interest with their names, or at least with their initials. The pyramids of Egypt, the catacombs of Rome, and the temples of India are alike disfigured by the names of Smith, Brown and Robinson. It is not surprising that the floor of Kent's Cavern has been treated in a similar manner. Not only names but dates are to be found carved on the stalagmite with a chisel. Some of the dates are hundreds of years old, and are covered with coatings of stalagmite of various thicknesses. By measuring the thickness of these coatings one can ascertain the rate at which the floor is being formed. One inscription in particular was found at a spot where the drip from the roof was greatest, and where, therefore, the floor was being formed most rapidly. The coating of stalagmite over this inspcription, which bore a date, was carefully measured, and the rate of the formation thus ascertained. The total thickness of the floor was measured next, and it was then perceived that the latter could not have been formed in less than one million years. Yet underneath this floor, implements made by the hands of man have been discovered. For further information on this subject the reader is referred to the writings of William Pengelly on the Cave Men of Devonshire. Mr. Pengelly superintended exacavations in, and paid daily visits to, Kent's Cavern for about twenty years.

It is very clear that if men lived in Devonshire a million years ago, the Mosaic account of man's origin cannot be correct. Reliable information concerning that origin must be sought elsewhere, and we will now proceed to seek it.

ORIGIN OF LIFE

For many years, Doctor Otto von Schron, Professor of Pathological Anatomy in the University of Naples, has been making investigations into the propagation and development of bacilli. In the course of his experiments he discovered that living matter, largely albuminous in character, takes the crystalline form, and, while still living and crystalline, obeys so many of the laws, and manifests so many of the properties of inorganic crystallisation, as to leave no doubt whatever of its crystalline character. The conclusion he draws from this is that crystallisation in its terrestrial origin is a manifestation of the force called life force.

There are probably few persons who have not observed what are called frost-ferns on their window panes in the winter mornings. Many of these objects bear but a slight resemblance to ferns, but if a large number be examined some are sure to be found bearing an astonishing resemblance. The line of research here indicated may be followed up with great profit in the following manner.

Let the reader take a block of ice, say one cubic foot in extent, and place it on a table. Let him cause a beam of heat to play for some time on one side of the block. Let him now shut off the heat and apply a beam of light to the same side in such a manner as to cause an image of the melted parts of the ice to fall on a screen. He will find that all parts of the ice have not been melted equally, but that several portions have been singled out for attack and others left comparatively untouched. He will find that the melted parts, as shown on the screen, bear the shape of beautiful flowers, each with six petals. How comes it that crystals contain forms similar to those we find endowed with vegetable life in the gardens and the fields? Ice is simply water solidified. It is water to which nothing has been added, and from which nothing but heat has been taken away. How comes it to contain flower-forms? The explanation is that, in coming together to form a solid, the particles of water take their places in obedience to fixed laws. Facts such as this are important, for, in considering the problem of the origin of life they will be found to lie at the very root of its solution. Tyndall told us that he observed those things hundreds of times and every time was more and more astounded. The observer may begin at the simple of those crystalline forms and go upward through others more complex. At a certain stage he will encounter characteristics of the vegetable kingdom. The farther he goes above this point the more plentiful will become vegetable characteristics and the more scarce crystalline, until the latter cease altogether, and the observer knows definitely that he is in the region of vegetables. In the same way he can ascend through the vegetable kingdom, passing by easy stages from family to family and from species to species, all closely related. At a certain point he begins to encounter animal characteristics. The farther he goes above this point the more frequently does he meet animal characteristics and the less frequently vegetable, until the latter cease altogether, and he knows that he is in the region of animals. In the same way he can pass through the animal kingdom, from the lowest to the highest, which he will find in his own body. The point to be particularly noted is that between the crystalline kingdom and the vegetable kingdom, and again between the vegetable kingdom and the animal kingdom, there is no dividing line. Tyndall said that the man never lived who could tell where one ends and the other begins. In each case the two kingdoms fit into each other like the cogs of two wheels. We have thus a world of forms showing, from the lowest to the highest, a close and unbroken relation pointing to a common origin, and an evolutionary process. In truth, the life principle is at least co-extensive with the material principle, manifesting itself when the conditions are favourable and disappearing when the conditions are unfavorable.

THE STRUGGLE FOR EXISTENCE AND THE SURVIVAL OF THE FITTEST.

