

achieved will be delivered by God's mercy from the awful penalties of their sin, and will inherit a glory transcending their deserts; and yet "we shall all be made manifest before the judgment seat of Christ, that each one may receive the things done in the body, according to what he hath done, whether it be good or bad."

And to those by whom the Christian redemption is finally rejected, the ruin of their destiny will be aggravated or lessened by the measure of their virtues or their crimes. The gloriously good will be princes, crowned and sceptred among the commonalty of the city of God; for the shamefully wicked there will be fathomless depths of gloom and of despair.

R. W. DALE.

CREATIVE DEVELOPMENT AND EVOLUTION.

5. SPENCER AND ARGYLL ON "ORGANIC EVOLUTION."

THE doctrine of Evolution being left in this apparently helpless condition by Salisbury and his opponents in the fields both of biology and geology, Mr. Herbert Spencer, the greatest champion of this philosophy, enters the arena in the number of the *Nineteenth Century* for November, 1895, and takes up the original issue as raised by Lord Salisbury. In doing so he at once dissociates evolution from Darwin's doctrine of Natural Selection, affirming that this is incompetent to account for the primary origin of living organisms or for their subsequent elevation. In truth even "Nature," as personified by Darwin, approaches too near to the character of a divinity to suit his nescience, and he prefers without her aid to imagine a purely fortuitous or necessary origin and progress of living beings by the interaction of the organism and its environment, which leads to the "survival of the fittest"; and he appeals to

several factors by which, now and in past time, this organic evolution has been promoted, or which at least show analogous changes to those which it demands. He holds, therefore, that if the special Darwinian doctrine were cleared away, his idea of organic evolution would remain intact. It has, however, been pointed out that it would remain merely as a speculation respecting a possible fortuitous origin and progress of an orderly cosmos, without any ascertained cause, and leading only to the conclusion that the fittest to survive will survive, a truism teaching us nothing. All this is lucidly and convincingly stated by the Duke of Argyll in two articles in the March and April numbers of the same Journal, in which he shows that Spencer's organic evolution is either the ordinary and well-known fact of development which all human experience has shown to be the law in nature, whether organic or inorganic, or it is a mere dream having no substantive reality whatever. This will appear very clearly by a few actual examples. We learn from the structure of the earth and the daily changes going on under our observation, that all things are in process of change, gradual or sudden, and that all living things undergo a process of development from microscopic germs, and go on to maturity and decay and replacement by new generations. So, in the rocky strata of the earth, we have evidence that these changes have been going on from the beginning of time, and that the physical features of our continents, and the vast variety of living beings on the land and in the waters, are the results of a long and orderly development from the lower to the higher, from the simpler to the more complex. But it is perfectly possible, as Argyll well puts it, that this development may have taken place under a great creative plan, without accepting either Darwin's idea of Natural Selection, or Spencer's of spontaneous or necessary organic evolution. It may well be that the things which appear are not made of or by the

material things themselves, but by an unseen Power behind all the phenomena—even the word of God. Otherwise, without the Natural Selection of Darwin, and without any means of obtaining the primary material whence to select, we are left without any rational basis for any development whatever.

Darwin himself keenly felt this, and therefore found it necessary to assume what may be termed an original creative act. At the close of his work on the origin of species he introduces this idea in words borrowed from a very old author, the writer of the first chapter of Genesis. He speaks of the Creator "breathing life" into a few organisms or into one, and that from this original inbreathing of life "endless forms, most beautiful and most wonderful, have been and are being evolved." Darwin therefore, unlike Spencer, assumes a Creator, but he does not seem to perceive two consequences that flow from the admission. (1) It is not improbable that the creative process may have been repeated at subsequent times, when it was necessary to introduce any new or special type of being; and this would serve to account for the fact already stated, that while it is possible at least to imagine derivation by descent of closely allied species, we cannot so readily find links to connect the earliest species of new classes with their predecessors.¹ (2) It is scarcely probable that a Creator capable thus of beginning the great and complex procession of life on the earth, would leave it to chance to complete His work, and not rather fix its plan and the laws of its development and final culmination.

