

Mr. Tanner said he did not think the question of Darwinism could be discussed without the display of a considerable amount of feeling. He did not think Sir W. Buller's remarks at the opening were intended to hurt any one's feelings.

Mr. R. Pharazyn thought the paper a most interesting one. He thought it was quite possible to convince people that the Darwinian theory was sound. He agreed generally with the views expressed in the paper.

General Schaw took the author's views on the subject, which were opposed to his own, as merely a friendly attack. He did not think Sir W. Buller had brought forward sufficient evidence to prove the views he advanced. He himself was a believer in evolution, but only as far as theory was supported by facts. There was no evidence of steps leading up to the development referred to by Sir Walter Buller; we had not yet got hold of the whole facts of the case; there was still something required in addition to Darwin's views to make the matter plain—some great laws, as yet unknown, in obedience to which new types of life had appeared.

Sir W. Buller, in reply, said it was hardly necessary to disclaim any intention of reflecting offensively on the President or any member of the Society. The common-sense of those present would bear him out in that. The President had, in his inaugural address, thrown down the gauntlet, and openly invited discussion. He had seized the first opportunity of meeting that challenge, and he hoped that both the President and Mr. Maskell were prepared to fight for their views. For his own part, he would always be ready to combat to the utmost of his power doctrines which he regarded as unorthodox in the light of modern science. Had he sat silently by and allowed such views as those he had criticized to go forth in our Transactions unchallenged he would have felt self-condemned of moral cowardice. His duty to a society which had honoured him by election to the presidential chair four times over, his duty to science, and his duty to the memory of the great and good Darwin, who twenty years ago had been one of his (Sir Walter's) proposers for the Royal Society, all required that he should speak out with no uncertain sound. He added that the President, in the explanatory observations he had made that evening, following the lines of his former address, had opened up new debatable ground; but the hour was too late to admit of anything further being said on the subject.

Sir James Hector drew attention to a series of most interesting photographs of Barotonga, kindly exhibited by His Excellency the Governor, Lord Glasgow (who was present); also some moa-bones found by Mr. Donne in the Wairarapa district.

THIRD MEETING: 11th July, 1894.

Mr. W. M. Maskell in the chair.

New Members.—Rev. C. S. Ogg, Mr. H. P. Hanify, Mr. H. N. McLeod, and Dr. Adams.

Papers.—1. "The Humist Doctrine of Causation in its Relation to Modern Agnosticism," by W. W. Carlile, M.A. (Printed in *Mind*, vol. iv., No. 13.)

ABSTRACT.—The following are the subjects dealt with in this paper:—Part I.: (1.) The Criterion of Truth in Philoso-

phical Discussion. (2.) The Truth of Facts and the Constitution of Conceptions. (3.) The Type-instance of Reality. (4.) The Extension and Attenuation of Meaning. (5.) Transition from Literal to Metaphorical Meaning. (6.) Connotation of Everything.—Part II.: (7.) State of the Controversy. (8.) Relation between Knowledge and Reality. (9.) The Type of Causation. (10.) Constant Causes. (11.) Uniformity of Nature. (12.) Force and Causation. (13.) *Vires acquirit eundo*. (14.) Properties of Artificial Objects.

Sir James Hector thought it unfair to discuss such an elaborate paper without more consideration: in fact, he had not clearly caught which line of thought the author supported. The existence of a necessary sequence in cause and effect was required by modern science; and those who led in the metaphysical aspect of the subject must be careful of their premisses. He thought several of the physical illustrations given might prove fallacious on close examination. While he approved and admired the paper, he thought that such discussion should not be mixed up with truly practical science, which is the disentanglement of complicated sequence of cause and effect, and not the discussion of an ultimate cause.

