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JOURNAL OF
THE TRANSACTIONS
OF
The Victoria Institute,
OR,
Philosophical Society of Great Britain.

GENERAL SECRETARY:
E. J. SEWELL.

LECTURE SECRETARY:
E. WALTER MAUNDER, F.R.A.S.

VOL. XLIX.



LONDON:

(Published by the Institute, 1, Central Buildings, Westminster, S.W. 1.)

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592ND ORDINARY GENERAL MEETING,

HELD IN COMMITTEE ROOM B, THE CENTRAL HALL,
WESTMINSTER, ON MONDAY, JUNE 4TH, 1917,

AT 4.30 P.M.

LIEUT.-COLONEL G. MACKINLAY, CHAIRMAN OF COUNCIL,
IN THE CHAIR.

The Minutes of the last Meeting were read and signed.

The CHAIRMAN : I am sure we are very happy in the subject of the paper chosen this afternoon, and more happy still in the one who is to deliver it. He himself is one who has greatly shaped the course of modern thought during the years under review, and the Victoria Institute is most fortunate in having a paper from him on this subject. I have great pleasure in asking Dean Wace to read his paper.

*SOME OF THE RELATIONS BETWEEN SCIENCE AND
RELIGION AS AFFECTED BY THE WORK OF THE
LAST FIFTY YEARS.* By the Very Rev. H. WACE,
D.D., Dean of Canterbury.

I AM very sensible of the imperfection of my equipment for venturing to offer the Society some reflections on this subject, but I possess at least one qualification which, I hope, may excuse my presumption. I have lived through those fifty years, and I was thirty years old when they began. I had been seven years in Holy Orders when they opened, and it was not long after their commencement that, as Boyle Lecturer, it was my duty to consider as thoroughly as possible the position of Theology in relation to the Science then prevalent. In those fifty years I have seen many movements and influences come and go. At their commencement Tyndall and Huxley were the reigning authorities in Science; W. R. Greg and Matthew Arnold were the most popular influences in Criticism and Religious Speculation; Colenso had startled the religious world by his popularization of Dutch Criticism of the Old Testament; and the Cambridge School of New Testament Criticism, led by Lightfoot and Westcott, were successfully upholding the authenticity of the Gospels and Epistles against the School of Baur and his

followers. Of all the influences by which the traditional Christian belief was then menaced, a great deal, to say the least, has disappeared before the discoveries and the discussions of those fifty years, while the Christian Belief still holds its own among us, and in some respects, I think, is in a still stronger position. In this survey I may claim to speak as something more than a spectator, for it was my duty and my privilege to take some responsible part in the course of the debate, and I have had some anxious experience of the difficulties involved in the struggle. I do not presume to think that I can appreciate the full bearings of the great questions raised by the recent advances of science. But it may be permissible for one who has gone through the experiences to which I refer to attempt to estimate some of the broader and more practical results of the movements of scientific thought.

To illustrate, then, the attitude of the most popular representatives of the science of the early years of this period, it will be found interesting to refer to an article in the *Quarterly Review* for January, 1878, entitled "Scientific Lectures—their Use and Abuse." It was occasioned by an address given in 1877 by Professor Tyndall at the Birmingham and Midland Institute; and it is an indignant protest against the use which the Professor made of the occasion to assert some of the scientific views he entertained in opposition to current Christian beliefs. He is dwelling on the law of the Conservation of Energy, and illustrates it by the well-known example of a merchant receiving a telegram, which instantly occasions a complex series of actions, which are set in motion from the central nervous system. Some persons, he says, would reply that the impulse of all this force originated from the human soul. But he argues that this is an attempt to explain the known by the unknown. We cannot, he says, "mentally visualise the soul as an entity distinct from the body," and the use of the very term "Soul" is therefore unscientific. "From the side of science all that we are warranted in stating is that the terror, hope, sensation and calculation of the supposed merchant are physical phenomena, produced by, or associated with, the molecular processes set up by waves of light in a previously prepared brain." But he supposes the question asked whether the merchant's consciousness of all these activities can be explained on this purely scientific basis. He asks, in fact, "What is the causal connection, if any, between the objective and subjective, between molecular motions and states of consciousness"? and his answer is, "I do not see the connection, nor have I as yet

