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## ORDINARY MEETING.*

CAPTAIN G. P. HEATH, R.N., IN THE CHAIR.

The Minutes of the last Meeting were read and confirmed, and the following paper was read by Dr. Walter Kidd in the absence of the Author :—

*MARKS OF MIND IN NATURE.* By Rev. Professor J. DUNS, D.D., F.R.S.E. (Hon. Cor. Member of the Victoria Institute).

WHEN, at the request of your Honorary Secretary, I agreed to write a paper under the title "Marks of Mind in Nature," the history of the scientific and literary contributions in kindred lines of thought was not forgotten. I remembered the days of old and the efforts of devout and thoughtful men to utilise the science of their day, in giving prominence to the evidences of "Creative Mind in Nature." We are indebted to the institution of the *Boyle Lectureship*, towards the close of the seventeenth century, for this movement. Bishop Burnet spoke of Boyle as "a man who never mentioned the name of God without a pause and a visible stop in his discourse." Among the early lecturers were Rev. John Ray and Rev. W. Derham, who were both Fellows of the Royal Society. Ray's contributions to science were many and of great value. His book on *The Wisdom of God manifested in the Works of Creation*, was published in 1691. Derham was Rector of Upminster, Essex. His *Physico-Theology, or a Demonstration of the Being and Attributes of God from His Works of Creation*, was the substance of

* March 20th, 1899.

sixteen sermons delivered as Boyle Lectures, and published in 1711 and 1712. These books were early, if not the earliest, British contributions to the literature of natural theology. They were the forerunners of, and the introduction to, the *Bridgwater Treatises* (1825) *on the power, wisdom, and goodness of God as manifested in Creation.* Among the authors of the Treatises were Dr. Chalmers, Dr. Buckland, Dr. Whewell, and Sir Charles Bell. Outside of the Bridgwater group the names of Paley and Bishop Butler may be mentioned. To them and others we are indebted for works teeming with facts illustrative of creative self-manifestation. But notwithstanding the amount and value of these contributions, much remains to be done in the departments suggested by the names now mentioned, and there is abundant room for many workers. Points of view have changed. The natural sciences have brought to light facts and phenomena unthought of twenty years ago. Materials for review and criticism have greatly increased, and the question is asked, has the recognition of marks of mind in nature kept pace with the discoveries of science? Looking back to the times of Boyle, and Ray, and Derham, the opposition to the doctrine of creation found its chief strength and expression among those who were equally opposed to the Christian doctrine of redemption. Is it so still? A straightforward answer to this question is delayed at present. But that the attitude of an influential group of men of science to the doctrines of the existence of God and of a future life* has recently become more hostile than at any other period, few, if any, thoughtful men will deny. In Britain, no doubt, the group is comparatively small, but what it wants in numbers is counterbalanced by ability in the various branches of natural philosophy and natural science. The mere fact of the existence of such a company has a hurtful influence. It shakes the ground on which those stand whose religious knowledge is much greater than their religious convictions. Assuming that the conditions of thought now referred to exist, how are they to be met? Not, certainly, by that mere and bare dogmatical antimaterialism which shirks argument and denounces claims made in behalf of freedom of research and of speech. Not thus, but by a full and dispassionate

* This modification (suggested by the President) was accepted by Dr. Duns in letter dated March 23rd, 1899.

statement of the opposite truth, by heartily according to others the liberty of thought and expression which we claim for ourselves, by affirming without reserve that we will welcome truth, come how it may and whence it may, and that the only limits of freedom we will recognise are those which the truth itself determines. This attitude to free inquiry is sacred in every department of science; in biology, especially, the least indication of forgetting it is to be resisted, because in it we have to deal with many legitimate, though speculative, questions, and to handle many facts whose significance may vary—often does vary—as the relations in which they stand, and as the mental qualities of those who appeal to them. In these, indeed, the student finds what gives to enquiry its strongest attractions. Every fact has its own meaning—a meaning which time cannot destroy and which mental bias cannot vitiate. To reveal this, to set it in its own place as beyond challenge, as an established truth, in a word as science, becomes a substantial contribution to the sum of our abiding knowledge. Slowly but surely this has been going on whenever and wherever the true students of nature have worked with right motive and in legitimate lines—avoiding generalisations whose data are partly speculative and partly real, and rejecting the reasoning which claims for notions touching changeful phenomena the value of established principles, or, even, the weight and dignity of natural law.

