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A table of contents for *Journal of the Transactions of the Victoria Institute* can be found here:

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1912.

523RD ORDINARY GENERAL MEETING.

MONDAY, DECEMBER 11TH, 1911, 4.30 P.M.

JAMES W. THIRTLE, ESQ., LL.D., M.R.A.S., TOOK THE CHAIR.

The Minutes of the previous Meeting were read and confirmed, and the following elections were announced :—

MEMBERS : Rev. S. H. Wilkinson (formerly an Associate) ; Mrs. Lewis (Camb.).

ASSOCIATES : Mrs. Gibson (Camb.) ; Thomas G. Hughes, Esq.

NATURAL LAW AND MIRACLE.

By Dr. LUDWIG VON GERDTELL, Marburg a/L.

THAT the Gospel of Jesus Christ stands or falls with a belief in miracles is beyond all doubt. The Gospel is essentially a matter of revelation, and revelation itself is miracle.

Modern unbelief has shown a true instinct therefore in directing its criticism against the faith in the miraculous which belonged to early Christianity. The two principal objections of a philosophic nature which modern unbelief levels at the miraculous are these :—

1. Miracles are impossible, since they destroy the fundamental principle of modern science—the absolutely unalterable, the all-embracing Law of Causation.
2. Miracles are impossible, since they contradict the unchangeable Laws of Nature as known to us.

If these objections could be upheld, the Gospel would be destroyed. Thenceforward culture would be linked with unbelief, and the Gospel with barbarism. The Gospel could then advance only amongst those classes of mankind who were of deficient intelligence, and only prolong that miserable and

ridiculous existence which is the lot of all forms of superstition.

We, the disciples of Jesus, have therefore not only the right but the duty of showing the scientific world that we retain our position in purity of conscience, enlightened by scholarship.

We commence our inquiry with the consideration of the first objection.

Miracles are impossible, since they destroy the fundamental principle of modern science—that of the absolutely unalterable and all-embracing Law of Causation.

Before we reply to this objection we must arrive at an understanding with our opponents on two preliminary questions :

1. What is to be understood by the Law of Causation ?
2. How does modern science establish its foundation principle of the absolute validity of the Law of Causation ?

We commence with the first question : What is to be understood by the Law of Causation ?

By Causality or Natural Law we indicate that well-grounded deduction which rests on the innumerable facts of experience, namely :—

1. That every occurrence in the world of nature has a corresponding cause.
2. That the same causes have the same effects in all cases ; or otherwise expressed, that all occurrences in actuality follow one another according to a certain unalterable rule.

For the elucidation of this second definition we give several illustrations, which may be multiplied at will. A stone, allowed to drop from a tower, finding no other resistance than that of the pressure of the air, falls always in the direction of the earth's centre. The direction of the stone's descent is therefore according to an invariable rule. Water freezes at 32° Fahr. ; nitroglycerine explodes with intensest violence under sudden heat of about 420° Fahr. or by means of impact or pressure of a certain force. Strychnine, administered in a certain dose, always causes the death of the person concerned.

As soon as we know these rules of consecutive action, we are in possession of a limited power of natural prophecy. We are able, that is, as soon as an event takes place—such as the swallowing of a certain dose of strychnine by anyone—to predict with certainty in every case the result, viz., the death of the person concerned.

Let us examine the second question—How does modern science establish its foundation principle of the absolute validity of the Law of Causation?

The investigator represents human reason, methodically trained. It is well, therefore, first to inquire what impressions are made upon the less cultivated, the simple person, or even upon the brute beast by the fact of Natural Law.

We commence with brute creation. It is an incontrovertible fact that the brute creation has a sort of intuition concerning those fixed rules by which the processes of Nature are governed. We give some instances of this statement.

No one would believe that the pike stands on a very high plane of brute intelligence. Yet the Berlin zoologist, Möbius, relates the following interesting observations with a pike. A bowl of water was divided into two contiguous compartments by a piece of glass. On the one side was a pike, on the other a variety of small living creatures specially to his taste. The pike went straight for his prey, but received for his pains, not the expected *bonne bouche*, but a disquieting shock from the invisible piece of glass. After repeating the process for some time, the pike finally learnt to deny himself. Several weeks after, the glass division was removed. The pike now swam freely amongst the other creatures. But it never entered his head to attack them. He had—if in this case without justification—apparently made a “Law of Nature” for himself—namely, that to attack his prey resulted in a revengeful blow upon himself.

Brutes have, like men, the power of holding impressions in the memory. The dog will recollect his master after years of separation. Without this feature of animal intelligence the circus performances for which animals are trained would be impossible. Animals are therefore able to note the sequence by which events follow one upon the other according to natural processes. They can, under certain conditions, by a mechanical instinct, reproduce this sequence by means of the rules impressed in their memory. If a dog has been often struck by his master, he knows, by experience, the regular sequence of events: the raised whip, the pain that follows. And every time that the master raises the whip, instinctively, that is, involuntarily and unconsciously, the sensation of the approaching pain forces itself upon him. The dog betrays this feeling plainly by his plaintive cries and crouchings, before even the blow has descended. He anticipates the blow with certainty. Indeed

he already feels it, as if it had taken place, even though it may possibly not take place at all.

The dog places the once experimentally acquired rule that the same cause has always the same effect in the service of his practical policy. When he learnt to "beg" his master always rewarded the completion of his performance by a dainty morsel. The dog came to connect in his memory the two ideas: "beg"—dainty morsel. After a time he comes to "beg" without being told, when he sees the morsel ready. The dog satisfies the condition—that of begging—and expects on the round of experience the consequence thereof—the reception of the desired morsel.