We may pause here for a moment to note how much less accurate Darwin is than the old author whom he quotes in this reference to a creative power. In Genesis the inbreathing of God, that "Inspiration of the Almighty," as it is called in the book of Job, is limited to the introduction

¹ This is illustrated in detail in my *Relics of Primeval Life*, ch. i.

of the rational and spiritual nature of man. It is not said of the lower forms of aquatic life which were first introduced, and which have neither "breath of life" in the strict sense, nor any approximation to the Divine likeness. The statement as to them is that God said, "Let the waters bring them forth." Under God, the waters in which they swarm are commissioned to produce them, that they may increase and multiply and fill the ocean. Herein, strange to say, Moses, though not an evolutionist, is more in touch with the grand idea of development than Darwin. The environment is first provided, and is then made to be the medium of the development of its inhabitants.

Returning to Spencer, who finds it necessary in dealing with Salisbury's objections to modify his own previous demand for indefinite time, and to express himself as content with what physical and geological science may be able to allow, it may be well to inquire a little farther into the validity of his contention that all organic nature may be accounted for by the one idea of evolution without natural selection. In doing so, we may carry with us the searching criticism which Argyll applies to these evidences.

1. We may take first the facts of embryology in individual animals considered as a recapitulation of the evolution of their ancestral types in past geological ages. It is easy to adduce apparently good examples of this. The frog is in its young state an aquatic tadpole, without limbs, and breathing by gills like a fish; therefore the ancestors of the frog and other amphibians were fishes. The butterfly in its larval state is a worm-like caterpillar; therefore the insects are descendants of worms. The analogy is, however, not complete. A caterpillar is not a worm, but really an immature insect; and a tadpole is not actually a fish. Besides, there are other reasons, quite independently of recapitulation of an ancestral state, which render such immature stages necessary to the development of the

modern animals in question. Further, the conditions and relations to time in the two processes are quite different. The development of the individual animal is a visible evolution, that of the species cannot be observed, and, if open to observation, might prove very different from ordinary evolution, and might be related to it only on the higher plane of design, or of the similarity of the workings of the Divine mind in different spheres. Further, it may depend rather on the involution which always must precede evolution than on that process itself.

One of the most familiar instances of evolution is that of a chick from an egg, a process which we can observe from hour to hour and from day to day till the microscopic germ, apparently structureless, becomes developed into all the complicated parts of the young bird. In some of the smaller fishes we can even watch this evolution under the microscope continuously, and can note the first appearance of every tissue and organ. In such a case we know that the living germ contains in it potentially, or in the form of invisible organic units,¹ something to represent every part of the animal to be produced. Along with this, there is a store of protoplasmic material, not itself living, but ready to be absorbed as required, to be built up into the several parts as each of them is fashioned. It is a wonderful process, and no one who has seen it in any one instance can ever forget it, or, if at all in a proper frame of mind, can fail to be impressed with the marvellous power and inscrutable adjustments which it implies, and with the mystery which lies behind the visible processes of formation and growth, under the wonder-working energy of life. All this is evolution proper, but there is much more implied in the whole development of which it forms a part. There is the previous involution in the germ of all that we have seen

¹ I may refer in this connection to an interesting paper by Miss Layard, read at the meeting of the British Association, at Ipswich, in 1895.

evolved from it. This includes the antecedent determination of the form, structure, and living powers of the creature to be produced, and of all their relations to the environment in which it is to live and the place it is to occupy in the system of nature. It includes, in the higher animals, energy and material derived from two parents. It includes all that takes place in the ovary of the mother—the fertilization of the embryo cell, its being furnished with a store of suitable pabulum, and, finally, the incubation or whatever other external conditions are necessary to secure the commencement and successful progress of the growth of the embryo.

In this elementary case, then, it is not so much the evolution as the involution that is prepotent and mysterious, and it is here that at this moment the greater part of the minute investigation and warm controversy among biologists is centered. This raises the question—What is there in the succession of individuals in different generations that corresponds to the involution in the individual embryo? One thing we may certainly conclude, that if there is such a thing as transmutation and development of new species, it must be sought for here, rather than in evolution properly so called. Further, with Darwin, we must suppose one or a few perfect organisms given to begin the development, and we must suppose such primary types to include potentially or structurally all that is to be evolved from them in thousands or even millions of generations.