Other crystals are even richer in forms resembling those described, but as ice has been mentioned it may as well be adhered to. Every time a drop of water is frozen such forms are produced. When it is remembered that,

every winter, many millions of square miles of water are frozen, some idea may be obtained of the enormous number of those forms which are annually called into existence. If, as we suggest, there be a transition from apparently lifeless crystalline forms to living vegetable and animal forms, then some correspondence in point of numbers must be looked for between the former and the lower species of the latter. This is exactly what we find. As the same laws govern the vegetable and animal kingdoms, there is no need to deal with both in this essay. We will take the latter, as it is the more closely connected with the evolution of man.

Very few persons are aware of the enormous number of simple animal organisms which the earth presents evidence of having produced. The chalk beds, which cover a huge area, are composed almost entirely of animal remains. Almost all the limestone rock in the world is built up of the same material. In many places the sands of the sea-shore are almost wholly the remains of shell-fish. It will be remembered that in marching across the Egyptian deserts our soldiers were almost blinded by the sand which every breeze drove in clouds. But ordinary sand, which is powdered rock, could not be blown so easily. The sand of the desert, like that of some parts of the sea-shore, is really the remains of shell-fish. All this will help to convey some idea of the prodigious number of simple organisms which this earth has produced. The number, in fact, was, and still is, so great that it is impossible for all to find food. The moment food became scarce, there began among the creatures affected what is known to Science as the struggle for existence. Each was endowed with the instinct of self-preservation. Each would live if he could, but all could not live. Each strove against its neighbors, and at this stage the struggle often took the shape of cannibalism. All were not built exactly alike. The differences of structure were minute, but the slightest advantage in strength or activity gave its possessor an advantage in the struggle for existence. The creatures which were least able to cope with the difficulties around them perished, while those who were best able to do so survived. This result, common enough today, is known to Science as the survival of the fittest.

TRANSMISSION OF PECULIARITIES

The organisms which survived the struggle for existence were the fittest because of certain peculiarities of structure which gave them an advantage over their competitors. They either possessed organs which the others did not possess, or else they possessed similar organs of superior development. There is in nature a law which may be called the law of the Transmission of Peculiarities, which sends such endowments down to posterity. This law is well known to stock-breeders, and bird and dog-fanciers. If, for instance, a man wishes to breed a pigeon to win a prize in a show, he must first ascertain the "points" which are valued by those who act as judges in such matters. If he can find a male and a female bird possessing the coveted peculiarities he may breed a winner; but if he cannot find such, he stands little or no chance of accomplishing his purpose. The same statement holds

good of dogs. The "points" or peculiarities which constitute a dog a prize-winner are frequently transmitted to its offspring, and this causes such animals to be highly valued for stud purposes. One other illustration will suffice. The breed of cattle known as "short-horns" was developed by taking advantage of this law. Stockbreeders noticed that certain animals, presenting certain peculiarities, possessed certain advantages over their fellows which were valuable for market purposes. They selected male and female animals presenting the coveted peculiarities in the most marked degree procurable, and bred from them. From the progeny of those they again selected animals in which the prized peculiarities were most strongly marked, and bred from them. By repeating the operation sufficiently often a new breed of cattle was obtained, differing unmistakably from any previously known. Let us read the facts of nature in the light of this law.

For the sake of simplicity, let us imagine ourselves back at the first generation of living animal organisms. If the individuals composing it were allowed to breed indiscriminately, the second generation would, in all probability, be an exact reproduction of the first. But they were not allowed so to breed. The weakly, the malformed, the unfit, were killed off by the struggle for existence. The fit only were allowed to survive, and were thus, as it were, selected by nature for breeding purposes. It will now be seen that the second generation was not exactly a reproduction of the first, but, instead, was a reproduction of a selected portion of the first. The peculiarities which constituted fitness in the progenitors were reproduced in the offspring. The second generation was, therefore, an improvement on the first.

