

the day in quest of the time. Mr. the Market Act, as set apart as offered for sale in a before a pro-ceeding that such frequently he said Mr. ORME at before him of never raised be-fore, adjourning at he might con-ter. Mr. Gilmore was having stabbed a reet mill, on the house surgeon, and able to leave the bench. O'Neill, tion. The O'Neills, reads, Mr. ORME, oution."

BELFAST NATURAL HISTORY AND PHILOSOPHICAL SOCIETY.

OPENING ADDRESS BY THE PRESIDENT. WEDNESDAY EVENING, the opening public meeting for the current session of this society was held in the Museum, when Mr. Joseph J. Murphy, President of the Society, gave an introductory address on "Some Present Aspects of Science."

The President then read the opening address, as follows:—As you have done me the unexpected honour of electing me as your president for this session, it becomes my duty to open the session with some appropriate remarks, and instead of addressing myself to any special subject, I prefer to make this the occasion of some general observations on the latest results of science, and on the present aspect of the most interesting of its unsolved problems. The great idea of all modern science is the unity of plan and of law that runs through all creation, and makes itself manifest to the scientific explorer under the most diverse external forms.

Laws which were thought to be quite unconnected are found to be really the same law, acting under different circumstances; and phenomena which were supposed to have different causes are found to be really effects of the same cause. The first discovery of this kind, and probably the most important of all, was that made by Newton, in proving that the force which binds the planets in their orbits is no other than that which makes a stone fall to the earth. By this magnificent generalisation he showed that the laws of nature, at least in so far as respects motion and gravitation, are the same throughout all space.

And since the beginning of the present century it has been proved that heat is really motion—the motion of atoms; so that the laws of motion, which were first proved true of masses, are equally true of atoms as of masses. By this generalisation, second in importance only to Newton's, it is shown that those fundamental laws of nature which are called the laws of motion and force are equally true on all scales, from a star to an atom. The same tendency to identify principles as essentially the same which were supposed to be distinct is to be most emphatically asserted of geology. The change which has transformed geology from a mere mass of unproved conjectures into a true science essentially consists in referring geological phenomena to the same causes as those which we now see in operation.

