

No. 2

IS EVOLUTION TRUE?

What the Stars,
Plants and Atoms
all tell us

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No. 2.

What the Stars, Plants and Atoms Tell Us

WHEN we look around at what we see in the world and in the sky overhead, we all want to know why these things are there, and how they came to be as they are. Little children, as soon as they can speak, begin asking questions about it all. We may inquire what makes the sun shine; or we may ask whether there were always trees in the world, and why the leaves are green. A child may want to know what the lightning is and what makes the thunder. Such childish thoughts are put in rhyme: "Twinkle, twinkle, little star; how I wonder what you are?" Now, are we to say that such questions are foolish and silly? Not at all; for they lead on to wide fields of knowledge, and many learned men are still trying to find better answers to such questions as these.

Thoughtful men in past times, and in many countries, have gone further with their questions. They have been asking: How is it that we find ourselves in a world like this, and where did we all come from? Then they realise that people could not live unless there were things to eat in the world; and crops could not grow unless there was rain; and there could be no rain unless there were oceans of water. So it goes on and on like "the house that Jack built." It goes in a circle too, for the last question takes us back to the beginning, when we ask: How does it happen that things have come to be as we find them in the world, and how did it all begin?

Chance and Change.

There have been men who said that all we see around us in the world just came by chance. Things might have been different, but they just happen to be as they are. Now, let us think about this. If

Is Evolution True?

everything came by chance, it is clear that things would go on by chance. We would be living in a world like Alice in Wonderland. We might at any time chance to grow bigger or smaller; it might stay at six o'clock for a year, like the Mad Hatter's watch. All this may be amusing to read about; but we would find it very inconvenient before long. For we would never know what to expect; we would not even be sure that the sun would rise to-morrow. But the world is not like this; it is orderly, and things are helpful to each other. The things that grow, give suitable food to the creatures; the air is just right for the animals to breathe, as well as for ourselves. Everything thus shows us that there must be an intelligent Creator, Who arranged it all. The new wonders that we are finding through science, should surely make plain the wisdom and power of God in planning it all. Many scientists see this clearly. Sir Oliver Lodge puts it in this way: "The universe is shoutingly full of design, plan, intention, purpose, reason." Sir James Jeans also says very plainly: "We discover that the universe shows signs of a designing or controlling power that has something in common with our own individual minds."

There is hardly anyone in these days who believes that the world came by chance; for this does not explain anything. But there is another idea about how things came to be, which has become very popular. It is that one thing turned into another, and each was an improvement on the one before. By this development things gradually came to be as they are now. When life began, it is supposed that plants and animals kept on changing from one kind into another till the highest kinds arose. At last, from the best and most intelligent of the animals man himself developed. This idea of how things came to be is called the doctrine or theory of Evolution.

What the Stars, Plants and Atoms Tell Us.

We are often told that we cannot deny Evolution, because it is all around us. Do we not see the budding leaf, the egg that hatches into a bird; and so on, everywhere? So the word "evolution" is made to include almost everything that happens in nature. If we look into this, we will find that this one word is made to mean two entirely different things, which is very confusing if we want to know what we are talking about. One of these meanings is properly called the "life history" of a creature; and the other meaning is the change of a plant or animal into something else which is entirely different.

Before There Was Life.

Let us begin with things without life, and see what is meant by their "life history." We might make quite an interesting story about the life of a raindrop; how the sun coaxes it to leave the ocean as vapour and rise into the clouds, and in sailing over the mountains it gets a chill and falls as a drop, and then trickles in a stream and floats in a river till it gets back to the sea again. So this drop is at one time mist or vapour, which condenses to form a drop, and it may even freeze solid and come down as hail. Yet whether it is vapour or liquid or solid, it is always water and does not turn into anything else.

Now this little story will help us to understand how the stars are formed. They are by no means alike; they have been very carefully studied, and divided into groups and classes; and this leads on to very interesting results. When we explore the stars, it is like walking in the woods, where we may find a seed on the ground just beginning to sprout, a little shoot with two or three leaves on it, a young tree and another full grown, and a dead trunk lying on the ground from a tree that has finished its life. So we can trace the life-history of an oak from what we see at the present moment, without watching

Is Evolution True?

an acorn for years from the time we plant it. The astronomers find that it is just the same as this among the stars; for they seem to be in all stages of development, and if they are put in a certain order, they can be traced from their birth to their death.

What then is meant by the evolution of a star? We often hear this expression. We may begin our arrangement of the stars with the bright spots of mist (or nebula) in the sky, for it is more than likely that the stars have formed from these. As they form, they become exceedingly hot, and shine with clear white light or even a bluish tinge. Afterwards they cool down to a red heat, and at last they turn cold and dark. It is known that there are dark stars, for others that are bright enough to see, revolve around them. Now, this may be the "life-history" of a star, as though it was born very vigorous and gradually faded out and died.¹ Yet there is no Evolution in this, for the materials are the same all the time, without change into other substances. What really happens to the star is very much like our raindrop; for there is progressive change from a gaseous or vapoury state to liquid and to solid; and they both lose heat in the end. But this process is not Evolution.

