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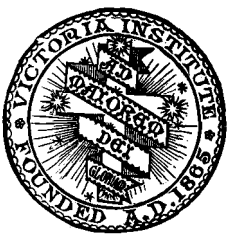

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1910.

506TH ORDINARY GENERAL MEETING.

MONDAY, APRIL 4TH, 1910.

LIEUT.-COL. G. MACKINLAY IN THE CHAIR.

The Minutes of the preceding Meeting were read and confirmed.

The following election was announced :—

Associate : Colonel H. G. MacGregor, C.B.

The following paper was then read by the Author :—

DARWINISM AND MALTHUS.

By the Rev. JAMES WHITE, M.A.

AMONG the many centenaries that marked the year 1909, none have equalled either in interest or importance that of Darwin. His discovery of the laws of evolution and survival of the fittest, explaining the origin of species and the development of life's various forms, has been the most important and wide reaching since Newton established the law of gravitation. And although we cannot be sure that the principles discovered and elaborated by Darwin and by Wallace, are as far-reaching throughout the material universe, as the law that matter attracts matter directly as the mass, and inversely as the square of the distance, yet the idea of evolution, development, and the struggle in life, have affected more fields of thought, and have more varied applications, than that great law which governs only the relations of inanimate matter. Our ideas on morals, religion, social relations, in almost everything that concerns human life, have been influenced, and frequently very largely modified by the principles for whose discovery and exposition we are indebted to Darwin and to Wallace; and their application to animal life have not only been illuminating but transforming.

No apology is needed for coupling the two names. These two great men have acknowledged their obligations to each other with that noble chivalry which has so often distinguished men of science. The pursuit of knowledge, the love of truth for its own sake, have done more than make us acquainted with the material world. In them also are learned some of the highest moral qualities, pre-eminently justice and generosity. Other names have been mentioned as having in some degree anticipated the discoveries of Darwin and Wallace, but they have done so only to a very limited extent. No one has been more often mentioned and referred to in this connection, in the numerous lectures, magazine articles, and essays, that have been called forth by the centenary of Darwin than Lamarck; and yet his contribution has been very insignificant. The only credit that can be claimed for Lamarck, is that he believed in the possibility of the transformation and progress of species: but he did nothing to explain how this was accomplished. The principal cause he suggested for such transformation and development was a "formative nisus," but of this no trace has been found in nature, nor has it in any way helped forward the theory of evolution. This explanation was derived not from observation but from imagination. It is true that the habit of the bottle-nosed whale, of laying his nose upon a rock when sunning himself, has been quoted as indicating an aspiration for terrestrial existence. This suggestion has at least the merit, rare in scientific work, of being amusing.

One name which has been very seldom mentioned, and would seem to be almost of purpose ignored, is that which stands at the head of this article, namely, that of Malthus. His "Essay on Population" was really the living seed from which all that is implied in the word Darwinism has sprung. Falling on the fertile minds of Darwin and of Wallace, there it germinated and produced a rich and noble harvest. It was Malthus's "Essay on Population" that gave them both the clue to unravel the difficulties of the Origin of Species. The now familiar ideas of the struggle for existence, survival of the fittest, natural selection, evolution and development, and all that they imply are engermed in the thought of the Pressure of Population on the means of Subsistence, of which Malthus's essay is an expansion though in a very different direction. To anyone acquainted with that book, and the writings of Darwin and Wallace, the connection is very obvious. It has been very fully acknowledged by these distinguished philosophers themselves. In his *Origin of Species*, Darwin states in the

introduction "the struggle for existence, is the doctrine of Malthus applied to the whole animal and vegetable kingdom" (4th ed., p. 4). In the life of Charles Darwin, published in 1887, we have the following:—

"I soon perceived that selection was the keynote of man's success in making useful races of animals and plants. But how selection could be applied to organisms living in a state of Nature remained for some time a mystery to me.

"In October, 1838, that is, fifteen months after I had begun my systematic enquiry, 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 continued observations of the habits of animals and plants, it at once struck me that under these circumstances favourable variations would tend to be preserved and unfavourable ones destroyed. The result of this would be the formation of a new species. Here then at last I had got a theory by which to work."