The eminent English philosopher, David Hume, justly maintains, therefore, in his penetrating and epochal work, *A Treatise on Human Nature*, that the brute beast derives a fact directly from that which has acted upon its senses, and that this deduction rests entirely (?) upon past experience, since the beast expects the same consequences to follow the present happening which it has seen always to result from previous similar happenings.

Now let us advance a further step and inquire what impression the primitive human being receives into his consciousness from the fact of Natural Law.

Even the smallest child, slowly awakening into intelligence, is able to form an impression of the regularity of consecutive action in two related events. It experienced hunger and at first simply cried in sheer discomfort. This was always followed by the appearance of the mother with the bottle. It soon notes the connection of the two related occurrences, and for the future it uses its voice to summon mother and the bottle.

A child of about a year old accidentally burns its finger on one of the grate-bars. It connects this thereafter with the sight of a grate-bar, which by mechanical instinct calls up the idea of heat, and excites fear and reluctance to touch the bar.

Here we have the first psychological root of the principle of causation in the fact of the association of ideas.

- (a) We understand by "association of ideas" the involuntary and instinctive joining up of sensations and conceptions in the same consciousness: each observation showing experimentally the effort to call back to consciousness those mental images that have previously been connected either by space or time with the observation.

For the elucidation of this sentence we mention some well-known psychological facts.

An old man, looking among his time-stained documents, setting them in order before he dies, suddenly lights on a long-forgotten faded lock of hair; at once the precious vision of his early love starts up before his mind's eye. He lives again in that glad May morning on which he cut the lock from the girl's head. He sees again her smile, and the words they exchanged, forgotten for sixty years, awaken in his memory.

Another instance: we have all suffered from a wound. Every sight of a wound hereafter forces upon our imagination the sense of pain. If we look at a bit of iron, we expect—and that for the same reason—to find it heavy. The observation of a piece of iron, that is, always excites in us on the ground of previous experience the conscious impression of weight.

The "association of ideas" is, in opposition to the sense of causality, an involuntary mental act. It rests on strong instinct and operates mechanically.

(b) A second equally psychological root of the idea of causation is the instinct of inquiry, possessed by every healthy human being.

This sense is developed in people just as is the power of speech. As people carry their power of speech to varied degrees, so with the instinct of inquiry.

The human mind is so fashioned that it is always asking "Why?" This fact, like that of the association of ideas, is one that cannot be explained or traced to its origin, but can only and simply be recognized.

The instinct of inquiry lends itself to confirmation most clearly in the case of novel experiences which occur in the sphere of human life.

We may see it specially distinctly, for instance, in children of three or four years. As to these every object and occurrence is novel, their inquiring instinct finds most energetic play. They plague us adults a hundred times a day with their stereotyped repetition, "What is that?" "Why is this made so?"

As the human mind by reason of its make-up is under the necessity of exercising its will in the direction of reasonable objects, so is it compelled in the same way to seek the cause of every object or occurrence.

(c) The last root of the causal principle is that of a constantly repeated experimental fact: our instinct of inquiry finds satisfaction in constant experience:

the mechanical course of our imaginative associations becomes more fully confirmed by the actual occurrences of the anticipated observations.

Let us explain this more in detail. We have experienced that fire is hot. First our instinct of inquiry urges us to investigate the source of heat. It finds it close at hand in the fire. Thereafter whenever we see a fire we are compelled by the natural mechanism of our imaginative associations on the ground of former experience to anticipate the sensation of heat. Each test confirms the correctness of our anticipation. Fire is experimentally always hot ; and as this anticipation is without exception strengthened by innumerable experiences, it becomes by continued practice a mere matter of course, a second nature. We can then no longer doubt that fire and heat are inseparable, or as Kant and others have expressed it, they are "necessarily" united.

However much the majority of unschooled scoffers may believe in this apparently necessary connection between cause and effect, they are just as little acquainted with the fundamental principle of modern science, viz., the "absolute" validity of the Law of Causation.

The Berlin philosopher, Friedrich Paulsen, well says in his *Introduction to Philosophy*:—

"The whole of popular medicine consists of observed results: whether rightly or wrongly observed ; that is, if one does this or that, then one catches cold or fever. If you have fever, you must sweat or be dosed, etc. Many feel no need of an explanation of the relationship between the allied phenomena. Nor are they upset at all if the means do not always cure. Their Law of Causation does not demand it. Its formula seems to be: This follows that generally, but sometimes it turns out otherwise. Indeed this formula corresponds to their demand. Practical life has always to do with consequences such as are only rules with exceptions and are not regardable as fixed laws: the peasant has to do with weather conditions and occurrences in organic life, which are variable and answer to his formula ; the labourer with materials and tools which are not always of the same quality ; the teacher, the official, with human constitutions which, alike in general features, have all their peculiarities and follow no identical line of action."

It is certain that the simple-minded person, that is to say, the man unschooled in the spirit of modern science, knows nothing of an absolutely inviolable Natural Causation. This can be historically proved. We need only to call to mind the most highly cultivated types of classical antiquity.

Homer was the greatest poetic genius of antiquity. But he knows of no absolutely inviolable causality. Gods and demons intrude themselves constantly and ludicrously into his historic matter, and submit it to obvious and extreme variation.

Even such a truth-loving historian as Tacitus, who wrote centuries after Plato and the Stoics, coolly records miracles, which are in no way behind those of Homer.