"What dazzles for the moment spends its spirit."

It is alleged that *all* the tendencies of recent Biology are toward materialism, indeed, that the well-marked trend of all highest thought is in that direction; that philosophy is slowly but surely undermining religion; that the pursuit of truth for truth's sake is disappearing from among men; and that the natural sciences are valued by the prevailing industrialism of the age, only so far as they can be helpful to money-making. These, however, are less than half truths, but even as such they claim attention, were it for no other motive than to encourage that great constituency whose vigorous and enlightened common sense keeps them clear of the wild assertions of "the new biology," the verbal mists of "the higher criticism," and of "godless materialism."

The object I have in view throughout this paper is to give prominence to biological facts and phenomena, which seem to me to warrant not only the postulation, but the

absolute proof, of mind-marks in nature. Of purpose the teleological method is avoided, because both in Darwinism and in much recent physicism it is held that there are qualities in matter itself equal to do all that is implied in the well known *Doctrine of Final Causes.*

The scientific study of nature may be entered on and pursued from several different points of view and under the influence of different motives. Some, ignoring the question of origin, or having the conviction that it lies outside of the scope of science, content themselves with trying to add to man's knowledge of nature by simply recording the phenomena and the facts which fall under their observation. They are satisfied with, and find their reward in, the increase of scientific information. Seldom, however, are their labours more worthy of the name of science, than the labours associated with making a bare list of the names of the kings of a country are worthy to be called its history. Others, tracing phenomena to the action of a self-originated and self-guided something which they name natural law, hold it to be their duty to proclaim, that science can make no true progress till its students cease to burden themselves with the belief that thought underlies things, and that there is or ever can be a "knowable supernatural." They find in matter material energy—an inworking quality which, independently of non-material guidance, has realized all the, so-called, living forms which ever were, and which now are, on the earth or in the sea. But there is a third group of natural science students which consists of men who are not afraid to deal with the question of origin. It has been settled for them, and they are not only satisfied with this explanation, but throughout the studies of their life they find innumerable facts utterly unintelligible apart from it. What a noble band have worked from this point of view of origin,—Linnæus, Cuvier, Owen, and Agassiz; Kepler, Newton, Brewster, Clerk Maxwell, and Lord Kelvin! Their followers, even at a great distance, work under the impression that the facts and phenomena of natural and physical sciences are but as the steps of a ladder planted on earth but reaching into the presence of Him Who has made all, Who is in all, and over all, "for without Him was not anything made that was made." Thus in the wide fields of Nature—in the Animal and the Plant Kingdoms—every fact touching form, and structure, and habit, and environments is literally laden with meaning. We see not things only,

but we meet everywhere illustrations of thought and forethought; in a word we meet with "Mind manifested in Nature."

To neutralize the influence of this third group of students on public thought—on the common sense constituency to which ultimately all science has to appeal—a change of front has been taken by the second group referred to. With them the question is not "are marks of MIND manifested in NATURE?" It is the revival of a question put long, long ago—"Is not LIFE a quality of MATTER?" The answer on their part is affirmative, and earnest efforts are put forth to make it good. Now, while it would be vain to imagine that aught save very scant justice can be done to the subject suggested in the title of this paper and within its limits, there are topics touching which some critical remarks may not be out of place. It will prevent repetition if, from our chief point of view, we associate our remarks with the terms Nature, Organisation, Classification and Vitalism.