met anyone who does." "If," he says, "we are true to the canons of science, we must deny to subjective phenomena all influence on physical processes." "We have here," he proceeds, "to deal with facts almost as difficult to be seized mentally as the idea of a soul. And if you are content to make your 'soul' a poetic rendering of a phenomenon which refuses the yoke of ordinary physical laws, I, for one, would not object to this exercise of ideality." In other words, on the basis of an assumed purely physical causation, the Professor ridicules the notion that the hypothesis of a human soul can afford any explanation of the typical merchant's movements. "On the same ground," he adds, "the anthropolomorphic notion of a creative Architect, endowed with manlike powers of indefinite magnitude, is to be regarded with consideration. It marks a phase of theoretic activity which the human race could not escape, and our present objection to such a notion rests upon its incongruity with our knowledge." The reviewer passes some very just censures upon the impropriety of this use of a scientific lecture to disparage religious beliefs, and exposes the absurdity of the Professor's position. "Professor Tyndall, on a platform at Birmingham, condescending, 'for one,' to allow the human race to talk about their souls, affords a picture which is not surpassed in the *Dunciad*." "The Soul," the reviewer proceeds, "is the rendering, whether poetic or not, of those lofty faculties which are the organs of truth, of beauty, of goodness; which are the home of faith, of hope and of love; in which the aspiration and the conviction of immortality are enshrined, and which are capable of trampling upon all physical sensations, whether of pleasure or of pain. Collect the passages in literature, sacred or profane, in which the word 'Soul' is used, and you will have collected a Treasury of the loftiest emotions and the noblest thoughts which have animated human nature. In the presence of such recollections, we refrain from characterising as it deserves the request that we should be content to treat the soul as the poetic rendering of a phenomenon which is not intelligible to Professor Tyndall."

This example is perhaps an extreme one, but it illustrates clearly the hard physical standards by which even eminent men of science of that day measured human thought and religion. Professor Huxley, indeed, endeavoured to mitigate the rigidity of this conception by protesting against "the fallacy that the laws of Nature are agents, instead of being, as they really are, a mere record of experience, upon which we base our interpretations of that which does happen,

and our anticipations of that which will happen.* But the idea of everything being subject to "laws of nature," and of "violations" of them being incredible, became deeply fixed in popular thought. The *Reign of Law* was the title of a book by the late Duke of Argyll, and the phrase embodied the prevalent conception. We are now told, however, by Mr. Whetham, one of the most distinguished exponents of modern science, that "many brave things have been written and many capital letters expended on describing the Reign of Law. The laws of Nature, however, when the mode of their discovery is analysed, are seen to be merely the most convenient way of stating the results of experience in a form suitable for future reference. The word 'law' used in this connexion, has had an unfortunate effect. It has imparted a kind of idea of moral obligation which bids the phenomena 'obey the law,' and leads to the notion that when we have traced a law, we have discovered the ultimate cause of a series of phenomena"; and again, "we must thus look on natural laws merely as convenient shorthand statements of the organized information that at present is at our disposal."†

I must own that this sort of language seems to me to go too far, and that there are principles in natural philosophy which cannot duly be described by any other name than that of law. Observations which are of a purely inductive and probable character, such as the doctrine of Evolution, may appropriately be described as "shorthand statements of the organized information at present at our disposal," and it would be well if their provisional character in this respect were more clearly borne in mind. But the principles laid down in Newton's *Principia*, or, as he entitled his great work, the *Mathematical Principles of Natural Philosophy*, do appear to bear the character of irrefragable laws. The law of gravitation rests, not merely on certain observations made by Kepler of the motions of the planets, but on mathematical propositions established by Newton which are rigidly demonstrable; and the motion of the planets is dependent upon the action of every particle in them being conformable to the mathematical principles of attraction which he established. Unless all the particles of matter in the visible universe are subject to some controlling power, which practically subjects them to a law, it would seem inconceivable that they should

* Huxley, *Science and Christian Tradition*, p. 77.

† Whetham, *Recent Development of Physical Science*, p. 31.

universally, and at all times, be found to attract one another with a force which varies in the perfectly accurate measure of the inverse square of the distance. Newton, in the grand Scholium at the end of the *Principia*, insists on the fact that the word "God" implies dominion. "Deus," he says, "est vox relativa et ad servos refertur: et deitas est dominatio Dei, non in corpus proprium, uti sentiunt quibus deus est anima mundi, sed in servos." In Newton's mind, therefore, God lays down laws which his creatures shall obey, and accordingly it was Newton himself who describes the axioms from which his reasoning starts as the three "Laws of Motion."

I venture to think, therefore, that some confusion prevails in such recent explanations of the "Laws of Nature" as I have just quoted. It is quite true it is not a Law of Nature that the sun should rise to-morrow; there is only the highest probability, and not a certainty, that it will do so. But if it does rise, it is quite certain that its movements will conform to the law of gravitation. The confusion seems to be between uniformity of occurrences and uniformity of the principles or laws in conformity with which those phenomena are produced. All the phenomena of Nature, like the leaves of a tree, are more or less irregular. It is not possible, for instance, to predict the exact spot at which a projectile will fall, although the conditions under which it is fired are exactly known, for it may be slightly deflected by some unforeseen interference, such as that of a sudden gust of wind. But it is quite possible to say where it ought to fall, because the mathematical laws by which its course is governed are known and are invariable. If we allow this justification for the use of the term Laws of Nature to be forgotten, we obscure a vital point in the argument for the Divine dominion which Newton asserts. That all particles in nature should attract one another, is a fact which may seem sufficiently described by saying, in the phrase just quoted from Mr. Whetham, that it states "the result of experience in a form suitable for future reference." But, as I have said, that this attraction should be maintained, throughout the whole universe open to our observation, in accordance with the exact mathematical rule that its force varies as the inverse square of the distance between the mutually attracting bodies—this implies a controlling force over every particle in the universe; unless, indeed, as the late Lord Grimthorpe humorously suggested, the atoms resolved unanimously, in some ethereal parliament, to attract one another in this definite proportion, and—what would be quite as surprising—have all adhered to their resolution. The

phenomena, in a word, which are the results of motion and action in accordance with the Laws of Nature may vary indefinitely ; but the laws themselves are invariable.