The most influential thinker of antiquity was Aristotle. But even this realistic philosopher, naturalist as he was, contents himself with the notion of a system of causes which permits of incontrollable exceptions. Under the title of accidents, they are relegated to that indefinite and irregular factor of nature, the material, while regularity is ascribed to the other factor, that of intelligent being. On that account, science, so far as this disturbing factor enters into it, can get no farther than the formula, "as a rule" (Paulsen, *Einleitung in die Philosophie*, 1906).

A philosopher like Epicurus, otherwise so consistent and materialistic, accepted as his atomic theory that of a causeless deviation from the normal.

These instances suffice to show that even philosophic intellects of the first order have probably had no acquaintance with an absolutely unalterable Law of Causation in nature.

Finally, we hardly need to go so far back, for about one-half of living philosophers stand to the conviction that at least one class of important phenomena, that of human will, is independent of the unalterable Law of Causation, which in all else they zealously defend.

The declaration of the unexceptional validity of causality is rather a special achievement of modern science. The latter expresses itself thus: the naturalist must exclude all supernatural explanations; in his investigations he must be guided by the theory that every occurrence has a natural cause, and that the same cause always produces the same effect.

But this theory of a universal and unalterable Law of Causation is, for the accurate naturalist, no longer a new dogma of natural philosophy established for all time past and future and for the whole cosmos. Rather is it for him, so to say, a utilitarian principle, that is, a method of research which is, in relation to all his investigations, to be presupposed as a working hypothesis, and which is to assist him in the practical experience of his science.

The Causal Principle remains therefore to the true and critically exact student nothing more than a working

hypothesis, which, in its origin, differs not at all from any other hypothesis: it is a rational idea which is forced upon the student of nature as he advances into his analysis of actualities, the soundness of which he continually proves by experience.

Let us take a concrete example: why do we decide

- (1) That every stone thrown upwards into the air will fall back to the earth, if nothing but air pressure resists it; and
- (2) That, if the object does not return, there must have been some preventative element, such as, for instance, a shock to shatter into dust, or a whirlwind, or the like.

The answer is this: from abundant experience, in which the apparent exceptions are attributable as a rule to imperfect observation, and which has been verified by numerous tests, the main conclusion has been reached: we believe that it will always be so, because it has always been so. We have no reason to doubt it, and therefore we call our conclusion "Knowledge." For practical life this "knowledge" has shown itself to be so valuable and satisfactory that it would be foolish to depend upon any other premiss (Georg Runze, *Metaphysik*, 1905). When we fire a shot into the air and fail to find it again, we know as a practical certainty that the shot has not disappeared into the cosmos and lighted perhaps on Sirius, but that it has fallen somewhere on the earth. But this practical certainty is, as a matter of exact theory, not proved or apodictical "knowledge," but only a well-grounded conviction of a high degree of credibility: theoretically considered, it would at least be conceivable that a bullet might, under different conditions, escape into the cosmos. But, so far as experience goes, bodies always return to earth. We therefore assume that in agreement with previous experience, all bullets discharged from a rifle return as a matter of course and practical certainty to earth, even when we have no evidence of their whereabouts. And we have a right to this assumption until a case occurs which can be proved to be an exception.

But this practical certainty must not for a moment be allowed to lead us into the error of thinking that the Causal principle is aught else than hypothesis. To be sure, the Causal principle *is* a hypothesis of a remarkable kind. It differs from all other hypotheses which enter into Natural Law in these respects:

- (1) It is a hypothesis with which we approach every future possible occurrence in Nature. We expect every

occurrence in Nature to conform to it. It is, therefore, the most general and comprehensive Law of Nature known to us.

- (2) It carries with it the validity of all other hypotheses of Natural Science; which stand or fall with it.
- (3) It provides us with the only possible means of foresight into those things which lie beyond that which is directly present to our conceptions of sense or memory.
- (4) It is the essential antecedent to all human thought and action.

On the other hand the Causal principle shares the weakness of every other hypothesis: it demands proof from every new experience and confronts therefore—if considered with critical accuracy—the danger of being, if not reversed, yet submitted to limitations in its validity by some completely new experience. A present system of Natural Law can therefore—strictly speaking—never pledge the past or future. The only real proof for these, as for all other hypotheses in Natural Science, lies along the line of constantly repeated experience.

By this we have established the fact that the Causal principle is the most general and comprehensive of natural laws; that it is therefore most clearly itself a Law of Nature.

When opponents use the Causal principle as a weapon against the facts of early Christianity, they declare themselves to be opposed to miracles on the ground of an ostensibly unalterable Law of Nature.

Thus the first objection leads to the second, and the two can be disposed of at once.

Miracles are impossible since they contradict the unchangeable Laws of Nature as known to us.

The modern mind is nowhere so proudly self-conscious of its mental possessions as in regard to this conception of "Natural Law." This conception has pressed itself into the centre of all scientific thought in a manner of which the ancient and mediæval mind knew nothing.

Nor for the purpose of exact research is the argument of "Natural Law" again a new philosophic dogma established for all time. Our whole acquaintance with the Laws of Nature has its source rather, so far as their purport and argument is concerned, simply and solely in a scientific observation of actualities. The Laws of Nature are really nothing more than

descriptions of our scientific experience. Our knowledge of the Laws of Nature is here just as little "unalterable" as our experience itself. So far from being unalterable, it is, on the contrary, as an entirety, very variable, being subject to constant change and dislocation. It needs therefore constant revision on the basis of sustained and scientific observation.