1. The widest meaning attached to the word Nature is—the whole external world without regard to origin or continuance. In theology it includes the whole external world as the outcome of creative acts, and as under unceasing supernatural upholding and guidance. Thoughtful men, however, cannot but be aware of the influence at present of symptoms of a return to the views of nature held by the ancient physicists—views which imply belief in the eternity of matter and the chance realization of organisms, plant and animal. The relevancy of this reference to the tendencies of some present science studies may be questioned, but, as we shall see, not its logic, when we weigh the argument touching vitalism. But what strikes one here is the effect on men of the phenomena which suggest that mind is manifested in nature. The character and power of this acknowledgment depends on, or is anticipated by, the intellectual condition and, to some extent, the physical environments of those who make it. Take, for example, the history of religious thought apart altogether from Revelation. There are proofs of order in nature, but order implies intelligence, and intelligence personality. A wide and intensely interesting subject opens before us here. Early in the history of the world the discovery of aspects in nature which were suggestive of mind, and of personality, led to those immense systems of religion which not only had their day but which were characterised by features whose traces

are felt even in our own time. The earliest and purest of them was Monotheism—God over nature and nature from God. Radically different from this was Pantheism—God in nature and all nature God. And Polytheism—single powers of nature as personified in individual men. These systems are not dead but they are passing away. What is to occupy their ground? Is science saying "there is no God"? or is it willing to admit that its findings warrant the upward look and the desire to join with the noblest of its students in the words—"Lord, Thou art God, which hast made heaven, and earth, and sea and all that in them is"? Till now the best and the greatest scientific workers have rejoiced in this revelation. They see in all their studies evidences of mind in nature which they cannot ignore, and the words quoted strengthen the conviction that they are there by creative gift and as the expression of creative thought: "Ask now the beasts and they will teach thee; and the fowls of the air and they shall tell thee; and the fishes of the sea shall declare unto thee."

2. Organisation. Take a lump of formless, unmarked, plastic clay firmly into the hand and then examine it. What are those fine, curiously arranged lines on its surface? They are marks of the striæ on the human hand and they thus at once suggest personality—brain, heart, and thought power. Now place *amœba* under a good lens. It looks, at first sight, as if it were only a lifeless gelatinous speck, but it begins to move, by pushing out part of its body. Prepare it for the microscope, and it will be found to be an aggregation of cells, each one of which suggests well marked parts—cell membrane, cell protoplasm, nuclear membrane, nuclear protoplasm, and nuclear coils (chromatin). If the striæ marks on the clay led us to believe that it had been in a human hand, what cause have we to doubt the proofs of creative touch on *amœba*—a touch which determined the permanence of its specific marks throughout the ages? The workman's touch could give the striæ marks but could not give life. God alone could do that, and the simplest of living forms is the proof that He did it. From this point of view, we get a glimpse of the beginning of organisation.

Matter may either be looked at as in the mass, or as specialised. The latter is living, the former is dead; the latter has structural parts or organs; the former is destitute of these; the latter grows by the assimilation of food in digestive organs; the former is enlarged by mere aggregations of

particles. It may please eager, "new biologists" to point with a smile to mineral composition and ask, "Have you not here an agent of increase if not identical at least very like what you call living growth"? Intelligent common sense may be safely left to ask in return, "How do you account for the existence of the agent of increase as the explanation of growth in organised bodies, and of bulk in unorganised bodies?" It is easy to say, "We trace both to the natural properties of things." "The organic and the inorganic are the outcome of the inherent properties—the laws of their being, in short. Organisation then implies the action of law. But does not law, both in it and in its continuance imply personality? Mechanism the fruit of unguided natural properties is absurd. This sort of science sheds no light on "being" whether we call it living or dead, organic or inorganic. There is another question which the mechanical "natural properties of things—theorists" cannot away with, namely, *whence* the properties which give organisms? Such theorising is not science, because science is truth, it is the truth of things. It refuses no student the liberty of research, but it dreads guess-work. Thus it is literally *mind-full.* "Science," says Dr. L. A. Dorner, "may go astray and so do harm. But if it could not do this neither could it be of any real service; it would not be free, and would consequently be unable to be truly productive, while it would fail to make a deep impression, or awaken any confidence since it would merely work, as it were, to order." True, that is truth seeking, workers rejoice in liberty of research, but keep clear of speculative licence. They have no sympathy with workers who find organisation to be the mere outcome of qualities characteristic of all matter—men in many cases we might say:—

"Thirsting for Truth, but wretchedly in Error."