No doubt, any number of intermediate hypotheses might be framed, imagining separate ancestors for every genus, every order, every class, and so on. But in point of fact no one does attempt these compromises. It appears to be generally agreed that, if we admit the theory of "modification by descent" at all, there is nothing improbable in the extreme form of the theory—namely, that all living beings, vegetable and animal, are descended, possibly from one, certainly from a small number, of very simply-organised original germs. This theory, certainly, does not at first sight look plausible. To any intelligent but un-structed person it will appear far more likely that every species has been created as we see it. But in the sciences of life, as in geology, every increase of knowledge tends to prove that things were not originally created as we see them, but far otherwise. A hundred years ago there was nothing to hinder any intelligent man from believing that our whole terrestrial world, with its mountains, rivers, and seas, was created exactly as we see it. We now know this is not the case, and we have also learned that whole classes of animals have ceased to live, while their places have been taken by others. And, what is very significant, the classes which have taken the places of the extinct ones are mostly of higher organisation, so that geological history, on the whole, tells of an advance in the character of the forms of life on the earth. Thus, to mention the most conspicuous instance: the cold-blooded reptiles have to a great extent perished from both sea and land, while their places have been taken by warm-blooded animals. I admit, however, that the geological record is too imperfect ever to throw much light on the question of the origin of species. I only say that what evidence geology furnishes is in favour of the theory of the origin of species by descent with modification. The strongest arguments in favour of this theory, however, are drawn from the facts of comparative anatomy and of development. To speak first of the facts of development; we know that every living being in existence, whether vegetable or animal, has been developed out of a germ which had no resemblance whatever to what it afterwards became, which was without organisation or structure, or any vital property except the capacity of acquiring vital properties. When this marvellous transformation—so far transcending anything that magnetism, chemistry, or crystallisation can account for—takes place in the biography of every living individual, there is surely nothing contrary to the nature of things in the theory that the same is true of the history of every species. In other words, we know that every individual has been developed out of a simple, unorganised germ; and we may, therefore, believe that every species has been descended from a simple, unorganised, or lowly organised ancestor. It is to be observed that the germs of all beings are much alike; those of totally unlike species present no character whatever, either chemical or microscopic, by which they can be distinguished. Moreover, the higher animals, in the course of their development, assume temporary forms which are similar to the permanent forms of species of a lower grade. This, I believe, is universal. The best instances are those in which the animal undergoes metamorphosis. Thus the butterfly is at first a caterpillar, which resembles the centipede—a lower form of the same great class; and the frog is at first a tadpole, which is essentially a fish—that is to say, an animal constructed on the same general plan as the frog, but of lower organisation. But what the facts of development only suggest as a presumption is raised into a strong probability by those of comparative anatomy. In the great vertebrate class, for instance, a gradation can be traced, with hardly any interruption, from the lowest worm-like fishes to the highest air-breathing reptiles; and the gradation of the different orders in that series presents a remarkable general parallel to the series of forms successively assumed by one of its higher species in the course of its development. It is true there are not such connected series in all parts of the animal and vegetable kingdoms. But the more we know the more connexion we find, and the fewer gaps are left. Geology has not made known a single extinct form totally unlike those now living, but has discovered many that fill up gaps in the existing series. Until geological discovery began, the class of birds appeared perfectly isolated from all others; but geologists have now reason to believe in the former existence of an entire class connecting the birds with the reptiles. There are, however, some classes between which no gradation, no direct connecting link, has been found, or appears conceivable. We certainly shall never find, for instance, any intermediate form between the insect and the vertebrate. But neither, on the theory, ought we to expect any. There is a gradation between the insects and the worms through the centipedes—a gradation with some missing links, perhaps, but certainly a gradation—and there is a gradation between the vertebrates and the worms, through some of the lowest fishes. From the theory of the origin of species by descent with modification, consequently we infer that insects, on the one side, and vertebrates on the other, are descended from worms, and we do not expect to find any intermediate group between insects and vertebrates, except in so far as the worms can be called so. It is important also to remark that gaps between species, as well as between classes, are gradually filling up in the progress of knowledge. Intermediate varieties are constantly discovered. The argument may be thus briefly summed up. We know that every individual in the course of its development presents a series of forms, each more highly organised than the previous ones. This raises a presumption that such has been the course of the origin of each species—that it is descended from a succession of species, which have been constantly, though slowly, rising in grade of organisation. And this presumption is almost indefinitely strengthened by the discovery that, so far as our knowledge enables us to assert, there is, or has been, just such a gradation between species and between classes as the theory demands. I have now given a very bare outline of the theory, and have no time to state various collateral arguments in its favour. I must, however, mention one, which is, to my mind, the strongest of all, and is certainly the most easily understood. I mean the existence of what are called rudimentary or aborted organs—such as the leg-bones of some serpents, which do not appear outside the skin, and are of no use to their owners, and the wing-bones of that extraordinary bird, the apteryx, which has no external wings. It is impossible to believe that animals were created with useless members. We might as reasonably suppose

flexion of light within the eye; a moveable eyeball; moveable eyelids; and an Iris which expands or contracts with diminished or increased light, with its nervous connexions, which are two—one for contracting, which has its root in the brain, and one for expanding, which has its root in the sympathetic ganglia. Here is a considerable number of parts and connexions, every one of which would be useless without all the rest, and every one of which, consequently, presupposes all the rest. I do not deny that the eye and every other organ have probably come into existence by a process of gradual improvement. But I say that mere spontaneous variation, and the preservation and transmission to descendants of favourable variations, with indefinite improvement on these through successive ages, will never account for the origin of the complex perfection of such an organ as the eye. The improbability of such a supposition admits of mathematical statements. Suppose, what is, I think, a very favourable supposition for the theory, that a favourable variation, of whatever kind, may be expected to occur once in every thousand animals that reach maturity, so that the expression of its probability is one in a thousand. And suppose, what is probably no exaggeration, that, in order to improve such an organ as the eye at all, it must be improved in ten different ways at once; then, in virtue of the law of probabilities, in common language, the chances against the improvement occurring are represented by one followed by thirty ciphers, a number incomparably greater than the number of seconds that have passed by since the beginning of historical time. In fact, the improbability of any complex organ being produced and brought to perfection in any such way is an improbability of the same kind and degree as the improbability of producing a poem or a mathematical demonstration by throwing letters at random on a table. It would not be impossible, in the strictest sense of the word impossible, to produce a poem or a mathematical demonstration in such a way. It would contradict no law of nature were it done, but it is so improbable as to be, for all practical purposes, equivalent to an impossibility. I, therefore, conclude that the adaptation of one part of an organ to another, of each organ in an animal's body to the other organs, and of all to the world in which the animal has to live, are to be accounted for by no merely physical process, but are to be directly referred to creative wisdom. As matter and force are to be directly referred to creative power, so the relation of means to purpose that we see in living beings are to be directly referred to creative wisdom. I do not advance this conclusion as a new discovery. On the contrary, it is older than science, but I believe that science confirms it. It has been truly remarked that the origins of all things are concealed from us. We have never witnessed, nor can we ever witness, the origin of matter, of force, of life, or of mind. Yet science raises these questions, and shows why and in what sense they are insoluble. And these bring us to the borders of a region to which science can only point the way, and which it is the exclusive privilege of faith to enter.