One of the most eminent men of recent times, Eduard von Hartmann, has in his work *The Outlook of Modern Physics* (1902), once more and with emphasis called attention to the hypothetical element in the Natural Sciences. What he says of Physics applies to all branches of Natural Science. He says:—

"The sooner physics remembers its merely hypothetical character, the better will it be for its scientific recognition in public opinion. As the Natural Sciences in their fundamental conceptions and logical tendencies have become, generally speaking, an echo of a philosophic bias formerly dominant, so it is again in the second half of the nineteenth century, when they have taken over the claim to unqualified certainty from a dethroned speculative philosophy. Long has the spirit of the times submitted its faith to this claim, but scepticism, which, leagued for so long with the Natural Sciences, opposed philosophy, now begins to waver in its allegiance. The recoil is strongest where the claims were highest, and public adulation of them greatest. The Natural Sciences, the hypotheses of which have been accepted by the public of the last half century as the infallible dogmas of a new revelation, may have to endure temporarily an equally unjustified depreciation with that of philosophy in the last generation, unless in good time it remembers the hypothetical character of its findings. . . . Physics can never attain to a certainty denied to every practical science and which is only to be found in a purely formal science. It must content itself with the greater or lesser probability of truth in its results . . . Its conceptions and laws as well as its causes and the existence and constitution of that nature with which it deals are alike hypothetical."

In truth the expression "absolutely unalterable" is only applicable in Natural Law to that which proceeds from human intelligence—such as logic and mathematics—the purely formal.

On the other hand, the history of all Natural Sciences shows that the argument of Natural Law has only a relative validity. It requires rearrangement from time to time. This is again dependent upon the actual occurrences met with in experience. If in the study of Natural Science wholly different decisions are arrived at, it will be necessary to formulate afresh the Law of

Nature which is therein involved, in order to possess a canon which will precisely and fully reconcile that which is characteristic of one group of natural phenomena with all else that we at present perceive in regard to it.

A "Natural Law" which has held good for a millennium may need to be altered or modified to-morrow, through one successful experiment or one single discovery.

For the better appreciation of this, think of the revolution wrought by Copernicus in the history of astronomy. Till his time, the theory that the sun revolved around the earth held good as a fixed "Natural Law." But if anyone were to support this "Natural Law" to-day every third class scholar would assign him his place as scientifically obsolete.

But not only the purport and argument of the Laws of Nature, but also the view of the possible or impossible is probably subject to the changes of time and the changes of the material cosmos. Let us look only at the following facts.

Mediæval theology rejected the thought of the possibility of an antipodes with righteous anger as impossible nonsense: yet this truth now presents no difficulty to the credence of the most illiterate Capuchin friar.

In a legal manual of the eighteenth century an incidental sentence declares that contracts wherein the undertaking of one party includes an impossibility are invalid: and it cites as an illustration: "as if for instance we should undertake to perform a flight in the air." In a subsequent edition of the book the writer adds the foot-note, "This instance is no longer suitable, for in the meantime M. Montgolfier has invented the balloon."

And if the apostle Paul in one of his admittedly genuine epistles had related that Jesus had rendered Himself visible to His disciples through a closed wooden door, the whole natural and popular philosophy of the nineteenth century up to the date of the discovery of X-rays by Professor Röntgen would have declared with one voice that such a "miracle" was ludicrously impossible, since it contradicted "the unalterable Laws of Nature as known to us."

When the first German railway was about to be built, the medical faculty of Erlangen expressed their official opinion that the prospective passengers would, through the rapid transport, become *en masse* the victims of incurable brain diseases.

A traveller told the negroes in Central Africa that the water in Europe became, at certain times of the year, so hard and

strong that horses and carts could be driven over it. But the negroes thought it to be extravagant "brag," and laughed him to scorn. They considered a "miracle" such as that to be impossible, for it was altogether irreconcilable with the "unalterable Laws of Nature as known to them."

In facts and occurrences such as these, facts which have been declared impossible, there is no case of true miracle. Our philosophic opponents really stand on the same ground as the negroes. This statement is made neither as joke nor insult. We desire only to help them to see their own position. The fundamental difference between us and them is this: our opponents think mediævally and we think as moderns. Our opponents subordinate the reliable and attested actuality of early Christianity to a dogma of popular philosophy called "the unalterable Laws of Nature as known to us." We, on the contrary, subordinate our thought and philosophy to the brilliantly proven facts of history. Our opponents have respect, but lack the critical faculty for a current dogma. We, on the other hand, approach this as we approach all dogma, with a critical faculty devoid of respect. In reality it matters little whether our opponents derive their dogma of the unalterability of the known laws of nature from the Catholicism of the middle ages or from the philosophic enlightenment of the twentieth century. Dogma remains dogma. And to play off dogma against the united experience of the apostolic age is nothing else but to think mediævally. The scientific instincts of theological free thought are, in point of fact, mediæval, even though they may appropriate the set phrases of the modern thinker. And the mediæval mind represents something that must eventually be outstripped by the modern mind.

These two objections of our opponents represent the main argument of the scientific superstition of modern culture. The superstition is, indeed, only recognised as such by a few. The modern world of culture, hypnotized by the phrases of an enlightened age, languishes in a bondage of naturalistic dogma, of which it is for the most part quite ignorant. We must therefore penetrate more deeply into our subject.

Our opponents really treat the "Laws of Nature" as if they were a mystic power, brooding over the individual occurrences of Nature and determining the realisation of their changeless course. They put this power in the place of the Godhead, and see in it an object of almost divine dignity. Justly does such a shrewd and learned observer of the modern world of culture as the philosopher Rudolph Eucken say in his *Geistigen*

Strömungen der Gegenwart (1904), "So does the remarkable cult of natural law pass from Giordano Bruno through the new era to the present time. The more sceptical men are to-day about religion, the more do they make a fetish of Natural Law. The more audaciously the declaration of a law and canon is pressed, the more easily does it find acceptance. We are accustomed to look at a fact before we recognize its truth. But to doubt a law seems to be a sin against the spirit of science."