3. Classification. When in Dresden at the opening of the Franco-German War, and chancing to pass across the magnificent bridge which unites the two parts of the city—Altstadt and Neustadt—I noticed a large building, evidently run up in haste, near the bank of the Elbe. Thither waggons heavily laden with war materials of different sorts—swords, bayonets, rifles, horse-trappings, and the like—found their way. These as they arrived were passed into the building without selection and regard for order. But from another part of the same structure, and at the other side, waggons

were passing away as heavily laden. Now, however, everything was suggestive of order. The articles had been in the hands of men employed on purpose to select, classify, and mark off, for despatch to the Rhine. Evidences of intelligence were clear in bringing like to like—swords were by themselves, rifles by themselves, and so with other forms. All were thus more readily available than they would have been had no distribution according to kind taken place. Now science has rendered a service analogous to this in connection with the phenomena and facts of Nature. Astronomy has done it for the heavens, by arranging the star worlds in groups for the purpose of study. Geology has done it for the earth's crust by arranging groups of strata in the order and sequence of superposition, giving us the geological record. Zoology does it for the animal kingdom and Botany does it for the vegetable kingdom. Classification is thus virtually the expression of the order which everywhere exists in Nature. What to the uneducated eye seems only an agglomeration of diversities becomes in the hands of the trained observer (say a zoologist) a series of groups, each group consisting of animals whose form and structure warrant their association, notwithstanding the fact that there are features in each group which are common to all. Huxley shrewdly characterised the method of study indicated here as the application of "trained common sense." And in the *Introduction to the Classification of Animals* (1869), he says: "Every animal has something in common with all its fellows; much with many of them; more with a few; and, usually, so much with several, that it differs little from them." There are then "gradations of likeness in animal structures." Systemists do not determine them. They only interpret them, and their interpretation is the testimony of experts to the presence of order, throughout all the differences manifest in animal groups. Were we to say "every species" instead of "every animal," this prevalence of order would even be more evident and suggestive. The very existence of species implies a history of orderly life steps, every one of which was as sharply defined, though immature, as their aggregate in the mature form. Without claiming for these assertions the value of logical inference, they at least entitle us to postulate (1) that every species holds something which is common to it with every other species. There is a common substance in which and through which what has ever been

known as life acts. This brings together the simplest amœboid—a mere structureless, gelatinous, but vitalized speck—and the highest form of animal life, man. The so-called life in both, works in both, using what seems to be identical substance for the continuance of species, and the differentiation of individuals under species. (2) Every species holds what distinguishes it from every other species. To affirm that the highest animal holds something in which the lowest can have no part is self-evident, but it is not equally so to say that the lowest has what it cannot share with the highest. The element which, in the humblest *Foramenifer*, determines pattern, separates it not only from forms high in the zoological scale, but also from the comparatively low forms which are next to it in the scale. (3) One side of specific rank includes what an animal holds of matter disposed in it as in no other, a second what it holds of life under the same limitation, and a third what of psychical element thus regarded also. If the biologist confine himself to facts and to the thought underlying them, of which they are the expression, he will likely see the significance of these positions. In the noble words of a great systemist—"Classification is the rendering of creative thoughts into human language."

4. Vitalism. When Tyndall energetically expressed his indignation against the use of terms which seemed to cast doubts into the very heart of his most favourite theories, he might, perhaps, have found rest in the thoughts of Faust :—

* * "I seek assistance.
And thus the bitter task forego
Of saying the things I do not know,—
That I may detect the inmost force
Which binds the world, and guides its course ;
Its germs, productive powers, explore,
And rummage in empty words no more."