The Hon. R. Pharazyn said that, in spite of the old Scotchwoman's opinion, there was much truth in the assertion of a great authority that "all physical questions ultimately resolved themselves into metaphysical ones," in the sense that in any phenomenon we had to determine how much was objective and how much belonged to the mind of the observer. There was a kind of metaphysics which ignored experience, and which Mr. G. H. Lewes called "metempiric," which was useless and led to no results. As Professor Max Müller had well said, "To know a thing by itself is to know it not as we know it, but as we do not know it, which is self-contradictory." The great principle of science was that all real knowledge was relative, and relative in two ways: first, in relation to one's own mind; and, secondly, in relation to things. As Professor Bain says in his "Logic," "We think of all things in pairs—large and small, light and dark, hot and cold, and so forth." Then, what was meant by a scientific explanation of any fact but referring it to some more general fact known to us by experience? This applied to our most familiar conclusions. If in the stillness of the night we hear a scratching, gnawing sound we immediately say rats or mice caused it, though, indeed, some people might say ghosts, but, knowing nothing of ghosts, that would not occur to him. Now, looked at in that way, and considering that experience was our only guide, he thought Mr. Carlile's paper, ingenious as it was, had entirely failed to upset Hume's and Mill's theory of causation. All we know of cause and effect is invariable sequence; and he agreed with a writer who said that for scientific use "law" was a better term than "cause." As to the contention that mind was the ultimate cause of things, he feared he should be trenching upon theology if he discussed that question; but he might say that there was a logical weakness in the argument from design. Put into the form of a regular syllogism, it was usually stated thus: "Whatever shows marks of design must have had a designer. The universe shows marks of design; therefore the universe must have had a designer." This, he thought, was syllogism in the first word of the first figure, and its major premiss was, "Whatever shows marks of design must have had a designer." Now, Mill had demonstrated that the major premiss of every syllogism is an inductive assertion. Now, in this case our induction is based upon human experience only—an experience extremely limited as compared with the universe at large. Paley's "watch argument" rested on the fact that we know that watches and such

things are made by intelligent beings; but what reason have we for supposing that mind or intelligence is the sole cause of the existence of things which seem to show marks of design? The conditions of existence necessitate certain relations which look like design, and yet, apart from other considerations, may be nothing of the sort.

Mr. Tregear said he considered that almost all metaphysical discussion arose from the fact that the medium through which our thoughts were conveyed was the imperfect one of words. Words were sometimes beautiful things in their long history and adaptation, but they were, after all, things which were our heritage from barbarian forefathers, and not perfect tools by any means. Metaphysics, so long as we use words, was like the effect of elaborate fencing-rules being followed by people armed with the weapons of the Stone Age. Mr. Carlile's notion, of course, was not tenable. He was not himself a cause, except as an intermediary cause, himself the sum of infinitely numerous effects. The cat quoted by Mr. Carlile as having removed some slippers was not to be regarded as anything like the real cause: behind the cat were the cat's father and mother and their fathers and mothers *ad infinitum*. Science could only look for intermediate causes and effects; the final cause might be conceivable, but was not within the domain of knowledge or field of science. Every intermediary cause had millions of effects, which in themselves became causes in turn, and made investigation as to finality impossible. He (Mr. Tregear) denied the doctrine of "design" as inferred and mentioned by Mr. Carlile. If one took up a board on the floor and found that it had once been varnished and beaded as a desk it would be reasonable to suppose that it had not always been a flooring-board. So, when the President had said that "a whale was always a whale," he (the speaker) did not agree with him. The whale had within his body two leg-bones, rudimentary and tiny now, with which he had once walked. So did the boa-constrictor. Man had his tail-bones tucked in and useless, the muscle in his cheek with which he once pricked forward his ears, the pituitary body in the brain through which he had once breathed water, the intestine (dangerous as well as useless now) which in the horse was a valuable organ. Man was just a "second-hand" animal; the evidence proved that he had once other uses, just as the polished board proved that it had not been always a floor-board. Man, as man, had been adapted, not designed.

Mr. Hawthorne referred to the rules of the Society to show that such a paper as Mr. Carlile's should not be read before the Society, as it touched on religious subjects. On hearing such a paper members were lost in a maze of unprofitable speculation. He thought it would be better if more attention was paid to natural history.