From this it is obvious that the theory of Darwin with all its varied and far extending applications was the fruit in Darwin's mind of Malthus's principle. All that wide extending harvest, which is briefly summed up in the word Darwinism; a harvest yet far from fully reaped, has sprung from the living seed of this principle. Malthus observed the pressure of population on the means of subsistence. Darwin took up this observation and applied it in ways which its author never contemplated, and probably could never have applied it. Other causes no doubt contributed to the production of Darwin's *Origin of Species*: other influences brought their aid to fertilize that mind of almost unrivalled powers of observation and induction which has been the chief agent in this great development of thought, and for this is due to Darwin far beyond all others the gratitude of mankind. But the living seed is Malthus's observation of the pressure of population on the means of subsistence.

Dr. Alfred Russell Wallace in his very interesting and valuable autobiography, has most fully acknowledged his indebtedness to Malthus. Writing of his 21st year he records on p. 222, vol. i, as follows:—

"But perhaps the most important book I read was Malthus's *Principles of Population*, which I greatly admired for its masterly summary of the facts and logical induction of its conclusions. It was the first work I had yet read treating of any of the problems of

philosophical biology; and its main principles remained with me as a permanent possession and twenty years later gave me the long sought clue to the effective agent in the evolution of organic species."

Referring to the same period on p. 240, after mentioning his making the acquaintance of Mr. Bates, the eminent traveller and naturalist, Dr. Wallace writes:—

"the other equally important circumstance was my reading Malthus, without which work I should probably not have hit upon the theory of natural selection, and obtained full credit for its independent discovery."

Later on, beginning at p. 361, Dr. Wallace in a passage too long for quotation, gives a most interesting account of the full development of his theory, relating the whole process of the flowering of the living seed that had been for years germinating in his mind. The entire passage is well worthy of perusal; for it exhibits the birth of a great thought in a great mind, the birth of a living truth destined to enrich humanity. It begins thus, "one day something brought to my recollection Malthus's *Principles of Population*." It ends with these words, "I wrote it (the theory of natural selection) out carefully in order to send it to Darwin."

It is strange that with this ample acknowledgment of their obligations to Malthus, obligations which are evident to anyone acquainted with the works of these great philosophers, it is strange that the name of the first should be almost ignored, although he was the originator of all that followed. The other two have fully confessed him as their fountain of thought and suggestion. And it is not only by the general public but also by really learned and scientific men in the numerous letters, addresses, articles, and speeches which have illustrated the Darwin centenary that the name and work of Malthus have been almost entirely ignored.

It is a good thing to take a part however humble in the cause of justice; to make an effort however feeble to give honour where honour is due. And such an effort would, it is to be believed, have the sympathy and approval of such men as Darwin and Wallace.

There are other reasons too which make the consideration of the debt rightfully due to Malthus of interest and importance apart from the sentiments of abstract and poetic justice.

A prejudice has been long felt against Malthus which may partly account for the manner in which he has been ignored, namely, the impression that he is in some way responsible for those practices which may be referred to as connected with race suicide; or that at least some sanction for them can be derived from his writings and principles. This is a very great mistake, and a very unjust slander on a man whose moral character was as pure and high as his intellect was penetrating and exalted. Malthus but slightly refers to these subjects, and then only for his strongest reprobation. For the evils of over-population Malthus knows only one remedy, viz., virtuous abstinence; and while quite aware of the evils of over-population, he is also aware that there are other evils which are greater still. The following is the principal reference to the subject; it is taken from vol. iii, p. 391 of the fifth edition of his Essay on the *Principles of Population*, published in 1817.

"I have never adverted to the check suggested by Condorcet without the most marked disapprobation. Indeed I would always particularly reprobate any artificial and unnatural modes of checking population, both on account of their immorality and their tendency to remove a necessary stimulus to industry . . . The restraints which I have recommended are quite of a different character. They are not only pointed out by reason and sanctioned by religion, but tend in the most marked manner to stimulate industry."