As to Vitalism, it is beyond doubt that there has been, and there continues to be, much "rummaging in empty words." This has chiefly been with the view of hiding proofs of mind in nature. The cries have been—"let us cast the term vital force from our vocabulary; let us reduce, if we can, the visible phenomena of life to mechanical attractions and repulsions"; are not affinity, unity, extension, duration, and consciousness properties of molecules; are not the atoms waiting for the accidental change which, in one or another of them, gives life and its constant accompani-

ment consciousness; and do not the properties of the particles of matter abide till the mature forms mysteriously undergo the change we call death? The school of theorists referred to here seems to have found an adjective which fits into their aspirations, and is believed to make sure that life shall be held to be only a quality of matter. Thus we have "the physical theory of life," "the physical basis of life," "the physical doctrine of life," "the physical origin of life," "the physical view of life," "the physical nature of life," &c. Is not this "multiplying words without knowledge"? Some acquaintance with the literature in which these phrases occur creates the impression that the term Vitalism has been found a sort of compromise in recent biological discussions, as if it was a recognition of life apart altogether from questions of origin or originator. Looking at this from the historical point of view, one is struck with the changes of aim on the part of recent enquirers. It is not so much touching the nature and increase of elementary substances, their laws of combination, their characteristic affinities, their divisibility and the like, as it is to shed light on, and account for, the alleged chance behaviour of molecules as the explanation of the origin of life. Biology is made to stand aside and stereo-chemistry takes its place.

Since shortly after the beginning of this century, when Dalton's remarkable discovery astonished the world, the "Atomic theory" has had much attention devoted to it by such physicists as Faraday, Clerk Maxwell, Pasteur, and Lord Kelvin. As the decades glided past from Dalton to Kelvin, interest in the theory went on increasing. It came to be regarded as now a kind of finger-post bearing the inscription "this way to the source of life—the spot where the non-living passes into the living." But before the *terminus ad quem* is reached, lively conversation by the way leads to a good deal of discussion touching that of which they are in search. "What are to be dealt with," some say, "are Atoms," others "Molecules," others "Germs," and yet others "the material ultimate living element,"—the mother of the multitudinous life forms which have not yet been found; they have only been defined! Each seeker seems to have discovered what he was in search of; but that no two of them find the same life-starting point comes out in bold relief when notes are compared, and an effort is made to unite the seekers after truth by hastening to table a term which might satisfy all. The term referred to is "*enantio-*

*morph*"! It is to be feared that instead of its being a rallying point, there is that in it "which scattereth." Has not one authority boldly said, "the chance synthesis of the simplest active compound from inorganic materials is absolutely inconceivable"? And has not another as boldly replied, "On the contrary if the theory expounded be correct, the inorganic origin of optically active compounds is not only conceivable, but it has a degree of probability which, however small, might be calculated when we know what is the minimum number of molecules in a physically just sensible solution and what is the majority of enantiomorphs of one kind which will give you a just measurable amount of rotatory polarisation"? And has not a third said,—"Now assuming, what there is every reason otherwise to think quite probable, that life started from some few centres, the chances are not that it was equally divided between right and left-handed forms, but that one or other of these forms preponderated"? Then, a voice comes from the Chair of the British Association—"Several years ago I pondered on the constitution of matter. I endeavoured to prove the tormenting mystery of the Atom. What *is* the atom? Is a simple atom in space solid, liquid, or gaseous? Each of these states involves ideas which can only pertain to vast collections of atoms. . . . An isolated atom is an unknown entity difficult to conceive. The properties of matter are due to molecules in a state of motion, therefore matter as we know involves essentially a mode of motion; and the atom itself—intangible, invisible, inconceivable—is its material basis and may indeed be styled the only true matter." Now all such utterances show that those who make them hanker after the old notion of the eternity of matter. They talk of the mystery of being and not being, and of life as "one of the natural properties of things," and yet refuse to listen to the request, "whence these properties of things" which to them are scientifically so real and true? How widely different the attitude of Sir John Herschel when considering the substances to which we refer! "These discoveries," he said at a meeting of the Royal Society, "effectually destroy the idea of an external self-existent matter, by giving to each of its atoms at once the essential characteristics of *a manufactured article and a subordinate agent.* . . . When we see a great number of things precisely alike, we do not believe the similarity to have originated except from a common principle independent of them."