Mr. Harding disagreed with the last speaker. He thought that Mr. Carlile's paper dealt with a subject quite within the sphere of the Society, and with his general conclusions he was disposed to agree. Here, as in other debatable matters, one of the chief difficulties and causes of misunderstanding arose from the imperfection of language as an instrument of thought, and arguments and supposed facts to a great extent resolved themselves ultimately into disputes about definitions. The argument from "common-sense" was sufficient to dispose of the more unprofitable metaphysical subtleties, and was a safeguard on the one hand against individual hallucination, and on the other against the wilder flights of the unrestricted scientific imagination. The ideas of conception and object of conception and the thing conceived were so clearly separable that it was only by considerable mental effort that they could be confused. It was so also with the idea of a chain of cause and effects—of consequence as distinguished from mere sequence. A first cause was doubtless beyond the sphere of physical science, but had been of necessity assumed by philosophers of all ages; and rightly so, for, reasoning by analogy, as had already been pointed-out by our President, we found that every develop-

ment of force in the human sphere, from the movement of an eyelid to the course of an express train or an ocean-steamer, could be traced back to what was known as will, and could be followed no further.

Mr. Tanner said it seemed to him that when dealing with metaphysics it was difficult to come to a common understanding. The paper was most interesting, but it appeared almost impossible to arrive at any satisfactory conclusion on such a subject.

Mr. A. R. Atkinson remarked that the difficulty in dealing with a subject like this was largely one of language. Words in general were not constructed with precision for the purpose of science, but roughly hewn for popular use; and, after their being so manufactured, the philosopher had to make the best use of them he could. The chief objection which a philosopher would take to Mr. Carlile's paper would probably be that there was too much common-sense about it. In ordinary language our view of the "cause" of a thing was determined by the particular aspect of it that had most interest for us at the time; but was it possible, philosophically, to separate the cause of anything from the whole antecedent history of the universe? Similarly, the doctrine of the conservation of energy showed that, scientifically speaking, no cause can ever cease to operate. This seemed to be the explanation of the argument which the author based on Newton's first law of motion. In conclusion, he protested against what he took to be the suggestion of a previous speaker—namely, that a subject of this kind lay beyond the scope of the Society.

Mr. Barnes also agreed with other members as to the great difficulties attending the discussion or conception of a question of this nature, and gave as an illustration a chain of circumstances showing how an occurrence or event might be traced back through the chain to a cause having apparently not the slightest or remotest connection with it. It seemed to him that all existing circumstances were the progeny of pre-existing circumstances, which was perhaps only another way of saying that "the cause of anything is the previous history of the world."

Mr. Carlile, in reply, said if a subject such as this was barred as unsuitable for the Society they would bar everything that had been written on the subject of philosophy as distinguished from special science, from Plato to Hegel. If agnosticism was proved untenable, the crude teleology of Paley was not the only alternative explanation of the universe. There were other explanations which did not leave reason out of account, such as that attempted to be given by Hegel. It was quite legitimate, in any case, to show the fallacy of one system, without having another system ready-made to substitute for it.

2. "A Chapter in the History of the Warfare against Insect-pests," by W. M. Maskell, F.R.M.S. (*Transactions*, p. 282.)

In the course of his paper the author referred to the fact that Dr. C. V. Riley had been obliged, through failing health, to resign his appointment as Director of the United States Agricultural Department (Entomological Branch), and pointed out that the farmers and cultivators of every country of the globe were indebted to him for his services during the past thirty years.

On the motion of Mr. C. V. Hudson, seconded by Sir James Hector, the following resolution was passed: "That the members of this Society sympathize cordially with Dr. Riley in his enforced retirement, on account of ill-health, from the position of State Entomologist to the United States, and beg to assure him of their high appreciation of the services which he has rendered during the last thirty years to cultivators of every country."