But while maintaining this qualification of the recent softening of the idea of Laws of Nature, it certainly helped to relax the tension represented by Tyndall between Science and Religion when Huxley so positively insisted on the relaxation, and even went so far as to say that "no event is too extraordinary to be possible ; and, therefore, if the term miracle means only 'extremely wonderful events,' there can be no just ground for denying the possibility of the occurrence." The practical effect of this concession was to throw the whole question of belief in supernatural intervention in human and physical affairs upon the evidence for them. Huxley was content to say that there was no sufficient evidence for the miraculous events reported in the Bible, or even for the cardinal truths of religion, such as the Christian belief in God, and he introduced the term "agnostic" to express a simple suspension of belief. It seems to me that this challenge puts the defenders of the Christian Faith in as favourable a position as they can well occupy, and that it is one from which they are not justified in shrinking. We ought, I think, to be perfectly ready to accept Hume's statement of the case, namely, "that no testimony is sufficient to establish a miracle, unless the testimony be of such a kind that its falsehood would be more miraculous than the fact which it endeavours to establish." We ought, I think, to be bold enough to say that the falsehood of the testimony of the New Testament to the miraculous events which it records would be more miraculous than the events themselves. Of course, on the basis of the old belief of the Church—not yet, let me interpolate, disproved—that the Scriptures were inspired by God, this position is impregnable ; for it is obviously inconceivable that testimony inspired by God should be false.

But without assuming that supreme premise, consider only from a human point of view what is involved in the supposition of the falsity of the records of supernatural events in the Gospels. In the first place, it is not merely that the accounts of a number of particular miracles would be rejected, but that the very substance of the accounts of our Lord's actions would be invalidated. Immense ingenuity has been expended in attempting to explain away the miracles which are more particularly described, such as the feeding of the multitudes or the walking on the sea. But even if these attempts had been more endurable than they are, what is to be said of such general descriptions of our Lord's

work as that of St. Matthew, in the fourth chapter, that "Jesus went about all Galilee, teaching in their synagogues, and healing all manner of sickness and all manner of disease among the people. And his fame went throughout all Syria, and they brought unto him all sick people that were taken with divers diseases and torments, and those which were possessed with devils and those which were lunatic and those that had the palsy, and He healed them." What the Gospels attribute to our Lord is not merely the performance of the few miracles specifically described, but a general miraculous power, manifested in the healing of all sick people who were brought before Him. A denial of miraculous action is therefore a denial of the general trustworthiness of the Gospel narratives. This is, indeed, practically involved in a denial of the Virgin Birth; for if the first two chapters of St. Luke are not to be trusted in their solemn account of the momentous circumstances they record, the whole credit of the Evangelist is fatally shaken. But it should be realised what is the nature of the testimony which is thus rejected. It is the testimony of Books, and of the authors of Books, which are bound up indissolubly with the greatest blaze of moral truth and spiritual life which has ever been exhibited among mankind. You cannot produce, within the same compass, such a manifestation of righteousness and truth, and of witness to all that is highest and most sacred in human nature, as is comprised within the Gospels and Epistles. It is true there are some who deny this, but I think they are in a small minority, and we may confidently appeal in support of it to the general verdict of men and women in Christian countries. But so far as it is true, it gives the weight of an intensely truthful character to the general credibility of the Gospel narratives.

The evidence, in other words, is not to be coldly estimated as the bare testimony of half a dozen eye-witnesses. They are the associates, the representatives, of a community of men and women who were the actors in the greatest movement for the assertion of truth and righteousness which the world has ever seen. In point of mere historical accuracy, their narratives in other points have stood the severest tests, and in spiritual force they are unrivalled. Would not the falsity of such testimony be a more amazing thing than the wonderful events to which it testifies? I believe, as a matter of fact, that this is the ground on which the general belief in the Gospel story rests. Christians in general feel that they are confronted, in the Gospels and Epistles, by testimony which is associated with all that is truest and