Mr. A. O'D. TAYLOR (secretary) said he believed it was contrary to etiquette to have any discussion on the address of the president, but Mr. Murphy would be glad to reply to any remarks that might be made.

Dr. BROWNE said he did not intend to criticise the address, which had opened up a wide field for speculation. They must all feel deeply gratified by the paper, and grateful to Mr. Murphy for the clear elucidation he had given of the matter, so far as he had gone; and while it was not etiquette to make any remarks on the paper, it was within the bounds of etiquette to convey to Mr. Murphy their warmest thanks for the able paper he had submitted to the society. (Hear.) The field that had been opened up was one of vast interest, and one that would require centuries to develop. At the same time they should develop it as far as they could, and Mr. Murphy had laid a fair foundation for entering on discussions of great importance to thinking beings. He begged, through the secretary, to convey the thanks of the meeting to Mr. Murphy for the very able address he had delivered that evening. (Applause.)

The meeting then separated.

VISITATION OF THE BISHOP OF MEATH.—The primary visitation of the Lord Bishop of Meath was held on Wednesday last, 14th inst., in the Parochial Church of Mullingar. Immediately after the conclusion of the Litany, his lordship commenced his charge, the delivery of which occupied upwards of an hour. In alluding to Ritualism, his lordship said that it had involved the Church in England in many and sore troubles, and it was to be feared that the protests of the bishops would be found useless. The zeal of some ministers had led them into the adoption of extraordinary courses, calculated to estrange the people from the Church. Should it be so? Should such practices continue, or should the rubric, under which they found, or thought they found, a sanction, remain unchanged? Many of the most pious, moderate men saw no objection to change. Forms of worship were, by many, acknowledged to be unimportant. But the difficulty of making such changes was the primary consideration. The Church, as represented in Convocation, could not make those changes. They could be made only by Parliament and the Crown; and might they not thus lead to other and worse changes? He did not think the danger so great as many supposed, but it was the present state of religious feeling he thought it wiser to refer to Parliament on the subject of change. Should the advocates of Ritualism succeed in disseminating their practices and doctrines, it would cause a revulsion of the laity, and in proof of this he would only quote the words of the Archbishop of Dublin. "The laity of England (said his grace) would not prove patient while seeing all they had gained by the Reformation taken from them." In this country the evil had no danger of its being otherwise. "In the presence of the reality," said his lordship, "we are safe from poor, mean imitations of the gaudy pageantry of the Church of Rome." At the same time, he observed that the absence of a decent and becoming ceremonial, being felt to be objectionable, furnished an excuse for the introduction of Ritualistic practices; he would, therefore, earnestly recommend a careful observance of the decencies of public worship. The attendance of the clergy was numerous.—Daily Express.

THE METEORIC SHOWER Castle the magnitude of the people of England morning were seen by the Queen was a spectacle for some time.

BELFAST

Table with columns: GRAIN, &c., and various items like Wheat, Barley, Beans, etc. with prices.

RETAIL

Table with columns: BUTHERS' MEAT, POULTRY, and FISH, listing various goods and prices.

PRICES

Table listing prices for various goods like HUGHES' BAKERY, FORD'S BAKERY, etc.

IRISH

Table listing prices for various goods like O'MAHG, SATURDAY, etc.

NEWTONWARRS

Table listing prices for various goods like NEWTONWARRS, COOKSTOWN, etc.

COOKSTOWN

Table listing prices for various goods like COOKSTOWN, DOWNPATRICK, etc.

COLLEINE

Table listing prices for various goods like COLLEINE, DOWNPATRICK, etc.

ENGLAND

LONDON, FRIDAY, Nov. 16. For English wh at here to be called on Monday. In the afternoon, the market for the quarter dealer's report.