The foregoing quotations are fitted to suggest that the widely different inferences drawn from the same, or corresponding, data are likely to be accounted for by the differences of the point of view, if not the method, of their authors. That their starting points could not be the same seems clear. Was the object of one class of writers to find in the facts and phenomena of nature support for preconceived opinions, and the object of another class to understand the phenomena irrespective altogether of current notions regarding them? Then there are schools of scientific thought—often very ill-informed groups whose chief delight is to charge all who differ from them, as being narrow-minded, the victims of prejudice, and all manner of bias; altogether forgetful that it is not only possible, in this description of others, they may be speaking of themselves; but it also shows that bigotry in the departments of science may be more bitter even than what it is believed to be in "religious coteries." Does not something very like ignorance lie at the root of these expressions of feeling? The mere specialist sees no value in any aspect of thought which cannot find a place in, or connected with, his own hobby. Great attainments do not necessarily imply wide intelligence, and they may carry with them strong and often narrow-minded prejudices. Enlightenment touching the objects disliked may be much needed. Enlargement of acquaintance with intellectual environments often works wonders, not in science only, not in philosophy only, and not in religion only, but in the relations of each of these to the other two. The beneficial reflex influence of interactions among these cannot be questioned. To bring this about many will think that there must be a common starting point. To insist on this would be to miss the end in view. The balls thrown earnestly by different hands would meet, and then the rebound! Looking at this from our present point of view, let the common starting point be "God is," and however small this may seem it is in a line at present, as we shall see, of great significance. Indeed without this, argument would be impossible or, at least, hopelessly useless. With this, mind-marks in nature would have the highest meaning.

There are many able and intelligent men who do not think well of science mainly because they are ignorant of the phenomena with which it deals, and they treat its findings very much in the same way as men ignorant of the Bible treat its contents, whenever they meet its demands to be

heard in their special department. If we may judge of their feelings by the attitude they assume to those who study both parts of the One Revelation, our estimate of them will not be very high, but neither will our dread of them be overwhelming. We wish, however, that they would read the *BOOK* before they condemn its contents, and make some effort to understand the reasons, which those who do read it give for their belief, both Biblical and scientific. These are easily stated: adaptations to ends are innumerable, and it is concluded that just as analogous fitness and purpose in man's works are ever credited to the workman's mind, so, when met with in nature, they warrant the inference of presiding mind. Any such adaptations in nature point to a person as their author, as surely as any piece of human mechanical art does, whether we look at the material of which it consists, or to the relations of its several parts, or to the end in view in making it. No doubt it is alleged by some "we acknowledge that in all this there is what we call personal skill,"—but is not this skill as much a physical quality as the material parts are! The assumption is absurd. Physical features, physical qualities, physical energies, can be scientifically dealt with by physical tests; but does not the power to test them lie outside of them? The individual man finds by introspection that his work of art is the outcome of applied mind, and when he sees other men producing corresponding works does not his knowledge of himself warrant the inference that they also have mind like his own?