best and most sacred in their consciousness, and they recoil, by a deep instinct, from suggestions that would connect this witness with illusion or falsity. Of course, this is no argument with those who do not recognize the supreme moral force of the New Testament, and the argument must always, therefore, rest, in the last resort, upon the response of the individual conscience to the moral and spiritual claim of our Lord and His Apostles. If this does not penetrate men's hearts and minds, "neither will they be persuaded though one rose from the dead." If the Evangelists and Apostles are ordinary individuals, and they are to be regarded as simply deposing in court with no greater presumption in their favour than average witnesses, it is quite arguable that their evidence is insufficient. But if they are spokesmen of a Master and a Society who were the greatest of all witnesses to truth in the deepest moral and spiritual matters, it becomes much more difficult to reject their evidence than to believe the wonders they relate, and Hume's condition for the credibility of miracles is fulfilled. This, I repeat, is the consideration which determines the judgment of the great mass of Christian people, and it should be boldly urged. Unhappily, a tendency has arisen among Christian theologians of late to disintegrate the testimony of the Scriptures, and to depreciate the trustworthiness of the authors of the New Testament on important points. The favourable position in which men of science, like Professor Huxley, had placed us has thus been given away by our own friends, and the line of Christian defence has so far been broken. But the case still remains as he left it. There is no sufficient reason on purely scientific ground for denying any of the miraculous facts on which the Christian Creed rests; and the simple question remains, being a moral as well as an intellectual question, Is the moral and spiritual force of the New Testament sufficient to outweigh the physical improbability of the events it records? From that issue the controversy is never likely to be substantially shifted.

But since Huxley's time, Science has done more than withdraw its bar against the possibility of the supernatural basis of Christian belief. It has itself opened doors in our physical environment, which have not only impressed upon the minds of men in general the mysterious possibilities which are latent in Nature, but has led brilliant men of science themselves to recognize the reasonableness of some of the assumptions of Christian thought. Perhaps the greatest enlargement of scientific thought has been produced by the discovery of the nature and properties of the ether. Its importance was

adumbrated in the concluding paragraph of Newton's *Principia*, which gives, perhaps, what is still the most comprehensive description of its general character. "Something," he there says, "might be added respecting a certain most subtle spirit pervading dense bodies and latent in them, by whose force and actions the particles of bodies mutually attract one another at the smallest distances, and when made contiguous cling together; and electrical bodies act at greater distances, both by repelling and by attracting neighbouring corpuscles; and light is emitted, reflected, refracted and bent, and bodies are heated; and all sensation is excited, and the members of animals are moved at will, by the vibrations, that is, of this spirit propagated through the solid capillaments of the nerves from the external organs of the senses to the brain, and from the brain to the muscles. But these things cannot be briefly explained; and there is not at present a sufficient supply of experiments, by which the laws of the actions of this spirit can be accurately determined and exhibited." Those words were written in 1686, and it seems strange that nearly two centuries should have had to elapse before, in the middle of the last century, the laws of the action of this subtle spirit began to be accurately determined; until science has reached the marvellous conception of an ether which pervades all space, so that, as Professor Bonney says (*Recent Advances in Physical Science*, p. 25): "in the mind of the modern physicist, the material universe and everything else in it, not excepting our own bodies, can be traced back ultimately to ether and electricity, or some special form of strain, that is, to ether and an operation of energy. This conclusion has more than realized that vision of the ancient seer, which declares that, at the beginning of the manifestations of creative power, 'the earth was without form and void, and . . . the Spirit of God moved upon the face of the waters.'" That the last result of modern science should thus be described, by a recent President of the British Association, in the opening words of the first chapter of Genesis, is perhaps the most striking illustration of the progress made in what Sir Oliver Lodge has called, in his instructive book *On Man and the Universe*, "the reconciliation of Science and Faith."

One striking instance of that reconciliation may be quoted from Sir Oliver's book, which will bring us back to the point from which we started. Professor Tyndall, starting from the Canons of Science which he expounded so brilliantly, could see nothing in the human soul but a poetic expression for an unintelligible conception. But Sir Oliver Lodge (p. 77 of the 16th

edition of the book to which I am referring) asks: "What is it that puts the body together, and keeps it active and retains it fairly constant through all the vicissitudes of climate and condition, and through all the fluctuations of atomic constitution?" ". . . We call it," he says, "life; we call it soul; we call it by various names, and we do not know what it is. But common sense rebels against its being 'nothing'; nor has any genuine science presumed to declare that it is purely imaginary." ". . . . The following definition may sufficiently represent my present meaning. The soul is that controlling and guiding principle which is responsible for our personal expression, and for the construction of the body, under the conditions of physical condition and ancestry. In its higher development it includes also feeling and intelligence and will, and is the storehouse of mental experience. The body is its instrument or organ, enabling it to receive and to convey physical impressions, and to affect and be affected by matter and energy. . . . Moreover, in the higher organisms, the soul conspicuously has lofty potentialities; it not only includes what is meant by the term 'mind,' but it begins to acquire some of the character of 'spirit,' by which means it becomes related to the Divine being. Soul appears to be the link between 'spirit' and 'matter'; and, according to its grade, it may be chiefly associated with one or with the other of these two great aspects of the universe."