IMMENSE POWERS OF REPRODUCTION

Among the individuals of the second generation the struggle for existence was as keen as among those of the first. This was the result of the immense powers of reproduction possessed by those creatures. Few persons are aware of the extent of those powers even to-day. The common rabbit, if allowed to breed unchecked, would, in five years, eat up every blade of grass, and, in fact, every green thing in Britain, including the bark of trees. Without inflicting a scratch it would destroy all other land animals, man included, by starving them out. A single pair of rabbits will easily produce one hundred offspring within a year, and have been known to produce one hundred and sixty within that time. There is no more harmless animal than the sheep, but if allowed to breed unchecked, it would in a few years cover the whole land with its progeny. Among animals in a lower stage of evolution the reproductive power sometimes passes all understanding. The female cod will lay 9,000,000 eggs in a season, and experiments made in Trinity Bay, Newfoundland, prove that practically all those may be hatched out successfully. During five years the hatchery men placed in certain bays of that island the almost inconceivable number of 2,500,000,000 young lobsters, all the produce of a small quantity of spawn. The reproductive powers of the salmon are so great that it has been calculated that six couples would readily produce annually as many

salmon as are consumed by the whole human race. Other creatures known to science are almost independent of reproductive powers for multiplication. They may be cut up into a great many separate parts, and each part will then become a complete fish. Enough has been said to enable the reader to understand how it happened that what we will call the second generation of animal organisms felt the struggle for existence as keenly as did the first. The result also was similar—the elimination of the weakly and malformed, and the subsequent generations during the millions of years over which geology shows the earth to have existed. It is a case of perpetual struggle, and perpetual improvement.

If the surface of the globe were all over similar, or if, in other words, it presented only one set of conditions, there would in all probability be only one species of animal. Some one type would prove fitter than its competitors, and destroy them. But the surface of the globe is not uniform. On the contrary, it presents an almost infinite variety of conditions, and sets of conditions. Each set of conditions makes for the evolution of a distinct type. Very frequently the endowments which constitute fitness under one set of conditions would mean unfitness under another. One illustration will prove the truth of this statement. The heron is a bird well known in Britain. It is what we call a wader. Its long legs enable it to walk about with ease in shallow rivers and lakes, and its long neck and beak enable it to catch fish under stones and banks without diving. In short, its structure is such that the bird is admirably adapted to the life it leads. It would live where even a good swimmer annd diver like the duck would starve. In a country abounding in shallow ponds every generation would see the type accentuated. Its peculiarities of structure give it an advantage in the struggle for existence. But let us suppose the conditions changed. Let the heron be transported to a country containing little water, where it would be compelled to get its living on dry land. Then it would be found that its long legs and long neck, instead of being an advantage, were an incumbrance, and the previous tendency of natural selection to accentuate those peculiarities would disappear. A different structure would now be found useful in the struggle for existence, and the evolution of a fresh type would begin. Herbert Spencer puts the case very neatly when he says—

"Any species, when placed under new conditions, immediately begins to undergo changes of structure fitting it for the new conditions."

Again—

"The degrees of difference thus produced are often, as in dogs, greater than those on which distinctions of species are in other cases founded."

Further, he says—

"This influence would produce in the millions of years, and under the great varieties of conditions which geological records imply, any amount of change."

Material conditions are, however, not the only causes which operate to

produce improvement. At an early stage the action of mind becomes a highly important factor in the process, as we will now proceed to show.

SEXUAL SELECTION

It is a fact known to all who have studied the habits of animals that, when they come to pair, the female of most species invariably selects for mate the strongest and most courageous male. This she does, doubtless, for purposes of self-protection; but, whatever the motive, the choice has an important effect on her progeny. Let the reader note that, by the process of natural selection already described, the unfit are eliminated and only the fit allowed to survive for breeding purposes. Now, however, a second weeding-out of the rubbishy element takes place by means of sexual selection. Ultimately, therefore, the progenitors of the species are the fittest of the fit. The selection is not always consciously made by the female. In some species, at certain seasons, the males fight one another. During those battles the females stand apart, timidly awaiting the result. When the fight is over they walk off contentedly with the victor or victors. In both cases the result is the same. The fittest only survive and breed, and in accordance with a law already explained transmit the qualities which constitute fitness to the next generation.

But sexual selection does not affect strength and courage only. At a certain stage the artistic faculty makes its appearance, and the female permits admiration of beauty to modify her choice. The female bird of paradise has such an extraordinary appreciation of beauty that the very slightest advantage in the matter of plumage causes a male to be selected in preference to his rivals. The influence of this habit on the artistic development of the species will be obvious. The plumage of the peacock, the antlers of the stag, and the mane of the lion are all largely attributable to this cause.

USE AND DISUSE OF ORGANS.