Now how is it really that our opponents have come to lean on this dogma of the "absolutely unalterable Laws of Nature"? The answer is simple enough. Our opponents have observed that the occurrences in Nature arrange themselves according to certain rules in Nature and recur in regular sequence. From this most correct observation they draw the false conclusion that these rules in the world of Nature are absolutely "unalterable." The regularity with which natural phenomena recur produces in our opponents, simply as a matter of habit, the expectation that that which has always till now been, must repeat itself again to-morrow.

Look at the following case: a child of five years is left alone on an island, having never heard of the possibility of the death of a human being. There he grows to be an old man of seventy. Could this old man, on the ground of the fact that he had consciously lived sixty-five years on the island, be sure that he would live to be seventy-one? There is no necessity for the fulfilment of his expectation. He might pass away the following day. Experience alone would inform him.

But the fallacy of our opponents is, scientifically considered, more short-sighted than the wild imagination of the old man. Our opponents forget that to scientific observation only an almost infinitesimal fraction of the universe is accessible. And their observation is still further limited to a trifling period of time as compared with the time in which the universe has existed.

The advance of the dogma of the absolute unalterability of the Laws of Nature as known to us is thoughtlessly premature. It is an expression implying satiety of knowledge and a circumscribed dogmatism.

We can therefore only ask our opponents to lay to heart the true utterance of Sigwart, the well-known logician, when he says in his *Logik* (1893):

"It is but an empty, rhetorical phrase so to speak of the Laws of Nature as if the formulary itself operated with magic power on

phenomena, and to ascribe to such laws a somewhat which does not belong to them. Laws can never be reasons for actual happenings, they can only express the manner in which practical things constantly behave."

When our opponents, therefore, aver in relation to the miracles of early Christianity that they contradict all general, natural, and scientifically historical experience, they do not thereby in the least disprove their possibility. They do naught else by their objection than establish the true conception of a miracle. For what is a miracle? Answer: An occurrence that forms an absolute exception to all general experience.

The first objection, consequently, stripped of its elegant phraseology, simply states the following absurdity—an occurrence which has never been experienced, never can be. The scientific sentiment lying within this objection of our opponents would, if consistently practised, lead to the decline of all exact research. It would throw us back into the position of a Thomas Aquinas. It is the negation of the spirit of modern science, which spirit we strenuously follow. And we have as moderns an interest in the radical and complete disproof of the first objection.

Summarizing we add:

Our opponents in their first two objections commit the following mistakes. They take a scientific working hypothesis, which should remain intact in its own sphere as a practical guide for the investigator, lift it out of its own place and confidently elevate it into a dogma of natural philosophy; that is to say, from the hypothetical supposition of the investigator that every cause has an effect, and that the same cause produces the same effect, they unconsciously evolve a dogma, which is to overmaster all experience, the dogma of the Law of Causation, all-controlling and absolutely unalterable.

Considered logically, it is within the power of our opponents to raise the doubt as to whether the miracles of early Christianity were observed and reported with sufficient care to warrant their acceptance as facts. But our opponents have no right to play off against us, the adherents of Christianity, who have examined these questions, and find ourselves compelled to accept the miracles of the apostolic age as facts, the Causal principle or any special law of nature; for thus to oppose a hypothesis to a fact is a mediæval farce. If the miracles of early Christianity—brilliantly, scientifically, historically attested as they are—really do form exceptions to the

unalterable Laws of Nature as known to us, then indeed it is high time that the genuine modern mind should afresh revise his ideas as to the "known and unalterable Laws of Nature," and that he should adjust them to correspond with facts. Even then the orthodox Christian has possession of the fact of causality, which is only unalterable in the claim of modern science, and as its so-called fundamental principle. This fundamental principle, so called, is for the Christian thinker a postulate only, not a new dogma. We close, therefore, with the following thesis: the question of the credibility of the miracles of early Christianity is not philosophic but purely historic. These miracles may be considered as facts as soon as satisfactory proofs of their historic credibility have been furnished.

Note.—These proofs I have presented in a special study already translated into English, viz.: Dr. Ludwig von Gerdtell, *Have we Satisfactory Evidence of the Miracles of the New Testament?* Translated by Samuel Hinds Wilkinson. John Bale, Sons, and Danielsson, 83-91, Great Titchfield Street, London, W. Price, 1s.

DISCUSSION.

Dr. WOODS SMYTH thought the interesting paper was particularly appropriate at the present time, and contrasted the views of the Rev. J. M. Thompson and other University teachers with those of Professor Huxley, for example, who sees no difficulty in the possibility of miracles, and recognizes that those of the Bible are rationally accredited.

Mr. MARTIN L. ROUSE thought it was a daring assumption that God was bound always to work by the common sequences of cause and effect, and all the more so because those sequences are subject to exceptions. He instanced the case of water differing from the general law of contraction with lowering temperature, when it reaches 39° Fahr., at which point it begins to expand; and referred to a waterspout acting against the usual law of gravitation. In these cases, and many others, a higher law is introduced, and for a special purpose. Men, too, utilize higher laws in overcoming lower: what possible difficulty therefore could remain to prevent men's

belief that miracles have been wrought by God for the sustenance and deliverance of His people, or by Christ the Son of God for confirming the divine origin of His nature and His message ?