What an immense advance upon the hard material view of man and nature from which we started! I cannot follow Sir Oliver in all his theological discussions, in which I may, without disrespect, presume that he is less at home than in the natural science in which he is so eminent. But it is evident that these observations on the soul, based upon purely scientific conceptions, render intelligible and reasonable the beliefs of Christianity, and the teaching of the Scriptures, respecting those influences of the spiritual world upon the material which are cardinal elements in our Faith. If the soul has this influence upon matter and ether, what is there inconsistent with Science—as, indeed, Sir Oliver proceeds to suggest—in the predictions of St. Paul of the re-appearance of the soul in a spiritual body, or of the influences of spiritual power upon matter upon which the possibility of such miracles as those of the Gospel depends? A great window is opened to us in the vision of the universe, through which we discern "the promise and the potency" (in Professor Tyndall's phrase)—not of matter, as he understood it, but of influences infinitely superior to matter, and capable of modifying, by superior

powers, the results of purely material laws. The process of "reconciliation" seems to me to have gone very far in the nearly sixty years through which my ministerial life has passed, and we may entertain a confident belief in its fuller realization. There is no occasion for theologians to throw aside parts of their creed as irreconcilable with modern science, for there is every sign that science is steadily approximating to the principles which are at the foundation of the Christian Creed. Its revelations are more and more in accordance with the grand convictions respecting the Divine Nature which Newton expresses in the following passage from the concluding Scholium of the *Principia*, to which I have already referred:—

"The Supreme God is a Being eternal, infinite, absolutely perfect; but a Being, however perfect, without dominion is not the Lord God. It is the dominion of a spiritual Being which constitutes a God: true dominion a true God; the highest dominion the highest God; a feigned dominion a feigned God; and from a true dominion it follows that the true God is living, intelligent, and mighty; and from His other perfections that He is Supreme, or Supremely Perfect. . . . God is one and the same God always and everywhere. He is omnipresent, not merely virtually but substantially. . . . In Him all things are contained and moved, but God is not affected by the motions of bodies, and they experience no resistance from the omnipresence of God. It is manifest that a Supreme God must necessarily exist; and by the same necessity He exists always and everywhere. Whence also He is wholly similar to Himself, wholly an eye, wholly an ear, wholly a brain, wholly an arm; one total force of feeling, of understanding, and of acting, but in a manner in no way human, in no way corporeal—a manner absolutely unknown to us. As a blind man has no idea of colours, so we have no idea of the modes in which a God of all wisdom perceives and understands all things. He is destitute of all body and corporeal figure, and therefore can neither be seen, nor heard, nor touched, and ought not to be worshipped in the form of any corporeal thing. We have ideas of His attributes; but what is the substance of anything whatever we in no way apprehend. We see only the figures and colours of bodies, we hear only sounds, we touch only external surfaces, we smell only odours, and we taste only savours; but the intimate substances we cannot recognize by any sense or any reflex action, and much less have we any idea of the substance of God. Him we only know by His properties and attributes, and by the supremely wise and good structures of

things, and final causes ; and we admire Him for His perfections ; but we venerate and worship Him because of His dominion. For we worship Him as servants ; and a God without dominion, providence, and final causes, is nothing more than fate and nature. From a blind metaphysical necessity, which, of course, is the same everywhere and always, no variation of things can arise. The whole diversity of created things in space and time could only arise from the ideas and the will of a Being necessarily existing. God, however, is said by allegory to see, to hear, to speak, to laugh, to love, to hate, to desire, to give, to receive, to rejoice, to be angry, to fight, to fabricate, to construct. For all language respecting God is derived by some similitude from human things ; not indeed a perfect similitude, but some similitude at all events. And so much concerning God, concerning Whom discussion on the basis of phenomena pertains to Natural Philosophy."

DISCUSSION.

The CHAIRMAN : I am sure we all thank the learned speaker for his most valuable paper. The historical summary leading up to the so-called reconciliation between Science and Religion is very clear and accurate, as are also the arguments about the Laws of Nature and the credibility of Miracles.

Our author only briefly alludes to the important subject of destructive criticism, which has greatly developed during the last fifty years, though it has lately received a check, beginning shortly before the War and emphasized by the War itself. The majority, rightly guided by our Lord's admonition, "by their fruits ye shall know them," have quietly put aside destructive criticism, most of which came from Germany. It seems probable that this phase of thought will never regain the influence which it formerly possessed. Perhaps our author, in his reply, would kindly add a few remarks on this subject.