Everybody is aware of the difference in muscular development between, say, the average blacksmith and the average clerk. The difference is greatest in the muscles of the arm. The explanation is simple. The muscles receive nourishment from the blood. The exercise of any organ causes the blood to flow freely to that organ, carrying nourishment, and causing the part to develop. On the other hand, the disuse of any organ impedes the flow of blood there, causing starvation of muscle and decay. An animal of any species will naturally use most, if not exclusively, the organs that are useful to it in the struggle for existence. Food is the first consideration with all animals, man included. Therefore, the organs that are useful in procuring food are developed, those that are not useful in that way decline, and in course of ages become rudimentary. This law helps animals still further to accommodate themselves to new conditions. A statement of it will enable the reader to understand that, in the long run, the conditions determine the type. Rudimentary organs enable the observer to perceive the road along which the species has travelled. They mark the stages of the evolutionary

process which has heen at work. Occasionally individuals appear having fully or at least fairly developed organs which are rudimentary in the normal member of the species. These are cases of reversion to an earlier type. Under natural conditions they are rare, but where development is hastened by artificial selection, as in the case of pigeons and dogs, they are very common.

MAN AND BRUTE.

In a short essay like this it is impossible to enumerate all the facts which have a bearing on the subject under discussion. On that subject books sufficient in point of numbers to form a respectable library have been written. All that is aimed at is the presentation in simple language of a few facts which support the modern scientific theory of evolution. It is hoped, however, that enough has been written to make the broad lines of that theory clear. The contention is that the laws and forces inherent in Nature have in the course of ages evolved all existing species, man included. The reader is asked to note that the explanation of organic existence here given is a natural one, and for that reason alone is infinitely more credible than any theory requiring the supernatural for its support. Miracles and acts of special creation have no place in our philosophy. We do not need them, for we can explain all without them.

The writer feels compelled to point out that the modern scientific theory of evolution is only a small part of the true philosophy of existence. That philosophy will be dealt with in a future essay, when the blanks unavoidable in this will be filled up. The present reasoning is, however, sound as far as it goes.

There is probably no human being alive to-day, whose opinion is of the least value, who will not agree that what are called the lower animals are the result of some such evolutionary process as that described above. But many will insist that man forms a class apart from the others and that his origin must be sought in some different quarter. Yet the most specific inspection of the facts will reveal so many resemblances between man and the lower animals that the theories of a different origin, and of accident, are at once perceived to be untenable. Let the reader place side by side a human skeleton and a skeleton of any of the mammalia, and he cannot fail to notice that the two are built on the same general plan. There is not in the human body a single bone, muscle, nerve, or blood-vessel which has not its counterpart in that of the monkey, bat and seal. Every fold in the human brain has its counterpart in that of the orang-outang. The embryo of man, dog, bat, seal, and reptile are all alike up to a certain point. The human fœtus is hairy. The hairs on man's body are the rudimentary remains of a coat which once covered him. That the ear of man was once pointed is shown by the rudimentary point which is still plainly visible, although turned inward, as in the monkey. Every man possesses a rudimentary tail, and instances are known in which this organ attained a length of several inches. Diseases such as hydrophobia, variola, and glanders are communicated by the lower animals

to man, and vice versa, showing similarity of constitution. Monkeys suffer from consumption, apoplexy, and cataract on the eye, and medicines given them produce the same effect as in man. They like alcoholic liquors, and in their wild state are often captured by means of them. Probably the most striking fact of all is that there are on record cases of human reversion to the ape type. In plain language, apes have been born of human parents.

Let no man feel aggrieved at having these facts set forth. The brute is our younger brother, and should be treated with the consideration due to his relationship and helplessness. Being behind us in the evolutionary journey, he should be treated as we would wish to be treated by those who are before us.

WHAT IS MEANT BY THE FITTEST.

The reader is warned against concluding that the fittest is necessarily the best. In point of fact it may be the worst. The tape-worm will survive in the human intestines until after the death of the man. Yet nobody would think of saying that the tape-worm was the better of the two. Nature abounds in similar examples: rats, mice, and other vermin will survive a famine which kills off human beings by the million. Therefore the fittest must be understood to mean the animal or type best suited for the conditions in which it happens to be placed. The fittest means the animal or type best able to conquer the difficulties of its situation. The fittest means the animal or type most in harmony with its environment. If the environment be undesirable the fittest for it will be undesirable also.

THE SOCIAL INSTINCT.