The Rev. C. L. DRAWBRIDGE said that success in man's scientific achievements was in exact proportion to the extent to which he acted in harmony with, and not contrary to, God's orderly government of the cosmos, and asked, "Did Jesus Christ act in accordance with God's normal government of the cosmos, or did He deliberately cut right across it?" and added :—We should also ask by which of the two modes of action would He be most clearly displaying His oneness with the Creator and Governor of the universe ? Let us leave for a moment the various ancient and modern schools of theological opinion on the subject and get back to what the Master Himself said about His achievements. Our blessed Lord studiously avoided acquiring a reputation as a wonder worker. The records of His sayings and doings have come down to us in Greek, and the one word which comes nearest to, although it is by no means identical with, our word miracle, is *τέρατα* (*terata*), which means marvels. (The other words which are translated "miracle" in the Authorized Version, *σημεῖα* (*sêmeia*), *δυνάμεις* (*dunameis*), and *ἔργα* (*erga*), certainly do not mean miracle.) Well, Jesus Christ did not employ the word *τέρατα* (*terata*) when speaking of His own works, but only when referring to false Christs who would arise. And He implored His followers not to attach undue importance to such marvels. Marvellousness implies no abnormal divine action, but human surprise due to ignorance on the part of those who marvel. Savages marvel at balloons. The Authorized Version arbitrarily introduces the word miracle very frequently, because the Authorized Version was translated at a time when men looked for the evidence of Providence almost solely in exceptions to uniformity. The word miracle was largely left out of the Revised Version, partly because it does not occur in the Greek text, and partly because men had very wisely come to perceive God's action in normal occurrences, as well as in what appear—at the present stage of our knowledge—to be abnormal phenomena of the universe.

Personally I ascribe the Gospel phenomena to the great divine power possessed by Christ, working in accordance with the Creator's usual habits of action, but in such a wonderful manner as to transcend—in many instances—our very finite and imperfect

knowledge of nature, *i.e.*, of God's orderly government of the cosmos.

The CHAIRMAN: It is, in my judgment, important to decide what we understand by "miracle." Assuredly we are not specially concerned with the *terata*, that is, "wonders," or acts of prodigy, which Christ foretold would be performed by false prophets. Acts of a marvellous character, such as might be wrought by deceivers, may have their proper interest; but it is not in order to an understanding of such acts that Christian apologists are to-day devoting their earnest thought to the subject before us. Rather the enquiry is as to the *sêmeia*, or "signs," performed by Jesus Christ—not to signs in general, but to signs specifically attributed to our Lord—that thought is devoted. We are concerned to understand, and place in relation to questions of faith, deeds which, as claimed, were done by the exercise of divine power, and at length recorded in the Gospels; *with the object of inducing men to accept Christ*; in other words, of leading them, although originally biased against Him, to *believe on Him, to rely on Him*, as the Son of God, according as we read in John xx, 30, 31, *cp. v. 29*. Strictly speaking, investigations regarding miracles pass by, or ignore, mere wonders, and concern themselves with deeds and performances which manifestly challenge a recognition of the hand of the Infinite. In this light, certain narratives recorded in the Old Testament assume an importance alongside those of the New, and, above all such miracles, alike in significance and influence, stands the victorious resurrection of Jesus Christ from the dead.

Rev. JOHN TUCKWELL, M.R.A.S., said that if we were to avoid confusion in our discussion we must have a little clearer definition of our terms. We must take care not to deny the reasonableness of the distinction between the natural and the supernatural. By the natural I suppose we mean all that belongs to the cosmos—the organized creation—which will include the subjects of all our sureness, whether physical or otherwise. But there is, of course, something beyond. The supernatural must have existed before the natural, and be the antecedent from which it has sprung. The cosmos must have had a beginning, but before that beginning there was the supernatural Creator, the Author of it. Again scientific knowledge must be distinguished from science properly so called. Science is a fixed quantity and cannot be added to until our Creator

sees fit to create some new fact. But scientific knowledge is continually changing and growing. Hence, an occurrence cannot be described as a "miracle" because it does not come within the circle of our scientific knowledge. Dr. von GerdteLL's definition of a miracle is inadequate, and, of course, he did not intend it to be taken as logically and scientifically sufficient. The freezing of water would not be a miracle to the King of Bantam, merely because he did not understand it. If I may venture to describe a miracle, I should say it is an effect produced in the sphere of the natural by a force in that of the supernatural. Our Lord's miracles of healing the blind and restoring limbs to the maimed cannot be explained by natural laws, and could not have been an imposition upon the ignorance of the observers. It was the power of the supernatural breaking through into the sphere of the natural. There is nothing contrary to reason in this, although it may be above the sphere of reason. Our Creator, having given freedom to our wills, cannot be less free than we are, and if we are able to modify the operation of natural laws, surely we must allow to Him a still greater power.

The miracles of our Lord were the exercise of the divine freedom to overrule and supersede mere natural law by the introduction of supernatural power.

A cordial vote of thanks to the Lecturer was put to the meeting and carried unanimously.

Professor LANGHORNE ORCHARD, M.A., B.Sc., wrote:—In this thoughtful and interesting paper the able author has established his contention that the "laws of nature," or uniform natural sequences, do not preclude the possibility of miracle. He might have carried the argument further, and shown that science affirms that miracles have actually taken place. We shall undoubtedly agree with his conclusion (page 45) that "a present system of natural law" can—"strictly speaking—never pledge the past or future."

The value of the paper is impaired by what is, in my judgment, a serious misnomer. The reasoning process described by the author as springing up from the three roots of association, inquiry, experience, is a very different thing from "the causal principle" or "the law of causation." This principle is innate to the mind. Being a primary intuition, it is the root of inquiry, and is

independent of experience and of the association supplied by experience. Its formula is, "Every effect flows from some cause, and like effects flow from like causes." Without the causal principle science cannot advance a step—it is far more than a "working hypothesis." Were it really opposed to belief in miracle, we should have to "consider of it"; but, in reality, the belief in miracle finds in the (true) causal principle invincible *support*, complete *justification*.