One effect of the content of Science and Religion is that most critics, whether destructive or not, claim to be scientific. It is well to have this aim, if precision of thought, and justness of deduction, are meant by the expression. But surely many a critic has something still to learn from the scientist ! For instance, one of the elementary principles in Science is accuracy of definition and care in the use of terms : yet we find, in the "Oxford Studies in

the Synoptic Problem" (1911), edited by Canon Sanday, and containing papers by eminent scholars, statements that the parts of St. Luke's Gospel which resemble Matthew rather than Luke, constitute great and lesser "Interpolations," while one of the writers *generally* refers to these parts as "Insertions." Surely only one term should be applied by all. Mr. Maunder and the Rev. Sir John Hawkins have demonstrated, on good grounds, that the word "Interpolation" is unsuitable and misleading. It should therefore be abandoned for this purpose, or confusion and misapprehension will arise.

The man of science is careful about coming to conclusions from mere negative evidence. Not so, however, some biblical students. For instance, a few years ago certain writers suggested that the title, "rulers of the city" (Acts xvii, 6, 8), was coined by the author of Acts, as the word was not to be found elsewhere. But in recent years this very word has been discovered, cut in an inscription, amid the ruins of Thessalonica itself!

Moreover, others have questioned the historicity of St. Luke on similar grounds. Writing in 1903, Professor Percy Gardner doubted the accuracy of this Evangelist's reference to the census under Cyrenius, because, he said: "No instance is known to us in antiquity—in which the citizens of a country migrated to the ancestral home of the family in order to be enrolled." True, at the time Gardner wrote, no such instance was known, but some four years afterwards Kenyon and Bell found an old order in Egypt, dated A.D. 104, commanding all persons living at a distance to return to their homes for the then-approaching census. The analogy is obvious.

Professor E. HULL, F.R.S.: I wish to express thanks to the Dean for his admirable Essay, which I read before hearing it. I think one effect of it is to establish the right of the Victoria Institute to its second name, "Philosophical Society of Great Britain." I venture to say that a more philosophical paper has never been produced before any audience at present in existence. I have much pleasure in moving a vote of thanks to the Dean of Canterbury for the paper just read.

Mr. E. WALTER MAUNDER, F.R.A.S.: It is with great pleasure that I rise to second the motion. I do not feel at all competent to

comment upon the Essay as a whole; for it covers so varied a ground, and my own department in science is, as you know, a very restricted one. But I noted one or two sentences, in reading the paper, which seemed to me worthy of very special attention. I was struck by the suggestive little sentence, "All the phenomena of Nature, like the leaves of a tree, are more or less irregular." That is exceedingly well put. It is a fact which we are always realizing in physical science, that the phenomena of Nature are always more or less irregular; yet it is from that very fact that we are able to learn concerning what are termed "Laws of Nature." We have irregular phenomena presented to us; yet when we examine into them, we find that an underlying unity of principle is exemplified. Consequently for the last hundred years very great importance has been attached in physical science to what is called "the theory of probability." A great number of observations are accumulated, showing many apparent irregularities, and the question arises as to how to analyse those irregularities so as to trace each to its proper cause or combination of causes. And we find that the phenomena of Nature do yield to such an analysis, and that the underlying assumption upon which our analysis must rest is that of the essential Unity of the Power behind Nature.

Another sentence which attracted me very much, referred to the miracles of the New Testament. "The argument must always therefore rest, in the last resort, upon the response of the individual conscience to the moral and spiritual claim of our Lord and His Apostles. From that issue the controversy is never likely to be substantially shifted." Miracles, at first sight, seem a violation of that Law of Causality which is the very fundamental principle of all physical science. But their explanation lies in the fact that the nature of man is not confined to the merely physical plane. There is in man, not merely physical substance, but individuality, personality; and God Who created man in His own Image, can manifest His own Personality, and appeal to the personality which He has created. That appeal, in the supreme case, is made in the revelation of our Lord Jesus Christ. If the moral and spiritual claim of Christ appeals to the conscience of the individual man, then there will be no difficulty about the miracles which the Holy Scripture record as being wrought by His Hand. The miracles are in harmony with their Author.

I would like to thank the Dean of Canterbury also for the beautiful excerpt from the conclusion of the *Principia*. May I add one word more? It has been on my mind much of late that the controversy between Religion and Science—if we may use that hackneyed and misleading phrase—is likely to wear a different aspect in the near future from that which it presented fifty years ago. Then it was blank materialism claiming to be scientific which opposed itself to religion. Now if I foresee aright, we may have to face a different foe, one more subtle and difficult to defeat. There is, I fear, a tendency towards a modified Pantheism, and Pantheism is more difficult to fight than ever Materialism was, because, at one time or another, it uses many of the technicalities of Christianity, but in an absolutely opposite sense. In theory it claims to recognize one God, but, as the oldest school of Pantheist thought in existence, that of India, does not fail to admit, Pantheism and Atheism are indistinguishable, because the God of the Pantheist is not a God possessing moral qualities. However much, therefore, the terminology of Pantheism may resemble the terminology of Christianity, its spirit and its essence are fundamentally opposed to it.

The vote of thanks was heartily accorded.