Sir James Jeans, in one of his interesting books about the stars, has a section entitled "Stellar Evolution," and in this he says: "Whatever a star's evolution may be, it is essential that it should always be "down" the steps; any upward step is impossible."² It is plain from this that a star, as it changes, does not turn into any better material or rise superior to what it was before, which is the proper meaning of

¹ According to some theories, the stars come to an end by burning out, rather than by cooling down; but this does not alter the bearing of what is here said.

² See "The Universe Around Us," page 306.

What the Stars, Plants and Atoms Tell Us.

Evolution; and we need not be misled by the way the word is here used.

We may now turn from the immensity of the stars to the atoms. These are the smallest particles of any element such as copper or sulphur; for if they are broken up further, they are no longer chemical substances, but lose their characters and properties. So the atoms have been called Chemical Individuals.

The atoms are like houses in the town of Chemistry; and some of them are very simple with only one room, while others are large castles and mansions, with gables and towers. It has now been discovered that a few of the biggest ones gradually break up. Their pinnacles and towers fall off, and they come to be the same as the medium-sized houses. The scientists have also found means to batter down a few of the houses; and we have thus learned that all the houses are built of just two things, timber and bricks, with some kind of mortar to hold them together. We also find that it must have taken an immense amount of power (or energy) to build the houses at first; but how they came to be built, science cannot tell us.¹

We find then that the larger atoms can go down hill to lower levels when pieces break off them; but the point is that nothing is known of the opposite process of building up. Even the pieces cannot be put together again, and far less can the ultimate particles be built up anew.² This leads to a very wide conclusion; because all the materials and substances in the heavens above and the earth beneath

¹ This has come to light through Radio-activity; which has shown that all the atoms consist of "protons" and "electrons," held together by electric attraction. Yet how far the electrons are particles, or some kind of wave-vibration, is still under discussion.

² Professor R. A. Millikan, however, claims that the "cosmic rays" indicate the upbuilding of elements in inter-stellar space; but these indications can be otherwise interpreted. Yet he takes this to mean that the Creator is still at work; which does not seem to favour unintelligent evolution.

Is Evolution True?

are made up of atoms. If then we question the materials that the stars are made of, as well as the rocks and the sea, we find that they know nothing about improving themselves by changing into something better and higher-class than they were before. So they have not a word to say in favour of Evolution.

A few years ago a number of men of science who were learned in special subjects, were asked to say what they found to prove Evolution in their branches of knowledge. One of these men was Dr. F. Soddy, Professor of Physical Chemistry at Oxford. He ends his explanations with the question, whether the idea of Evolution can apply to material things; and says there is no reason to suppose that the simple atoms came first and the complex ones afterwards; so if we speak of evolution in chemistry, it only means that we like to think this. We cannot say that one atom is the father of another, or that the larger atoms grew up from the smaller ones; for such ideas are not found in physics and chemistry. But we can see, in a very limited way, that some of the heaviest elements go "down" by successive steps, which end with a simpler element. If we say then that there must have been evolution from a simple beginning, this is only to bring in our ideas of development where they do not apply. "Can any one honestly see even a trace of that consecutive progress . . . reflected in the ways of the material universe?" This is given as a fair summary of his conclusions, in his contribution to "Evolution in the Light of Modern Knowledge," pages 401 to 404.

Let us see then what all this means. We are told by evolutionists that all things have developed from some one primary gas or substance; and we may well ask to be told the story from the beginning. The things without life came first, and they should not be left out. An eminent scientist, though he specially studies living beings, can see that Evolution should be able to explain how material things came to be.¹ These things were first, for the sun and the stars, the land and the oceans, were there before any life began. From all that we have come

¹ Dr. William Bateson, the biologist, who says: "Every theory of evolution must be such as to accord with the facts of physics and chemistry; a primary necessity to which our predecessors paid small heed."

What the Stars, Plants and Atoms Tell Us.

to know, it is clear that no Evolution went on during those long ages before there was life in the world.

Evolution cannot therefore begin at the beginning, and it has thus no basis to start from. If evolutionists say they only explain living creatures, and they need not go back further, they build their Evolution like a house that does not go down to any sure foundation; for beneath it there are only the sands of uncertainty.

All that we have now come to know, should give us more reverence and humility. Half a century ago, science thought it could explain almost everything, and that Evolution showed us how all things had developed. But so many new things have been discovered, that we now see how little we can really understand. When we think of the telephone, the radio and wireless, and talking pictures, do we always remember that the Creator gave to electricity and light the properties which make these possible? In this age more than any other, we should reverence the Creator, Whose ways are past finding out. Our science touches only "the outskirts of His ways; and how small a whisper do we hear of Him! But the thunder of His power who can understand?" (Job xxvi. 4, R.V.).