I cannot accept the definition of a "miracle" on page 50, which appears to include such things as radium, wireless telegraphy, etc.

Colonel MACKINLAY writes:—I heartily agree with the conclusions of Dr. von Gerdtell that miracles may be considered as facts, as soon as satisfactory proofs of their historic credibility have been furnished—and they have been furnished.

Though our author's definition of natural law, given on page 38, is excellent, he hardly seems to have adhered to it throughout his paper, as for instance, when he considers the astronomical ideas before the time of Copernicus (page 47). There is surely a great difference between the laws of nature and the theories or working hypothesis deduced from them, which are liable to constant change.

Hume* wrote of a miracle as "a violation of the laws of nature," and as "a transgression of a law of nature by a particular volition of the Deity." But these are very erroneous methods of expression.

Augustine† wrote, "How can that be contrary to nature, which takes place by the will of God, seeing that the will of the Great Creator is the true nature of everything created? So miracle is not contrary to nature, but only to what we know of nature." Dr. Sanday,‡ commenting on this remarkable passage, wrote, "Miracle is not really a breach of the order of nature; it is only an apparent breach of laws that we know, in obedience to other and higher laws that we do not know." The late Duke of Argyll§ wrote, "Miracles may be wrought by the selection and use of laws of which man knows and can know nothing, and which, if he did know them, he could not employ."

Far from miracles involving violations of law, it would appear from scripture that they are performed in accordance with it—

* *Philosophical Works*, vol. iv, pp. 93-105.

† *De civitate Dei*, xvi, 8.

‡ *The Life of Christ in Recent Research*, p. 216. (1907.)

§ *The Reign of Law*, p. 16.

though the law is in a higher plane from that which can be appreciated by mere human intellect. This is the deduction from the following passages: Matt. xiii, 58; Mark ix, 23; Acts xiv, 10; Matt. ix, 29; Mark ii, 5, x, 52; Luke xviii, 42.

In all these instances a law is evident, that certain miracles could only be performed when faith was present on the part of the recipient.

The Victoria Institute is to be congratulated on the widespread sources from which its papers come. Within less than a year and a half we have a paper from an American judge, afterwards another from a Swiss professor, and now we are indebted to a distinguished German author for the present valuable essay.

Mr. J. O. CORRIE wrote: Inductive reasoning is, as the lecturer points out, not demonstration. But the presumption against miracle, that arises from observed causality in nature (notably in the domain of astronomy), is reinforced by the thought that an exceptional interference by the Creator in His own order of things would be derogatory to His wisdom and dignity.

This is met by the observation that the state of things on earth, through all known history, cannot be regarded as being purely of His order. The villainies of mankind (to say nothing of the cruelties of nature) evince the action of some malign power.

The deprivation of the divine order by such a power accounts for, and justifies, miraculous interposition.

Mr. W. E. LESLIE wrote: After carefully perusing Dr. Ludwig von GerdteU's interesting paper on Natural Law and Miracle I cannot but feel that he errs in his treatment of the principle of causation.

Think for a moment of a few of the consequences of the denial of the necessity of causation. History disappears, and with it the historic Christ. The scriptures may have come into existence fortuitously—without writers. The New Testament miracles may have happened of themselves—in other words, did not happen, for a fortuitous *σημείον* is a contradiction in terms. Nay, the philosophical basis of theism itself is destroyed. A first cause may be dispensed with in a universe which, "considered with critical accuracy," may have come into existence by chance.

I cannot enter into a detailed examination of Dr. von GerdteU's arguments, but would like to make one or two remarks on his three

psychological "roots" of the idea of causality. Before doing so may I suggest that his evident firm conviction that the causal principle must have a "root" is somewhat inconsistent with his theories:—

- (a) The exact nature of the first root is not clear. The contention appears to be that our constant consciousness of the mechanical operation of the association of our ideas gives rise to our idea of causation. Is not this equivalent to the assertion that our idea of causality is derived from our perception of the mechanical working of that principle. This may be true, but how does it help the Doctor's argument?
- (b) Surely the statement of the second "root" should be reversed. Is not the idea of causation the root of the instinct of inquiry? A child sees a railway engine go "puff, puff." He feels there must be some adequate reason or cause for this. He yearns to know what that cause is—hence his inquiries. The idea of causality is necessarily presupposed by the query "Why?"
- (c) The third "root" implies that the repetition of a given sequence causes me to become gradually convinced that the two phenomena constituting the sequence are causally related. If this be so, why do I not believe day to be the cause of night, and 12 o'clock of 1 o'clock? As a matter of fact, we do not experience this growing conviction. A chemist performs a new experiment. Though he performs it but once he is perfectly convinced that, on the conditions being reproduced, he will always obtain the same result.

Dr. von Gerdell next cites the belief of Homer and others in the intervention of gods and demons in the course of nature, as an evidence that they did not believe in the inviolability of the causal principle. But this is beside the mark. The ancients believed, not that these prodigies were *uncaused*, but that they were supernaturally caused. Even Epicurus or Aristotle would have found it difficult to believe that a field of wheat had sprung into being uncaused, *i.e.*, without growth from seed sown, on the one hand, or the powerful intervention of some supernatural being, on the other.

At the end of his first part Dr. von Gerdell states that the causal principle "is the essential antecedent to all human thought

and action." If this be true must not every criticism of that principle rest upon the assumption of its truth ?