The restraint on which Malthus relies is the sense of parental responsibility. It is the only one which he advocates, and he thinks it should be taught, fostered, encouraged and strengthened in every way. It is the duty of parents to put those children they have brought into the world in such a position by training, care of health, education, etc., that they may have a reasonable prospect of being able to maintain themselves in it. In fact, the law of nature which Malthus seems to have discovered is more serious than at first appears. It is this, that the right to live is not inherent. It has to be acquired or imparted. This is startling, we naturally shrink from its statement. But if it is a law of nature it is no use attempting to resist it. When applied to biology it has been the most fruitful truth that has ever entered into that science; and this is a strong presumption that it is a law of nature. Our duty to the Laws of Nature is to obey them, however stern and severe they may be. It is our higher duty to apply them in accordance with the spiritual laws of justice and mercy, to administer them with

justice and to mitigate them with mercy; but to disobey them means prolonged and extended suffering, a lengthened lesson in the dear school of experience until we have learned rightly to obey.

It is remarkable that the principles of Malthus were discovered not in the study of biology, with which he apparently had no acquaintance, but in the subject of political economy. It was reflection on the causes that hinder the progress of the human race to happiness that led him to consider the principle of population as affecting this subject. To apply it to the animal or still less to the vegetable creation seems never to have occurred to his mind. Natural history seems to have been quite outside his range of thought and interest. Now if his principles have been so fruitful when applied to subjects which are altogether outside the field of their discovery, how much more fruitful may we expect them to be if applied in that field in which they were discovered.

This consideration becomes the more important, when it is observed that the whole trend of legislation, and of the thought which lies behind legislation, and both is its cause and gives it force, has been for a long period in a contrary direction. Increase of the sense of parental responsibility was the check on which Malthus relied for the evils of over-population; modern legislation has done much and seems likely to do more to diminish the feeling of responsibility of parents for their offspring. Free education has been given; free meals are being demanded, gratuitous feeding is to some extent given, and demands for further relief from parental responsibility seem likely to follow. All this is in direct opposition to what there is strong presumption at least to believe to be a law of nature.

The phrases "survival of the fittest," and "elimination of the unfit" were not invented by Malthus; but they follow directly from his principles of population. Modern legislation, and indeed modern sentiment, without which legislation is powerless, have sought, and are still seeking to preserve the unfit and to encourage their multiplication. But the laws of nature will prove themselves too strong even for the strongest radical government, or the most plausible socialistic theory. The laws of nature will assert themselves in the end, even it may be by the destruction of our entire civilization. It is useless to complain of their harshness and severity. Nature is full of that which is harsh and severe. But we may do much, if we recognize them as facts, we may do very much to mitigate the

harshness and severity of their application. By ignoring or disobeying the laws of nature, we only multiply and prolong suffering. Our truest mercy and our highest wisdom is to obey them.

Communication on Rev. James White's Paper.

By Professor Edward Hull, LL.D., V.P.

Read on the conclusion of the paper.

In thanking the author for his interesting paper I wish, in the first place, to express dissent from the idea that there is any possible analogy between Newton's Law of General Gravitation, and the inferential hypothesis of Darwin and Wallace, to account for the succession of species of plants and animals. Valuable as this hypothesis may be, and useful as a workable basis for naturalists to build upon, it still remains simply an hypothesis open to discussion, founded on observations more or less liable to error, and certainly, limited in application; whereas Newton's Law is of universal application, mathematically true, and verified by astronomers in their calculations regarding the mechanism of the universe. The analogy, therefore, does not exist; the hypothesis of evolution and the law of gravitation stand on different planes, and doubtless the author is aware of this.

But in dealing with the "Darwinian theory" of evolution it should not be forgotten that there are difficulties in its acceptance which have to be overcome before it can be accepted by naturalists. As yet no case of transmutation of species has been observed; and the curious fact remains, that most, if not all, plants and animals which have been modified by domestication or culture exhibit a tendency to revert to the original type when in a state of nature, and Dr. Darwin's own instance of the pigeons has always appeared to me to be opposed to his views; lastly, hybrids are not fertile.

Those of us who, like myself, have not read Malthus's works, but are only acquainted with this profound writer as the author of what are called "Malthusian doctrines," will be grateful to the author for rescuing his memory from association with views which

most of us would consider objectionable, as well as for having suggested to Darwin and Wallace their conceptions regarding organic evolution. With Mr. White's views regarding parental responsibility I am in entire accord, and they require to be enforced at the present time, when legislation, modern habits amongst the poor, and mawkish sentimentality are tending to undermine the high moral duty of parental responsibility. When the State steps in, and removes the education, the upkeep, and the supervision of the child from the parent to itself, the effect on both is disastrous; it withdraws from the parent one of his greatest incentives to industrious labour, and from the child, the feeling of affection which has been implanted by nature, and is an incentive to a virtuous life. Scripture is absolutely opposed to this aspect of State Socialism, which commands the child to honour his father and mother, and the parent to provide for those of his own house, including his offspring.