Let it be observed that this is the simplest view that we can take of organic evolution as propounded by Spencer. Is it possible, then, to imagine it as beginning and continuing spontaneously and fortuitously? Must we not rather see in it the development of a Divine plan too vast and intricate for our comprehension, and must we not cease to designate it by a term which can at best cover but one

portion of the great and practically infinite scheme of the development of life. Many years ago a friend of mine, now departed, the late Mr. Higgins of Liverpool, proposed in a paper on this subject the use of the term Development and the abandonment of Evolution, except in its proper sense. I made the same suggestion in 1890 in my little book, *Modern Ideas of Evolution*, and later in *Salient Points in the Science of the Earth*. The Duke of Argyll, in his paper above referred to, has more fully advocated the same idea and illustrated its significance. It is time surely that in the interest of accuracy of thought it should be adopted, and that the loose use of the term Evolution should be left to those popular writers who have already destroyed its scientific value, even in the estimation of those who still believe in the hypothesis respecting organic nature to which it was originally applied.

2. In like manner an analogy can be perceived between the classification of animals in orders and classes in accordance with their degree of complexity, or with their type or pattern (or, to use the slang of certain artists and antiquaries, their "*motif*"), and their succession in geological time. But here we are met by that difficulty of explaining the first appearance of classes and orders referred to by Zittel and previously noticed. Besides, this point of view rather inclines us to compare nature with certain human works of art, in which we perceive, as the result of design, the same union of type or pattern with utilitarian purpose; as, for example, the erection of buildings in accordance with particular orders of architecture, or the growth of Egyptian temples by the addition of successive halls and propyla, all in similar style. We are not usually inclined to refer such things to chance or to mere mechanical necessity. Here we may also observe that the anti-Darwinian fixity of specific and generic characters alone enables us to classify the oldest and the most modern

animals or plants in the same systems of arrangement, so that all the animals and all the plants, from the beginning of geological time, go into respectively the same zoological and botanical classifications, a fact which tells in favour of one great comprehensive plan, rather than of indefinite and fortuitous variation.

3. In the case of geographical distribution we have a different consideration, which relates not so much to style or complexity as to position. It is true that in some more or less detached continental or insular areas, as in South America, Australia, and New Zealand, we see special groups of animals that are closely allied to those that occupied the same areas in the later geological periods; but it is not necessary to suppose that the extinct species were transformed into the modern ones, which are, besides, generally degenerate in size, like the modern sloths of South America in comparison with the great ground-sloths of previous periods, or the modern Kiwi, or Apteryx, of New Zealand, in comparison with the gigantic *Dinornis*. It seems more likely that of a group of animals of different statures only the smaller species have been able to survive owing to changed conditions. Besides, investigation has extended the range of some of the supposed local groups, and weeding out of the larger and more massive types has been general in the early modern period on all the continents.

4. In the case of rudimentary organs appealed to as remnants of structures fully developed in remote ancestors, some of these are still useful, though the uses of others may not be understood. Others are provisions for contingencies or future needs; and this, as Argyll has well pointed out, is explicable only on the supposition of a deliberate plan extending into the future.

I may here leave the hypothesis of evolution, as held by Darwin and Spencer, as one deprived by its own advocates

of any good foundation in nature, when regarded as an explanation of the origin and succession of species; and may refer to the papers of the Duke of Argyll, already cited, as fully showing that this conclusion is inevitable, and that Spencer and Darwin take their followers very nearly into the same position with that of the pre-Newtonian physicists, who explained the rise of water in a pump by the aphorism that "Nature abhors a vacuum." So Spencer endeavours to show us that among the varieties of organic beings "Nature abhors the unfit," and the Natural Selection of Darwin is merely the converse of this, to the effect that "Nature selects the fittest." Neither of these dicta, however, exempts us from the necessity of enquiry as to the First Cause, and under Him the secondary causes, if any, of the vast and complicated succession of living things that have inhabited and now inhabit the earth.

J. W. DAWSON.

(To be concluded.)

THE BAPTISM OF JESUS.

I.

THE generation of Jews to which our Lord belonged was rich in possessing two samples of God's best gift to the world—men of prophetic vision, and devoted to the highest interests of humanity. If only they had known how to value them! But of John they said, "He hath a devil"; and of Jesus, "Behold, a man gluttonous and a wine-bibber"! Not so did the two servants of God think of each other. Even when his mind was clouded with doubt as to the precise vocation of Jesus, John had no doubt at all as to His high endowments and worth. The question, "Art Thou He that should come?" could only have been addressed to one conceived capable of being a Christ. How