I conclude in the words of Mill :

"In every case of alleged miracle, a new antecedent is affirmed to exist ; a counteracting cause, namely, the volition of a supernatural being. To all, therefore, to whom beings with superhuman power over nature are a *vera causa*, a miracle is a case of the Law of Universal Causation, not a deviation from it."

Dr. VON GERDTELL, in a considered reply, writes : The Rev. John Tuckwell asserts that "Dr. von GerdteLL's definition of a miracle is inadequate, and of course he did not intend it to be taken as logically and scientifically sufficient," but Mr. Tuckwell gives no proof of his assertion. It has evidently escaped Mr. Tuckwell that I am discussing the actual possibility of miracles not with those who believe in God, but with atheists and agnostics. I can only argue with the latter on a basis that they recognize.

I think, however, that any declared unbeliever would accept my definition of a miracle, and would reject Mr. Tuckwell's ; for he brings the idea of "God" into the discussion, which the unbeliever would summarily reject as an extremely doubtful theological hypothesis. But Mr. Tuckwell's definition of a miracle as "an effect produced in the sphere of the natural by a force in that of the supernatural" would not be sufficient even for a believer in God. According to the Biblical view, which I have fully dealt with in connection with the miracles in a German treatise, *all* natural events are produced by the direct operation of God. From the Bible point of view, then, the characteristic distinction of the miracle as opposed to the ordinary, regular natural event would be annihilated by Mr. Tuckwell's definition. Mr. Tuckwell's point of view is the scholarly, not the Biblical point of view, when he says, "the miracles of our Lord were the exercise of the Divine freedom *to overrule and supersede mere natural law by introduction of the supernatural power.*" But this is beside the point. The whole question in what relation God stands to the cosmos, and especially to the miracles, has nothing to do with out present subject. I shall deal very fully with this important point in my pamphlet "The Early Christian Miracles at the Bar of Modern Views," which will be published this winter by Morgan and Scott in English.

Professor Orchard touches upon one of the deepest questions of

philosophy, which for lack of space and time we cannot solve here. Professor Orchard—an Englishman—treats the origin of the causal principle in the German manner; whereas I, a German, treat it in the English manner—*i.e.*, Professor Orchard represents rather Kant's view—and I, on the other hand, Hume's view. Nevertheless, I do not identify myself with Hume by any means. In my view the causal principle is not innate in man; the spirit of inquiry only is innate and given to man *before* any experience. The causal principle, on the other hand, is the scientific decision to which civilized man has gradually worked his way in the course of history as the result of that spirit of inquiry which he has in reality always retained. The spirit of inquiry has exactly the same relation to the causal principle as the innate moral instinct in man has to his later moral maxims. The former is to be found in man before any experience, but the latter is avowed as the principle of his moral life at a later stage, as the result of the moral instinct together with the experience of the individual.

Professor Orchard cannot seriously assert that the properties of radium or wireless telegraphy form an *absolute* exception to the whole of our scientific experience. Both are rather to be judged in accordance with the principles of chemistry and physics known to us. I have, of course, no intention of placing the Resurrection of the Lord Jesus on the same plane as wireless telegraphy. Radium *always* has the same properties, and wireless telegraphy *always* acts when the natural conditions are supplied. On the other hand, no man can supply the natural conditions which would cause every dead body to return to life.

Mr. Leslie forgets that I make a distinction in my statements, as I have already shown in reply to Professor Orchard, between the instinct of inquiry and the principle of causation. Mr. Leslie confuses the two, or wrongly identifies the one with the other. The instinct of inquiry is innate and precedes all experience. It is the assumption of the possibility of knowledge. The instinct of inquiry is a powerful mental impulse that impels us to seek for a cause for every event. The principle of causation, on the other hand, is a methodical principle, which the civilized man has voluntarily accepted as the result of the instinct of inquiry that he has in reality always retained. The principle of causation is the offspring of the instinct of inquiry *and* of experience. The instinct

of inquiry impels us to seek a cause for all we see. But the belief that everything that happens *has* a cause is the outcome of experience exalted into a method.

When we read the Biblical scriptures or contemplate the world, our instinct of inquiry impels us to ask, Who is the author of these scriptures? What is the cause of this world? The *fact*, however, that *every* document has an author and *every* work of art a maker, is a commonplace of experience. From this point of view Mr. Leslie's suggestion that I am demolishing the foundation of theism and of Christianity is refuted. I ask, then, in complete logical harmony with these convictions of mine, on the basis of my instinct of inquiry *and* of my experience, What are the roots of the principle of causation? My instinct of inquiry impels me to ask the question as to the roots of the principle of causation, and all my experience leads me to expect confidently on the ground of the psychic mechanism of the association of ideas that the principle of causation itself has its "roots."

To Mr. Leslie's assertion that, according to my views, the day must be considered to be the *cause* of the night, my answer is: The night certainly does follow the day regularly, but it *precedes the day with equal regularity*. By the term "cause" I understand only an event which *always* follows the cause, and *never* precedes it. When a chemist makes a new experiment he expects that in accordance with his general experience the experiment will succeed in all future repetitions, as all the previous experiments have done.

Finally, Mr. Leslie asserts that in my view the ancients (Homer, etc.) did not believe in the inviolability of the principle of causation, as they supposed their gods to intervene in the course of nature and history. As a matter of fact, they believed that the supposed miracles were *caused*, though *supernaturally* caused.

I assert, therefore, on page 43, only that Homer "knows nothing of an absolutely inviolable *natural* causation."

Aristotle and Epicurus no doubt did not go so far as to suppose that a field of corn grew up without any cause. But my statements above about them are nevertheless simply historical facts, which we have to accept.