Discussion.

Dr. W. Woods Smyth said:—Our hearty thanks are due to Mr. J. White for his excellent paper. I entirely differ from Professor Hull and Dr. Irving upon their strictures on the Doctrine of Evolution. It is not contended that one species has ever been transmuted into another. We are a Christian Institute and as we believe and reverence the Bible we must acknowledge, as the Scriptures say, that the creative evolution of the several forms of life was *finished* ages ago. This leaves no room for new species to arise to-day. But when we glance into the past geologic ages we perceive symbolic types in the fields of life. In one instance there is a creature combining the formations of the deer, the hog, and the camel. Now in the finished forms these have become differentiated into the three familiar creatures known to us to-day.

The Bible is on the side of evolution, Haeckel acknowledges this to its credit, and even Dr. Irving has contributed a paper to the Institute pointing out evolutionary ideas in the creation story. I have shown that the scriptural expression, "Let the earth bring forth

the living creature," the verb being in the *causative* voice; *Hiphil* presents to us more vividly the principles of evolution in the influence of environment than are to be found in whole pages of Darwin and Spencer.

Again, all our learned Societies support the doctrine of evolution and no scientific evolutionist of eminence believes in the idea of a "directivity." It would be entirely opposed to the great scriptural principle (as I have shown in my writings) which makes life responsible for its own conduct, and even in degree, for its own organization. It would be repulsive to our mind to suppose that God created creatures specially red in tooth and claw to riot in raven. But I have shown that this vastly magnifies the moral responsibility of man which has been accumulating through long ages up to man's estate at the summit of all life.

Lastly, I have contributed to the Victoria Institute the important truth which it has been my privilege to urge upon the Church for thirty-seven years, namely, that the destruction of the unfit was the *sacrifice* of life for the evolution of living organisms. "Sacrifice" is the word used by Herbert Spencer in this connection; so that man was created by a great ministry of animal sacrifice. Little wonder that the type of his redemption is shown in the animal sacrifice of the ceremonial law, and had its complete consummation in the great sacrifice of the ineffable Life of our Lord Jesus Christ.*

Professor H. LANGHORNE ORCHARD said:—While thanking the Rev. author for his interesting paper, I am compelled to associate myself with the dissent so generally expressed from some of his conclusions. In the second sentence of the paper we read of Darwin's "discovery of the laws of evolution and survival of the fittest, explaining the origin of species and the development of life's various forms," etc. I fail to see that an imagination is a "discovery," or how that which has no existence can have "laws," or how such can "explain" anything, or how it is advisable to use the term "development" as synonymous with "evolution."

I must protest against any attempt to compare Darwin's untrue

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* "The Bible and the Doctrine of Evolution. The Government of God, 1882. Evolution explained and compared with the Bible, 1883. Divine Dual Government, 1899–1902–1905. The Bible in the Full Light of Modern Science, 1907." *Victoria Institute Transactions*, vol. xxxviii, 215.

speculation with the grand discovery by which Newton bound together all parts of the material universe. To call by the name of "science" an unverified conjecture—a conjecture negatived by experience—is to dishonour science. To speak of an imagination as a "fact" is not conducive to our progress in the knowledge of facts.

On p. 224 Darwin tells us that favourable variations (in animals and plants) are preserved, and unfavourable are destroyed. What does he mean by "favourable" and "unfavourable" in a species with regard to the other species into which he supposes it is being transmuted. The result, he says, "would be the formation of a new species." What sort of a reasoner is he who thus piles up assumptions?

Improve the breed of horses long enough, and at last you will get something which is not a horse but another sort of creature—shall we say, a gibbon? What led Darwin to write such nonsense? Was it that he possessed an elastic faculty for believing whatever he *wished* to believe? This seems to have led him to first bamboozle himself and then to try to bamboozle his readers.* Dr. Irving has alluded to Darwin's misapplication of Malthus's theory. Henslow† also points out that the "individual differences," relied on by Darwin, can never transmute a species, for they lack *hereditary constancy*.