Dr. A. T. SCHOFIELD: One of the most valuable points in this truly philosophic paper is the way in which truth is condensed within so few pages. Dean Wace alludes to the discovery and properties of ether, and quotes Professor Bonhey's remark that "in the mind of the modern physicist, the material universe and everything else in it, not excepting our own bodies, can be traced back ultimately to ether and electricity, or some other special form of strain, that is to ether and an operation of energy." Professor Bonney adds: "This conclusion has more than realized the vision of the ancient seer, which declares that at the beginning of the manifestations of creative power 'the earth was without form and void, and the Spirit of God moved upon the face of the waters.'" I venture to suggest, however, that the ancient seer did not say that, but, on the contrary, he said that at the beginning of the manifestation of creative power God created heaven and earth, and he created nothing that was without form; but that I leave.

With regard to ether, I would suggest that it has hardly been discovered, that its very existence is still disputed by scientists. It

is a workable hypothesis as yet, and no more. There are concepts about it but no percepts. These range from regarding ether as an inner cause which is a million times lighter than hydrogen, and has a substance 480 times heavier than platinum, and is so dense that according to Sir Oliver Lodge all matter compared to it is like an imperceptible mist. When, however, we are told that this imaginary substance has an energy in every cubic millimetre equal to 1000 h.p., we do not feel inclined to dispute it, although we wonder how the estimate is arrived at.

In conclusion, I would say that Science was the undoubted son of Religion. All Christian works were conducted for the sake of Religion, but it broke loose and wandered into a far country. It is now being brought back by ways it knows not, to emphasize the Bible statement that "In the beginning God created the heaven and the earth." I join with Mr. Maunder in upholding the Creator and the revealed truths of the Trinity of Father, Son and Holy Spirit.

Rev. Chancellor LIAS, M.A. : I wish particularly to express my veneration for the reader of the paper. As a theologian, as a man of affairs, and as a man who is well acquainted with the lay mind, I do not know that he has a superior among us. In connection with this subject, the Dean got into public controversy with Professor Huxley, and as I am a year or two older, I may claim to remember him myself. He was a very capable and inspiring antagonist, but I have heard it said—and never denied—that the Dean was the only man, not even Mr. Gladstone excepted, who could face Professor Huxley without coming off second best.

With regard to the controversy with Huxley and Tyndall, I do not think that sufficient attention is paid to the fact that both these Professors very considerably modified their opinions in after life. I had some knowledge of the late years of Professor Tyndall, and I believe his antagonism to Christianity as an inspired religion was very much modified before he died.

I should like to emphasize what the Dean says about the inspiration of Scripture. In spite of all said against it (and very much has been said lately which I regret), yet such inspiration is not by any means disproved, and, if I may say so, it never will be. As to the difficulties under which we are labouring at the present time, these have been anticipated in the Scriptures. We have a

gathering of all mankind against the deniers of the teachings of Christ's Church, and breaches of laws and morals that no Christians have ever been capable of in the past.

Rev. J. J. B. COLES, M.A. : I think we ought to be bold enough to say that the falsehood of the testimony of the New Testament in regard to miraculous events would be more miraculous than the events themselves. In the admirable summary of the Dean, and the way in which he has shewn how the truth of statements in Scripture have been withheld, could we not carry the thought a little further, in connection with what Mr. Maunder has suggested, and recognize that we are now face to face with Pantheistic ideas and Mysticism, from which even such bold men as Sir Oliver Lodge are not free? May I illustrate? We read: "Without faith it is impossible to please God." It does not say without faith in miracles. As a matter of fact, many believed in Christ when they saw the miracles He wrought, but you can believe in the truth of the miracles and yet leave out much more important forms of belief, and I think this is the case at the present time.

Then we are face to face with a further deeper grasp of the universe as a vast whole—the wonders of the heavens. We are looking forward to a paper upon the "Distances of the Stars." We cannot grasp these things: we stop short. When you come to truths set out in Colossians in regard to God's purpose in Christ, to believe such statements is even more wonderful than to believe the miracles. "By Him were all things created all things were created by Him and for Him." The most glorious possession of the whole crowded universe is distinctly said to belong to Christ. It is well for us to hold fast to these truths, so ably rehearsed by the Dean, and take the exact statements of Scripture about the more wonderful things which are therein recorded.

Mr. M. L. ROUSE, B.A., B.L. : I am deeply in sympathy with this admirable paper. As to ether, I thought it was proved by the discovery of the X-rays. When you reduce the quantity of air down to an infinitesimal point, a millionth part or something of that sort, by admixture, as well as exhaustive dumping, you have got the effect of these X-rays, which hitherto you did not get. Whence did it come? No longer was the electric flash propagated as in the air,

but instead of that you got some mysterious radiation from end to end of the tube, surely propagated by this mysterious ether.

Mr. S. COLLETT suggested that the paper should have been entitled "Science and Revelation" instead of "Science and Religion," because Revelation implies a revealing God, whereas there are many religions which have no relation to God. What is meant by "Science," very few people know; we really mean what man knows of Science, and as we know only in part, our knowledge is very limited and imperfect. Should we speak, however, of Science and Revelation agreeing, that is impossible, because Science is subject to change, whereas Divine Revelation cannot change.