Some may say this is the old Paley point of view, but things are changed. A higher force, or higher forces, now reign. This reference is made to the old starting point—"Design implies a Designer"—with the view of indicating the source whence the main objection to it came, and of stating the fact that what was held to be its weakness is really its chief strength. Say, we put it thus:—God is, matter is, matter is from God. This length even Kant went, having, he said, a conviction "of the reality of the phenomenal." But a consistent logic goes farther—in the collections of matter there are proofs of wisdom, therefore God is wise. But even when Kant refuses to go thus far he tries to undervalue the importance of his own *terminus ad quem*, by concluding, that though the evidence of order and power in nature and organisms warrants the inference of creative personality, such an argument may produce conviction, yet it is not

scientific, because it transfers the conception of cause by man from himself to things. It leads to the acknowledgment of an extra-world Author, but not of an Almighty and All-Wise Creator; or, as it might be put—a most mighty and omniscient Being with the nature of man. Now it is at this point of our demonstration of "Mind in Nature" that students of natural theology are charged with anthropomorphism—the worship of an almighty man! The monstrous assertion as thus expressed is unworthy of criticism; our anthropomorphism is suggestive of something better and higher as we remember the words, "And God said, Let us make man in our image, after our likeness; so God created man in his own image, in the image of God created he man; male and female created he them. And God blessed them." It is, as thus created, we can not only understand His works but hear His words. The children, *in virtue of their origin*, can know what their Father says, and can appreciate what their Father has been doing from the first act of creative self-manifestation. And as the joints of time fit in historical sequence into one another, are we not led into the presence of another glorious Personality? "Doth not Wisdom cry: 'Jehovah possessed me in the beginning of His way,' before His works of old." "I was set up from everlasting, from the beginning, or ever the earth was; then I was by Him; rejoicing in the habitable parts of His earth." "My Father worketh hitherto and I work." It is here we meet with *Christus Creator et Christus Redemptor*. To this one Personality we trace the proofs in all Nature of thought and forethought—in a word of PRESIDING MIND.

The CHAIRMAN.—We are very much obliged to Dr. Kidd for reading this interesting paper by Professor Duns, and we shall be glad to hear any remarks that any gentlemen present may wish to make on the paper.

The Rev. BERESFORD POTTER.—I notice it is a very common thing, of late years, to throw discredit on the old argument which is referred to in this paper, viz., the Paley argument of design; and I have seen it stated by a good many writers that owing to the Darwinian theory of evolution the Paley argument of design

falls to the ground. I must say I have never been able to see that myself. I should like some gentleman, who has thought more on the subject than I have, to make it clear. It seems to me that the argument of design is quite as strong under the theory of evolution as without it. But I know it is a very common thing, and I was only reading a book yesterday by Fiske in which he throws discredit on the Paley argument.

It seems to me that one sees in evolution, if evolution be true, quite as much the marks of intelligence in the universe, as you do in the old theory of creation.

Mr. E. SCHINZEL.—In the first place I wish to convey my thanks to the lecturer for the interesting paper he has been reading out to us, and I am induced to make some remarks now, on account of what has just been said. I am sure it is only Sir Charles Lyell who has suggested that there might be plan and design in the evolution theory, but all other evolutionists have protested against it, and have distinctly declared that there is no design. I will read some observations of Darwin. In his autobiography he says, "The old argument from design in nature fails now that the law of natural selection has been discovered. There seems to be no more design in the variability of organic beings than in the course which the wind blows."

Natural selection, I consider, is a naked hypothesis, unsupported by facts. Hypotheses have been made before, and have often led to glorious results. Sir Isaac Newton's solar system is a grand and glorious hypothesis, as explaining satisfactorily all the apparent movements of the heavenly bodies. A hypothesis made at random, and thrown out for anyone either to believe in it or not, is a worthless plaything for the fancy of sanguine visionaries. To deserve general adoption it is necessary that the hypothesis should supply us with a key to explain all phenomena; each and every fact must have a full recognition in the theory which is submitted to our approval. But has Darwin ever attempted to explain the evolution of a single organism by the process of natural selection? Huxley at least hit upon the supposed evolution of the horse. There are some links, but these links do not touch, and they only prove an evolution in the mind of the Creator.

Professor Orchard and Mr. Martin Rouse took part in the discussion, and the meeting terminated with a vote of thanks to the author and Dr. Kidd for reading the paper.