Darwinism has no doubt exercised a considerable influence over many minds, but this has been owing not to ability or truth in the speculation, but to the fascination of the subject with which it deals. The author of the paper has, I think, proved his point that the speculation is greatly indebted to the principles of Malthus; and we shall concur with him as to the immense importance of recognizing parental responsibility, and of working with, and not against, the laws of nature.

The SECRETARY said that he was sorry to have to protest once again at the spirit of many of the remarks made. He was sorry to see that instead of discussing the main point raised by the paper all

* Huxley says that Darwin's style of writing is like "a sort of intellectual pemmican—a mass of facts crushed and pounded into shape, rather than held together by the ordinary medium of an obvious logical bond."

† Henslow thinks that Darwin was misled through not observing plants and animals in a state of *nature*.

the previous speakers had turned aside at the mention of Darwin's theory of natural selection, and had raised once more that strange spectre of evolution which it was so easy to drive away.

The speaker's first protest was against that to him unrecognizable caricature of the doctrines of Charles Darwin which had been once more brought forward. In regard to this he contented himself by expressing the hope that at some future time they might have the pleasure of listening to and discussing a paper on evolution by some one who was really in touch with the most modern development of that theory, and who would be able to put before them the whole case, and not merely the survivals of the views of that great Christian but indifferent scientist Samuel Wilberforce.

The point of the paper which seemed to him to have been altogether neglected was the Malthusian doctrine of which so many misrepresentations were current. If, as Mr. White had said, this doctrine had produced such great results when applied to the field of Natural Science, what might not result if it were applied to the field of political economy, and that science of which Malthus was a true student though its name was scarcely heard in his time—Sociology.

Every effort was being made by authority to secure better conditions for the human race; yet as the learned author had pointed out, the net result was the decrease of parental responsibility where it was most needed.

The attempt to eliminate the unfit by raising the present generation and doing away with the conditions which led to another generation growing up with stunted bodies and minds was having one remarkable effect.

The increased burden was being thrown, and rightly thrown, on those who were most able to bear it. But at the same time while the responsibility of the wealthy and middle classes was being enormously increased, little was done to increase the sense of responsibility amongst the lowest and really unfit.

The diminishing birth rate of England was a real danger, because there was little or no diminution amongst the least economically fit, the unskilled labourers and the casual labourers, while among the economically fit the decrease was very great indeed.

They were all faced by a tremendous economic problem, and by tremendous responsibilities which they had to take up.

For his part he thanked the reader of the paper for his illuminating suggestion, and only wished that the discussion had not taken the turn it had, but had been on the lines so clearly indicated in the paper.

The Rev. A. IRVING, D.Sc., B.A., writes :—

The author of the interesting paper on "Darwinism and Malthus" seems scarcely to realize the crudeness of the Darwinian theory as an attempt to account for the fact of evolution. As a theory it has been most fruitful in the advance of thought and the enlargement of our ideas of creation. It has gone a long way to raise Natural History (both of plants and animals) from a science merely of observation and classification to an inductive science; but serious modifications of Darwin's theory have to be recognized in what we may call the "Neo-Darwinism."

Professor George Henslow, in his lecture on "Darwinism and Present Day Rationalism,"* remarks (p. 9)—"Darwinism was a theory to account for the process of evolution, as it is expressed in the title of his book—*The Origin of Species by means of Natural Selection.*" It is "based on two postulates—(i) the original creation of a few or one primitive being; and (ii) the existence of variations without which selection can do nothing" (p. 7). "Darwin's first and fundamental mistake was to introduce the element of structure or form into the theory of Malthus. It has never been shown that slight changes of structure or form, or what are called 'individual differences,' have anything to do with the death or survival of individuals. Darwin's second mistake was to regard individual differences as a source of varieties in nature." The Law of Adaptation is "the true and only interpretation of evolution, and replaces the old argument of design"† (p. 20). This implies (what Darwin assumed) that there is a power residing in the nucleus [of a cell] which can respond to external influences" (p. 18).

Here we can surely recognize *directivity* as an extension of the

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* See *Christian Apologetics;* London (John Murray), 1903.