In the foregoing the writer has almost restrained himself to an exposition of the process of purely physical development. This has been done of set purpose for the reason that it is easier for young students of the subject, for whom this essay is intended, to grasp the evolutionary process if only one aspect of it be presented, and especially if that aspect be the physical one. It is hoped, however, that by this time the reader perceives that, on the lines indicated, physical development without mental development is inconceivable. The richest physical endowments would be useless to an animal if it lacked the wit to use them. Indeed, it may be said with confidence that, in most situations, an animal physically inferior and mentally robust would easily overcome and survive a rival physically superior but mentally weak. The same laws operate on the two planes, the physical and the mental. A very little reflection will enable the student to perceive that the struggle for existence improved mind as it improved body. The time has now arrived for stating a further, and, for our present purpose, a more important, outcome of the same struggle.

It is a fact, demonstrated by the trend of modern industry, that, say, ten men working collectively, or co-operatively, will achieve a greater result

than the same ten men working individually. What is true of men in this matter is just as true of animals. The tendency to work collectively, even in the most minor degree, gave its possessors an advantage in the struggle for existence. Like all other advantages, physical and mental, this was carefully encouraged and developed by nature. The individuals possessing it survived, and produced offspring after their kind, while those lacking it perished. Thus did another aspect of nature, the moral aspect, manifest itself. Bearing in mind that the same laws operate on all the planes of nature, the student will now understand that the struggle for existence which produced physical and mental improvement produced moral improvement as well. Under the influence of this latter product the struggle for existence changed its character in course of time. Low down in the organic scale the struggle for existence operates as between individual and individual; higher up it operates as between group and group. At the bottom of the scale universal cannibalism prevails, but the more clearly defined is any species the stronger is its social instinct. At the bottom of the scale we find pure individualism, whilst near the top, as, for instance, among ants, beavers and bees, we find pure communism prevailing. The intermediate stages are worth nothing. Lions and tigers do not rob one another of captured prey. When a young lion or tiger captures, say, an antelope, the older and stronger ones, which could readily take it away from him, will not do so. One does not expect to find much to admire in the ferocious carnivora, but it is worth noting that, whilst they war on all the rest of nature, they spare one another. Enough has been said to indicate that when the individuals comprising a species, or some of them, learn to co-operate they find themselves better able than they had previously been to compete with outside nature, and survive in consequence. Natural selection now acts as between species and species.

Some opponents of Socialism urge that when this stage is reached the weaklings of the co-operating species will have an equal chance of surviving with the strong and healthy, and that, in consequence, progress will be no longer made. Those gentlemen forget that, side by side with physical progress, mental and moral progress are taking place, and that when the stage in question is arrived at the physically unfit will be found strong enough mentally and morally to refuse to transmit their infirmities to posterity by means of procreation. If, as will undoubtedly happen, some are mentally and morally weak as well, then Society may be trusted to control them as it now controls most of its imbeciles. It should not be more difficult for a malformed human being to refrain from transmitting his misfortunes to posterity than it is for a hungry tiger to refrain from robbing his younger brother.

APPLYING THE TEST

The foregoing is a simple statement of natural conditions and their results. We will now endeavor to discover which social arrangement conforms most closely to those conditions, and would, therefore, be most likely to be productive of similar beneficient results. The existing arrangement is so well known that it needs little describing. It means individual ownership of land

and capital, the materials and implements of production with its accompaniments of competition, production for profit, and the man-made law of inheritance of property. Socialism, on the other hand, means collective ownership of the materials and implements of production, with co-operation in production and distribution, and provision of employment for all as concomitants. Socialism thus means throwing open to human labour the raw materials of nature, and allowing every man's reward to depend on his exertions. Which of these two conforms most closely to natural conditions? Let us run over the ground hastily. We will take first the struggle for existence. In a state of nature, all animals, at starting, enjoy equality of opportunity. It is obvious that under Socialism all men would be similarly situated. No portion of the earth's surface would be the exclusive possession of any man, just as no jungle or forest is the exclusive possession of any tiger or lion. No man would have power to compel other men to work for him, just as no lion can compel other lions to work for him, just as no lion can compel other lions to hunt for him. No man would be born into the world to find all his work done for him before he arrived, and the results awaiting him in the shape of his father's accumulations, just as no lion ever inherits anything from his parents except a sound constitution. In short, so far as the struggle for existence is concerned, the conditions under Socialism wold be exactly similar to those prevailing in a state of nature. Of course co-operation is not to be found among lions or tigers, but, as has been already pointed out, it is in full swing among such animals as ants, beavers, and bees. It follows from all this that under Socialism natural selection would operate as freely among men as among wild animals, resulting in the survival of the fittest, and the improvement of the species. Let us now see how it works under the existing Capitalistic arrangement.