Plants and Trees.

We should certainly be interested in the great world of vegetation, because our food consists so largely of vegetables, grain and fruit. Many animals live entirely upon grass and herbage; and it is some of these, such as the deer or rabbits, that lions and eagles prey upon. So all animal life depends on vegetation. But how did things begin to grow?

Plants are different from animals, for they find all they need in the air, water and earth. But it is only plant life which can manufacture from these elements, the substances by which they grow. This is very plain to those who understand chemistry;

Is Evolution True?

for we then see that plants by their living power, can turn chemical action the other way round, and thus make new substances.¹ The highest of these substances is needed to produce seed.

Evolution cannot explain how plant life began.² It can only say that it must have developed somehow from elements without life, or Evolution would not be true. But this does not prove that it happened. The only answer to our question is what the Bible declares: that God commanded the earth to bring forth grass, and herbs, and fruit trees; and this took place. It was therefore the direct power of God which caused plants to begin to grow upon the earth. If we are unwilling to believe this, there is no other explanation to be found; and we must be content not to know, for science is quite unable to tell us.

We see also in the world a wonderful variety of vegetation. There are humble kinds of mosses and ferns which have no flowers; there are pine trees and spruces which do not bear any nuts or fruits; and there are fruit trees and plants with their seeds inside their fruit, as currants and apples have. So, when we look over all the different plants and vegetables and trees, what comes out most clearly is the contrast between the different kinds. Ferns have spores, almost like dust, instead of seeds. Some trees, such as the palms, have stems that are strengthened inwardly, whereas the birch and the maple add layers of wood to the outside of their trunks, as they grow taller. The leaves of the pine and the oak, and the way their seeds are formed, could hardly be more different. Everywhere we look, we see opposites and no connecting links. How then can we suppose that one kind of plant developed from another? The great vegetable world of plants

¹ They de-oxidise and re-combine the elements.

² It is now admitted by the best authorities, after much research, that "spontaneous generation" is impossible.

What the Stars, Plants and Atoms Tell Us.

and trees is an immense puzzle to the evolutionists; and in consequence, very few botanists, who study these things, believe in Evolution.

The truth undoubtedly is that these classes of plants were different from the beginning, since they first came into the world. They have been under the command of God, to continue "after their kind" (See Gen. i. 11, 12.) Yet the evolutionists try to get out of their difficulty by telling us, we would see that they are right if we go back far enough, to the simplest and smallest things there are. So we will look into this next.

The World of Minute Things.

There is a whole world of minute plants and animals, which consist of only one cell. They are so small that they cannot be seen without a microscope. Some are round or oval, and some kinds form into chains, like a string of beads. Others are little rods or bars, and look like chopped straw. Yet these things are not just specks because they are so small. They have a structure, such as an outside skin and an inside fluid; and this fluid is as good as the sap of a tree or our own blood. Then besides, these minute things are alive. In the two great realms to which they belong, they have vegetable life or else animal life. So they all need nourishment, and they all reproduce themselves, and multiply.

It seems that there are as many kinds of these one-celled creatures, as there are among all the plants and animals which are larger. Yet almost the only ones that people usually hear about, are the disease germs, which are like vipers and scorpions amongst the other animals. For there are whole tribes and families of one-celled creatures which are extremely useful and helpful, and many others that are at least harmless. These little things are full of interest, and large and learned books have been written upon them; but there are just two questions

Is Evolution True?

about them that we will take up at present. For evolutionists say that life began with them; and also that all other plants and animals developed from them.

First of all, is it certain that these are the primary living things and the earliest in the world? In reality, there are very large groups of one-celled creatures, which can only live with the help of what is more advanced than themselves. Some are helpful to plants, and live on their roots (enabling plants to assimilate nitrogen). Then the moulds and other scavengers live on decaying matter. Many others live within the bodies of insects or animals; and some kinds get their nourishment from these animals, while others help them to digest their food.¹ Others again cause diseases. It is plain that none of these kinds could have existed before there were well-developed plants and higher animals in the world. These minute creatures thus serve definite purposes in nature. It may possibly be that the Creator made them in different ages, as they were needed. Can we say that the Divine intelligence in creating a tiny creature, or the power of God to make it live, is less than for some larger animal?

We next ask: If these one-celled things can change so easily into better creatures as the evolutionists say, why is it that they have not done so long ago? How does it happen that there are such multitudes and such varieties of them still in the world? Then again, if we are trying to see whether each seed that grows and each animal that is born is a little better than its father or its parent plant, we would have to watch a very long time to see any change. For seeds take a year to grow, and most animals and birds have young ones only once a year. But here are these tiny one-celled things which multiply so fast that it is possible for their numbers to

¹ Strictly speaking, they assist the absorption of nourishment in the intestines, after its digestion.