† To the Botanist; and the latest pronouncement of the physiologist (Prof. Starling) is—"Adaptation must be the deciding factor in the origin of species, and in the succession of the different forms of life upon this earth."

same creative power, which gave existence to the protoplasm, with its capacity for cell-building as the basis of all living forms. Though "evolution" may not constitute a *philosophy*, since it fails as a sufficient basis for the simplification of knowledge, the word conveniently expresses a great law, which is something more than the "development" of the individual, as of a bird or mammal, from its *ovum*. It expresses what is included under Lord Kelvin's happy phrase, "Creative and Directive Power."

When we speak of "Evolution" as a term connoting a general law, we of course use it to express the "subsumption" or gathering up of many minor evolutions; just as we use the phrase "the law of universal causation" to connote the subsumption of minor observed laws or uniform sequences of phenomena. The fact seems to be that we must recognize in nature many minor evolutions of form and structure, which it is not always easy to correlate exactly with one another. But it is fair to contend that in every case there is the principle of *directivity* behind.* I fail to see how we can get away from that, if we accept the fundamental axiom of *the unchangeableness of the Creator*. The one is as necessarily postulated in that axiom as the other; and we may claim that this principle of directivity working for ends by way of adaptation is the only explanation for those *variations* which make for advance. These must be the *esse* of such variations (as Darwin admits) before there can be mutual reaction between them and environment leading "from lower and simpler to higher and fuller harmonies"; and thus we come to see in "Evolution" a divine method of working for ends in accordance with those laws, which belong to elemental matter and force. As Asa Gray puts it† "In each variation lies hidden the mystery of a beginning." From such a point of view we are justified in speaking of the whole process of Creation as a "continuous flow," but not as a simple stream nor as an uniformly continuous flow, as seems to be contended by Professor Starling among the latest contributors to the discussion, in his Presidential Address to

* In the discussion Mr. Woods Smyth asserted that "directivity is unscientific." This is to "beg the question." "Science" as limited to the plane of "observation and experiment" has nothing to say on this matter. It is a question of *philosophy*, and is arrived at by inductive reasoning. —A. I.

† See *Natural Science and Religion*; Scribner, New York.

the Physiological Section of the British Association at Winnipeg last year. Far more helpful, because written in the light of a broader perspective of facts, is the Address at the same meeting of the President of the Geological Section.* Dr. Smith-Woodward discusses at some length (with a marvellous wealth of facts, which palæontological research has brought to light in recent years both in the Old World and in the New) the dual tendency (i) of changes towards *advancement* and *fixity* as determinate in one direction; and (ii) of changes towards *extinction* (which are so commonly repeated), as denoting some *inherent property* in living things, which is as definite as that of crystallization in inorganic substances. All this surely implies "directivity." It is compatible with the doctrine of evolution with its limitations, but it carries us far away from the doctrine of "blind chance or blank fortuity."

Dr. Woodward recognizes a "persistent progress of life to a higher plane, which we observe during the succession of geological periods." But this had its checks, as with arrested development of the cerebral function the more animal functions, with favourable environmental conditions, expended their energy in the production of a "superfluity of dead matter." As examples of this we may point to the megatherium, the mammoth, the glyptodon, the dinornis, storing up useless encumbrances of osseous mineral matter. We see the same principle illustrated in the Orders *Ammonitidae* and *Belemnitidae* among Invertebrates; both ending off bluntly at the close of the Mesozoic age, while the former shows a repetition of this tendency to produce a superfluity of dead (mineral) matter. Here one minor evolution seems to have run its course parallel with the straight, chambered shells of the *Nautilidæ* through later Palæozoic time, to come to an abrupt regional termination with the disappearance of the magnificent Ammonites of the Alpine Trias, which may be seen in the Vienna Museum. In other regions a similar process of evolution seems to have begun at the incoming of the Jurassic series, to culminate in extinction at the end of the Mesozoic period. Space does not permit further quotations from Dr. Smith-Woodward's remarkably illuminating paper, or his enumeration of "strange cases of the rapid disappearance of whole

* Address to Section C (Geology) by A. Smith-Woodward, LL.D. F.R.S., Keeper of the Geological Department, British Museum (Nat. His.), South Kensington.

orders of animals, which had practically a world-wide distribution at the time when the end came."