To many who are born into the world nowadays the struggle for existence is unknown. They come to find the table ready spread, and they have nothing to do but sit down and eat, with a silver spoon. Their fathers have earned, or stolen (perhaps we should say "made") more than they will ever require. The struggle for existence does not affect *them*. They will probably survive, whether they are fit or not. They escape the test of fitness which nature imposes elsewhere, and transmit to posterity imperfections which ought to be eliminated. There is no struggle for existence; no survival of the fittest; and, consequently, no improvement of the species taking place among them.

On the other hand, those among us who are born poor are almost as far removed from natural conditions. The children of the poor die off many times more rapidly than do the children of the rich, owing to poor food and insanitary surroundings. They may be among the fittest, but they die nevertheless before they are old enough to take part in the struggle. Those who reach maturity find land and capital, the sources of their food supply, monopolised by others, and production for profit restricts their industry. They are handicapped at starting in the struggle. There is no equality of opportunity here. The test to which they are subjected is not a fair one; and, under the circumstances, failure does not prove them unfit to survive. Whether as affecting the poor

or the rich, the conditions are not those which prevail in a state of nature, and in the nature of the case the results must differ as widely as do the two sets of conditions. By means of an artificial social arrangement the process of natural selection is thrown out of operation, and evolution brought to a standstill. We will now deal with sexual selection.

We have already seen that in a state of nature the female selects for mate the strongest and most courageous male. After natural selection has done its work, sexual selection takes up the unfinished task and carries it a step further. The powerful influence of this secondary selection in improving the species is obvious at a glance. The choice of the female is determined by the instinct of self-preservation. It is clear that in a state of Socialism, with conditions similar to those prevailing in a state of nature, sexual selection would operate as it does in a state of nature, and would therefore render valuable assistance in evolving a higher type of humanity. Superior physique, courage, beauty, mental power, and moral worth would all attract the female, and influence her choice, thus assuring to the man of the future an unlimited degree of excellence in these qualities. But how does sexual selection act under Capitalism today? The instinct of self-preservation prompts the female to find a mate among the rich and the latter are not endowed to any exceptional extent with the qualities named. It may be said with safety that a hunchback earl or duke of the poorest mental equipment has today a thousand times better chance of begetting children than has the most gifted man who possesses no property. The instinct of self-preservation prompts the female to seek first of all an assured living, and it is not easy to see how this can be found among men of no property, whose own living is precarious. To deal exhaustively with the action of sexual selection under Capitalism would require more space than can possibly be devoted to the point in this essay. Doubtless various reflections will arise in the mind of the reader. For the present it must suffice to point out that, for the rich, the production of children is made artificially easy, and that solely because they *are* rich. If wealth were a mark of superiority, this state of affairs might inspire some hope for the future of the race; but is it? It cannot be argued that it is such in the case of those who are born rich, but we will consider whether those who win their wealth do so because they are superior to their neighbours. Everything in this connection depends on the commercial value of excellence, and excellence may be taken to be of three sorts—physical, mental, and moral. We will deal with them in this order.

What is the commercial value of superior physique today? Among manual labourers there is no class physically equal to navvies. The work of the navvy is so heavy that nobody but a splendidly built man can perform it. Very many abandon it after a short trial. Is the navvy better paid than the average labourer? He is; but how much? In the experience of the present writer, the difference in wages in favour of the navvy is about one penny per hour. At first sight that seems an appreciable advantage, but a closer examination will show that it is nothing of the sort. Every owner of horses knows that it costs more to keep a Clydesdale horse than a Welsh

pony. The animal is bigger, and requires more food, just as a large steam-engine requires more coal than a small one. The navvy eats more than the average labourer. To perform the hard work which falls to his lot he must eat good food. If the difference in the food consumed by the two men, both as regards quantity and quality, be taken into account, it will be seen that the navvy, notwithstanding his higher wage, has no advantage whatever over the other. So much for the market value of superior physique.