What the Stars, Plants and Atoms Tell Us.

double every half-hour. There are as many generations among them in three weeks as sheep or birds have in a thousand years.¹ So here surely is a splendid chance to see if creatures change, and if anything does, those lowly and simple things should do so.

Among them all, the disease germs have probably been the most carefully studied. Yet if there was any change at all, this study would be quite useless; because from one year to another, a typhoid fever germ might turn into a malaria germ. There would thus be no certain way of telling one disease from another. One year for these germs is the same as 175 centuries in producing breeds of cattle. So it is really very wonderful that they show no change whatever. How can the evolutionist explain this?

Plants and Animals.

It may seem strange to ask whether we can always tell a plant from an animal; but when we come down to creatures which have only one cell for their whole body, it may not be so easy. Yet it is important, for the evolutionist has to prove that plants turned into animals, or at the least that they were both the same at first, or he must give up his theory of Evolution.

The distinction between plant and animal that is most readily seen, is shown by the two different ways in which they nourish themselves. A plant can get all that it needs to live upon from the air and water and ground. It takes the gases in the air, and the salts dissolved in water or in the earth, and manufactures these into starch and sugar, and even higher products. No animal can do this, for it cannot live directly on air and water and earth. An animal must have for its food the things which plants have already prepared; and if it eats milk and eggs, or even meat, these have already been pro-

¹ For there are 1,000 half-hour generations in three weeks.

Is Evolution True?

duced by other animals from the vegetation which they fed upon.

We may sum it all up by saying that plants made food, and animals use it up. This is strictly correct; and the use to which the animal puts this food is just the opposite of what the plant has done. We could make this very plain if we could go into the chemistry of it all; but we will just give one sentence of this: "Plants produce starches and albumins directly from inorganic substances by de-oxidizing them; whereas animals consume these by oxidizing them, and thus obtain their heat and muscular energy. This shows the gap which there is between vegetable and animal life; which on the whole are just the opposite of each other.

The innumerable things that consist of a single cell are divided broadly into two great realms the one being vegetable and the other animal.¹ The two ways in which they nourish themselves shows the difference between these realms; as we find everywhere between the plant and the animal. Yet it may not always be easy to see just what these tiny things do and how they obtain nourishment. There are thus some that appear to us uncertain, as to what they are; and the evolutionists make the most of these. They are strongly tempted to confuse vegetable and animal life amongst these simple creatures; because they are trying to prove that these so-called things gradually changed into plant forms on the one hand and animal forms on the other; and they wish to make out that these minute creatures may be anything.

It might be very well to discuss such things amongst learned men who have all the facts before them. But it is not right to give a one-sided account

¹ The two are distinguished broadly as "Bacteria" and "Protozoa"; and the vegetable category all contain "chlorophyl," which is essential to the nutrition of plants, and is thus another distinguishing feature.

What the Stars, Plants and Atoms Tell Us.

of the subject in school books to those who are only beginning to learn. There is much in encyclopedias and text books that is misleading; for it is written not to explain the subject, but to prove Evolution. This is specially unfair, when the explanations are intended for those who have no knowledge to begin with, and are trying to find out. We should be well on our guard about this, and very careful what we believe; for we are taken into the darkest corners where no one as yet can see clearly, and we are told in learned language, that this is where Evolution took place.

When we can see clearly what goes on, everything is very plain. Here is a little animal of one cell, call an "Amoeba." It is like a bit of jelly, and we can hardly imagine anything simpler. Yet we can see two "organs" in this cell. There is a speck within it, which is its nerve centre or brain, and a minute bubble that grows larger and suddenly smaller as it pulsates. This is its heart; but how does it get on without a mouth or a stomach? Its way of eating is simple, for it is so simple itself. It merely wraps itself around its food, so that for the time being it seems to become all stomach. The food it thus eats is a one-celled plant (a diatom or a desmid). So this one-celled animal lives on vegetable food; and it digests this food, and throws away its hard rind or its shell. This fascinating little creature has been carefully studied, and it seems able to think in a way, probably as much as it needs to. For it shows some cleverness and even method in catching its food.¹ This is really "animal intelligence," and shows that even one-celled animals are quite different from plants.

When we look into the natural things around us, or study them in books, we will understand them

¹ According to recent investigations by Prof. W. A. Kepner, described in "Science," June 6th, 1931.

Is Evolution True?

far better if we keep in mind that they were all created for a purpose. For everything in nature is helpful to some other creature, and it thus has a place to fill. Any view of the world that leaves God out of account, will only make it difficult to see the meaning of nature clearly. Because in all that we can learn from nature, it is reverence for God as the Creator which is the beginning of knowledge.

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