It seems to me, that if we apply these considerations to the present discussion, they add redoubled force to the ideas, which in the concluding paragraphs of his paper the author has put forward, as deductions from the principle enunciated by Malthus. "The right to live," as conditioned by conformity with the laws which make for the well-being of the community, is seen to be even more strongly enforced by nature, when we see the law of directivity working for the removal from the stage of organic life on this planet of whole orders of creatures, which seemed to block the way for the advance of the whole organic complex. The idea is even older than Malthus; for it is recognized in the simple dictum of the Apostle: "If any will not work, neither shall he eat." It supplements the "parental responsibility" of Malthus by the responsibility of the *State*; and we have the double sanction of Nature and Holy Scripture for interference by the State with the liberty of the individual (i) to organize forced labour for those able-bodied people who will not work and have no other right to live; and (ii) to prevent the imbecile and feeble-minded from propagating their species. We shall all agree that such remedial measures should be tempered with mercy.

Mr. JOHN SCHWARTZ, Jnr., wrote:—

I wish to protest emphatically against the caricature of Charles Darwin depicted in this discussion, representing him as a huckstering bully who ruthlessly forced his baseless theories; whereas it is common knowledge that he was one of the gentlest and most modest of men, who held back his theories during many years of hard work, until he could fully support them by thousands of experiments and observations.

The primary object of our Institute is defined "to investigate fully and impartially and reconcile any apparent discrepancies between Christianity and Science." To-day's discussion is a fair illustration of the bias and antipathy to modern thought expressed by several members who generally monopolize the time allowed for discussion. Broadly speaking, the excellent papers read by non-members have been much more in sympathy with the main object

of our Institute than those read by members, who have often shown both narrow prejudice and an entire lack of appreciation of modern views. Professor Hull's statement that the theory of evolution was not backed up by facts as numerous and striking as were those of gravitation is quite true, but I would point out that the slowness of evolution, the impossibility to reproduce the conditions of past ages, the difficulty of experimenting, etc., precludes such satisfactory evidence.

Gravitation, like all scientific theories, is merely a working hypothesis to help us to co-ordinate numerous experiences, and evolution has also been accepted as the only adequate working hypothesis by practically all biologists, and this appears to me all that our excellent lecturer suggested.

Dr. Irving stated that he knew members of the Royal Society who did not accept evolution; surely F.R.S. does not imply encyclopædic knowledge, and beyond their special object of study, their opinion is of no more than that of the average educated man.

The Rev. J. TUCKWELL writes:—

The title of this paper gives no correct conception of its purpose. The relations of Darwin and Wallace to Malthus are only of academic interest. A better title would be "How to prevent the increase of population." No one will doubt that as things are at present there are evils arising from over-population. But the evils arise not from an excess in the numbers of the human race, but from other and preventable causes. The Divine injunction to man at his creation was "Be fruitful and multiply and fill the earth." This has not yet been done, and it may be that the ultimate purpose of God concerning humanity cannot be disclosed until it has. If I understand the Malthusian principle aright it would check the process and delay the purpose. There are better ways of meeting the existing evils, one of which is by making more room. There is room in this country for two or three times the population without our jostling one another, but millions of acres of the land are in the hands of half a dozen landlords and hundreds of thousands of acres are kept for hares, rabbits and deer instead of being used by the people. Moreover, there are vast tracts of the earth not yet inhabited by

man. Yet the writer of the paper has not a word to say about all this. He tells us on the other hand that "it is the duty of parents to put those children they have brought into the world in such a position by training, care of health, education, etc., that they may have a reasonable prospect of being able to maintain themselves in it." This is very plausible and right enough if rightly judged. But under this specious pretence there lurks too often selfishness, love of pleasure and an unnatural determination to shirk the responsibilities of paternity.

Among the well-to-do classes also parents too often require that their daughters, at all events, shall begin life with an affluence which they themselves have only attained after many years' industry. This is pernicious and demoralizing. There is nothing more ennobling than the success which is the fruit of honest toil.