What is the commercial value of superior mental power? In this connection, the first thought that strikes one is that the majority of men and women of genius, to whom the race owes most, died poor. There is, therefore, to put it moderately, no guarantee that high mental power necessarily leads to what is called "success" in life. Grant Allen says:

"The man who invents a new stopper for soda-water bottles, a new tire for bicycle wheels—excellent things in their way—often makes a fortune. So, *oftener still*, does the man who buys the patent from the inventor for next to nothing. But the thinker who discovers some great truth of nature; the worker who invents some valuable surgical appliance, some new anæsthetic, some scientific instrument, some optical improvement, usually makes next to nothing, and sometimes even loses his all in the attempt to perfect and bring out his discovery. In other words, reward is not proportioned to the true worth of the invention or discovery to mankind at large, but to its *immediate marketable value.*"

The original thinker, the man of genius, the creator, is seldom a match for the wide-awake schemer, ever on the alert to snatch a present advantage. Indeed, the former will generally scornfully refuse to stoop to the artifices of the latter, although well aware that refusal means pecuniary loss or even ruin. The mind of the one man is fixed on pelf, that of the other on things higher and nobler. Each achieves a measure of the success he desires, but that of the vulgar man being, under existing conditions, of more immediate value to him as an individual, he survives and propagates the species, whilst the other often perishes.

What is the commercial value of superior morality? Does not the question sound like a joke? The plain fact is that the moment a man dabbles in commerce he is compelled to discard his morality, or at best reserve it for Sunday use. No man engaged in commerce or finance can afford to speak the truth or act honestly. Those who desire to do so find themselves driven to resort to the tricks and subterfuges of their rivals in order to hold their own in the competitive struggle. One unscrupulous man will drag down every trader in his street, or in his town, to his own low level. * * * * * * In short, to succeed in business a man must be utterly heartless and unscrupulous. Shakespeare's Shylock typifies the money-making class. In the competitive struggle as we know it physical excellence counts for nothing, mental excellence counts for little, and moral excellence is simply ruinous. The man who comes to the front is the one with a sleepless greed of gain, a head for figures, and a heart like that of Shylock. This is the type to which we are breeding. Not only are the economic conditions shaping this end, but sexual selection is accelerating the pace in the same direction.

We have already pointed out that the fittest is not necessarily the best. The survival of Shylock today only proves that he is the fittest to cope with existing conditions. Let the conditions be altered so as to bring them into harmony with those of nature and Shylock will be the fittest no longer. It will thus be seen that existing economic conditions are the cause of human stagnation, and even retrogression.

It has also been pointed out that in a state of nature the exercise of organs useful in procuring food leads to their development, and that the want of exercise tends to make them decay, and become rudimentary. The rich among us do not need to exercise their organs. The food is already procured. This accounts for the shrivelling process which leads to the frequent extinction of our aristocratic families. Unnatural conditions wipe them out. But if exercise is to be beneficial it must not be excessive. Every athlete knows the danger of over-training. Many among the poor are cruelly overworked. Not only are the hours of work far too many, but the work is too heavy, and is begun at too early an age. The result is degeneracy, physical, mental, and moral, which, if continued long enough, causes all three sides of man's nature to become rudimentary.

The reader will now perceive that the taunt of those who say that Socialism is inconsistent with the laws of nature carries no weight. Not only is it quite consistent with nature's laws, but it is the only social arrangement of which so much can be said. Capitalistic individualism has no prototype in nature, and is therefore unnatural. But some opponent will say, "It is here, and therefore it must be a natural product." The answer is simple. It is here, but it is one of nature's failures. We have seen how, low down in the organic scale, nature makes many failures in order to achieve one success. Sometimes even millions perish in order that one of high type may survive. Nature always accomplishes her purposes in the end. We know that her aim is Communism, for some of the higher species have already reached it, and all are tending towards it. It will come. The reader may stand on the seashore when the tide is rising, and watch the waves as they roll in. He may watch each wave recede apparently to the point from which it started. He may watch a long time without being able to perceive that any advance has been made. But let him wait a little longer, let him wait long enough, and he will see the tide infallibly reach its mark. So does nature work. We know what is coming. Today Capitalist individualism seems firmly rooted and strongly knit, but the laws of nature are fighting on our side. It may hold its ground for many years yet, but the time is coming when the waves of the evolutionary tide will break and roar far, very far above it.

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