Professor LANGHORNE ORCHARD, M.A., B.Sc.: The Institute is under great obligation for the paper to which we have had the privilege of listening. We have been taken over a most interesting and comprehensive survey of the battlefield during the last fifty years, not only between God's Written Word and Science, but between God's Written Word and certain scientific conjectures. The pleasure and satisfaction which we have experienced has been the greater in that our guide and conductor in this survey has been one who has worthily borne his part as champion of the truth. We congratulate him and ourselves on seeing what has been called "the reconciliation," in other words, the acknowledged accuracy of God's Word, "the Bible." We hope that the Dean may yet be spared for many years to see the crown put upon the victory of the truth.

I must say that the expression "reconciliation" of Science and Religion does not attract me as a happy one. Science means knowledge; it does not mean guesswork. Professor Tyndall, when he stated that certain phenomena, which he could not bring under the ordinary Laws of Nature, were attributable to physical processes, was disguising himself as a scientist. Science says you have no right to make such assumptions. Professor Tyndall said he saw no connection between the two, although he says there must be a connection. That was almost the statement of a prejudiced partisan. Law is uniformity of force, which, so far as we can trace it, is the action of spirit; in other words, the action of will. Natural phenomena always attend the laws of nature. There can be no reconciliation between the Word of God and Science, because the Word of God is truth and true Science is knowledge and there-

fore truth. There is, of course, room for reconciliation between scientists' opinions and the Word of God, and we are very glad to welcome that reconciliation in the name of Science as well as in the name of true Theology.

THE DEAN'S REPLY.

I do not feel that I have anything to which to reply, except to acknowledge the very great generosity with which the audience has been kind enough to listen to my observations, and to acknowledge the vote of thanks. I am very thankful indeed that what I have said commends itself to the mature judgment of an audience like this.

With respect to the Chairman's observation about criticism, I should like to say that, all through these discussions, I have felt that since the disappearance of those great men Lightfoot and Westcott, criticism has been altogether on the wrong basis, and simply because it has departed from the rules which they as members of the great scientific University of Cambridge learned from their rulers who in Newton's *Principia* are strict adherents to facts. It is not my business to frame hypotheses, but that has been, I may say, the sole business of German critics. If you begin that process, there is really no end to it. I have never been opposed to criticism in any way whatever, because criticism is the legitimate province of the human mind; critical theories, however, are another thing. You are bound to criticise, but you must do it upon the basis of facts. The predominant theory with respect to the Old Testament involves the supposition that the Jews were a people ignorant and mistaken with regard to their own religion, and to suppose that one of the ablest and most tenacious nations in the world had a false account of their religion imposed upon them, seems to me to be preposterous.

There is one observation of Lord Bacon's which seems to me to apply to a great deal of criticism. Lord Bacon says: "The faster runner a man is, the further he goes wrong if he once gets off the course." One observation has, I confess, amused me, and that was Mr. Maunder's deprecation of his sphere as a limited one. I was under the impression at Greenwich that his sphere was the stellar universe, and I think that must be large enough for anyone. I am very grateful for his observations, because he is living among the

Laws of Nature in the highest development down at Greenwich, and I am glad that my views commend themselves to his train of thought. I was sorry to hear that he concluded by thinking that there is danger of a great recrudescence of Pantheism, which I regard as a very serious thing. I think those interested in that observation could be referred to a very great book, which is far too much forgotten in these days, Coleridge's *Aids to Reflection*, the conclusion of which is one of the most beautiful and powerful hypotheses to be found anywhere. Perhaps I may relieve the strain of this audience, if they will forgive me, by quoting some extremely beautiful lines on Philosophy in a poem which he addressed to his wife :—

And what if all of animated nature
 Be but organic harps diversely framed,
 That tremble into thought, as o'er them sweeps
 Plastic, vast, one intellectual breeze
 At once the soul of each and God of all ?
 But thy more serious eye a mild reproof
 Darts, O beloved woman ! Now such thoughts
 Die unhallowed dost thou not reject
 An' biddest me walk humbly with my God,
 Meek daughter in the family of Christ !
 Well hast thou said—holily, dispraised
 These shapings of the unregenerate mind ;
 Bubbles that glitter as they rise and break
 On vain Philosophy's aye-babbling spring,
 For never guiltless may I speak of Him,
 The Incomprehensible ! save when with awe
 I praise Him, and with Faith that inly feels
 Who with His saving mercies healed me,
 A sinful and most miserable man,
 Wildered and dark, and gave me to possess
 Peace, and this cot, and thee, heart-honoured Maid !

These, ladies and gentlemen, I think are the sentiments to which we should always come back.

The CHAIRMAN : We have to thank the Dean very much for his lecture, and also for his remarks on the Discussion.