But one of the most reprehensible sentences in the paper is the following: "the law of nature which Malthus seems to have discovered is more serious than at first appears. It is this, that *the right to live is not inherent.*" The author does not make it quite clear whether he himself would apply this to mankind. If he does, I do not wonder that he should add "This is startling." It certainly is startling in any case to find that any Christian should utter or repeat such a sentiment. The writer says that "when applied to biology it has been the most fruitful truth that has ever entered into that science." Well, no doubt our Creator has given man authority over nature. The right of plants and animals to live is subject to the will of man. But the right of man to live is subject to the will of God, and the Divine decree has never yet been abrogated, "Whoso sheddeth man's blood by man shall his blood be shed." If the right to live is not inherent in human life are we to have Mr. Bernard Shaw's lethal chamber set up for the destruction of the unfit? And by what tribunal is the unfitness to be determined? The author certainly has laid himself open to the suspicion that he strongly leans towards an approval of this diabolical doctrine, for he goes on to express his disapproval of "free education," "free meals" and "gratuitous feeding," and threatens the "strongest radical government" with the revenge of nature for thus seeking to "preserve the unfit." What would he have his ideal non-radical government do with the weak and sickly and underfed childhood of the nation? Leave them to suffer and die under the plea of the "elimination of

the unfit"? The Victoria Institute is not the place for the expression of the spirit of party politics, but this would be sheer brutality against which the Christian spirit among us would energetically protest. Insanity, feeble-mindedness and other causes of unfitness are largely due to drunkenness, immorality and the excessive stress of life. Suppress drunkenness, make immorality a crime in both sexes, overthrow the tyranny of inordinate wealth, give the people room to live, and bring in the ethics of the Gospel of Christ into our national life, and you will soon get rid of the wicked and nonsensical talk about the "survival of the fittest," and the "elimination of the unfit," so far as mankind is concerned.

Author's Reply.

While thanking those who have done this paper the honour of criticizing it a few deprecatory observations may be made.

The reference to Newton is merely an *obiter dictum*. No comparison is made between the two discoveries so unlike in many respects, but it is pointed out that Darwin's theories affected a greater variety of subjects.

The paper assumes Darwinism only so far as it is generally accepted. That Darwin and Wallace pointed out some most and important and unnoticed factors in the production of types of life is unquestionable: but these are not all the factors, nor do they explain everything.

Dr. Alfred Russell Wallace, in his book entitled *Darwinism*, shows that there are gaps which Darwinism cannot bridge over; and there are other factors at work which have yet to be discovered and explained. For example, there are subtle influences of climate, locality, and environment that affect both physical and mental characteristics in ways of which at present no explanation can be given. To take a case. In the last three centuries a new type has arisen in the human race—the North American or Yankee type. This differs considerably in feature, which are marked, and in bodily and mental characteristics, from its English or European ancestors. And where the type does so differ it conforms to or takes after the aboriginal inhabitants of the soil, and that without the slightest admixture of blood. Here then there have been at work influences whose effects may be observed, but whose mode of action has not been explained.

This interest in Malthus and the obligations to him of Darwin and Wallace are more than academic. It is of the nature of a moral duty to do justice to a man who has been so ignored and misrepresented. Of all the essays and papers that the centenary of Darwin has drawn out the only one I have seen which refers to Malthus is that of Professor E. B. Poulton, F.R.S., of Oxford; and it is much to be regretted that in the Report of the Committee of Convocation on the diminishing birth-rate, it is implied that he is responsible for theories and practices which he abhorred and which he denounced.

But further the teachings of Malthus are of the highest practical importance. When they entered, into the science of biology they produced greater fruits of thought than any or all other principles or discoveries have done. How much more fruitful might they be if applied to the subjects with which they are more directly connected, such as political economy and sociology.

It is rather a strange suggestion that the title of the paper should be "How to prevent the increase of population." Except the reference to parental responsibility there is no mention or allusion to any means of checking population either in the paper or in the writings of Malthus himself. The question Malthus discusses is not whether any given country or the world itself could sustain a larger population, but this, that as population tends to increase in a geometrical progression and the supply of food in an arithmetical progression the former must overtake the latter, and a certain amount of misery and degradation must result. Malthus appears to have established the law that the right to live is not inherent, but is either imparted or acquired. The general and popular opinion is that the right to live is inherent, that is, if a man cannot or will not keep himself he has a right to make other people keep him. This is a right that could not be universally, or by a majority, or even by a large minority, exercised simultaneously.