ANALYSIS OF SO-CALLED EVIDENCES OF EVOLUTION

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Introductory Observations

Before one begins to write in this semantic age of ours, it has become necessary to define terms, for instance, the term creation. SO I submit that in my opinion the theory of creation asserts that:

a) organisms now living have descended from organisms of the same created kind, as referred to in Genesis;

b) within such created kinds, processes of change may have occurred and do occur to such an extent as to produce individuals differing in various degrees from their parents, yet never sufficiently different to constitute a new "kind"; (for example, the various breeds of dogs, and the several races of men);

c) such physical changes which are demonstrated to have appeared in organisms since their creation, have arisen through degeneration due to the Fall of Man or through natural causes which now continue to be in operation and which therefore can be studied experimentally.

I also should define the term evolution. I am well aware of the fact that there are in both Standen and Kerkut references to two theories of evolution. However, in the majority of our present day science books, certainly those in the elementary, secondary and undergraduate levels, the word evolution usually means what Kerkut and Standen both call the "general theory of evolution," that is, the theory that all the living forms in the world have arisen from a single source which itself came from an inorganic form. This is 'amoeba to man' evolution and is the meaning of the word evolution as I am using the term in this presentation.

Now if it happens that more persons hold to one particular philosophy than another, that does not make the first philosophy true. It could actually be that the minority view may express the truth, with the majority view being false. So it is with evolution; the number who believe in it is no guarantee of its truth.

An honest person will accept items which have actual existence as facts. On this there should be no disagreement. But the hypotheses that are built on such facts, as well as the reconstruction of past events are all legitimate grist for differences. As Dr. George once wrote,[1] "Facts remain but theories crumble." I might also point cut that Dr. James Conant has said, "Statements about the past, predictions about the future, generalizations about what event will follow another, are all grist for the mill of the thoroughgoing sceptic." [2]

We find ourselves in a dilemma because those who subscribe to evolution take a body of facts and interpret them one way, while those who subscribe to creation take the same body of facts and interpret them another way. It is my contention that actually neither can be proven, both must be taken on faith.

And let me underline this last clause, *both* must be taken on faith. Evolution is not a fact, it is a theory. Recently the French biologist, Prof. Louis Bounoure, quoted Yves Delage, a late Sorbonne professor of zoology as saying:

> I readily admit that no species has ever been known to engender another, and that there is no absolutely definite evidence that such a thing has ever taken place. Nonetheless, I *believe* evolution to be just as certain as if it had been objectively proved.[3]

Incidentally, Bounoure comments: "In short what science asks of us here is an act of faith, and it is in fact under the guise of a sort of revealed truth that the idea of evolution is generally put forward."

Dr. Bounoure, formerly president of the Biological Society of Strasburg, as well as Director of the Zoological Museum and still director of research at the National Center of Scientific Research in France also wrote—"Evolutionism is a fairy tale for grown-ups. This theory has helped nothing in the progress of science. It is useless." In a later article on the same subject, Bounoure quoted from a present day Sorbonne professor of paleontology, Jean Pivateau, the admission that the science of facts as regards evolution "cannot accept any of the different theories which seek to explain evolution. It even finds itself in opposition with each one of these theories. There is something here which is both disappointing and disquieting." [4] More on this aspect will appear later.

At this point I must digress on the subject of quotes. The plaintive cry is often raised that a creationist may not use an evolutionist's statement as a support for a creationist's point of view, I submit that this complaint is invalid. For one thing, no reputable creationist attempts to portray an evolutionist as supporting the case of creation. This is not the intent of the quote. But if the evolutionist mentions a point in his writing that the creationist can use to his advantage, then by all the rules of evidence, he is free to do so.

Certainly any piece of favorable evidence an attorney can pry out of a hostile witness, is choice evidence indeed, and the attorney would be a fool not to make the most of it. Further, the dilemmas of evolution are often best presented by its proponents. They certainly can be trusted to minimize their difficulties, so I can scarcely be charged with exaggerating them. So, for the record, assume I quote from those of evolutionist persuasion, unless I identify the man's position as being otherwise. In this connection I would like to draw your attention to some words that W. R. Thompson wrote in 1956:

> As we know, there is a great divergence of opinion among biologists, not only about the causes of evolution but even about the actual process. This divergence exists because the evidence is unsatisfactory and does not permit any certain conclusions. It is therefore right and proper to draw the attention of the non-scientific public to the disagreements about evolution. But some recent remarks of evolutionists show that they think this unreasonable. The situation where scientific men rally to the defense of a doctrine they are unable to define scientifically, much less demonstrate with scientific rigor, attempting to maintain its credit with the public by the suppression of criticism and the elimination of difficulties, is abnormal and undesirable in science.[5]

May I say that for my part, I intend to continue to draw the attention of the non-scientific public to the weaknesses and disagreements about evolution as long as the Lord gives me strength so to do.

The statement that "everyone working in science accepts evolution as a fact" is often used as an argument for compelling the acceptance of evolution over against creation. I submit that this statement is not true, and I think that can be indicated by the known position of the following individuals:

Dr. Frank L. Marsh, professor of biology at Andrews University; Dr. Henry Morris, Professor of hydrolic engineering and head of the civil engineering department, Virginia Polytechnic Institute; Dr. Walter E. Lammerts, in the past on the faculty of the University of California and for many years research director of Germain's, in addition to being the leading rose authority on the west coast; Dr. Thomas Barnes, director of the Schellenger Research Laboratory, also on the faculty of Texas Western University; Dr. W. R. Thompson, former director of the Ccmmonwealth Institute of Biological Control, Ottawa, Canada; Dr. J. J. Duyvenné de Wit, late head of the zoology department, Orange Free State University; Dr. John Moore, professor of science education, Michigan State University; Dr. Louis Wolfanger, professor of soil science, Michigan State University; Dr. Duane Gish, biochemist of the Upjohn Laboratories, Kalamazoo, Michigan; Dr. George Howe, professor of biology, Westmont College, California; and Dr. C.E.A. Turner, professor of chemistry, Surrey, England.

I am personally acquainted with all of these men and have been in correspondence with them many times. In each case I am positive that each one in turn could name an equally larger and possibly more impressive circle of men with whom they are acquainted and who also do not accept evolution as a fact. For example, Dr. Lammerts has told me that there are five friends of his who are all Ph.D.'s in nuclear physics on the staff of the Lawrence Radiation Laboratories, who are involved in the government operation "plowshare." All five of these men are creationists, although they are nuclear physicists.

To mention an additional few, I could add to this list the late Dr. L. Merson-Davies, gold medalist in geology, of England; the late Dr. Paul Lemoine, curator of the Natural History Museum, Paris, France; as well as Dr. Martin Lings, currently of the British Museum; and Professor Louis Bounoure of the National Center of Scientific Research, France.

Finally, I am in the unique position to know, as treasurer of the organization, that the Creation Research Society has over 150 members who have earned Ph.D. or M.D. degrees in science and have signed a statement of belief in creation as opposed to evolution as voting members. Now I am willing to grant that this number may be in the minority, but that there is nobody working in the field of science of reputation who does not accept evolution as a fact is a statement I simply will not accept.

I think another valid question to be raised is, Could books and articles on creation be scarce because the creationist view cannot get a fair hearing? I ask the reader to judge from the following three examples. I feel that the situation is a little less biased in England, since I know that the *Journals of the Transactions of the Victoria Institute* are open to both creationists' as well as evolutionists' viewpoints. Some recent studying I have been doing indicates that on the continent, particularly in France and Germany, the question of evolution is even more open. Actually, the only two possibilities regarding the origin of the living world are development by transformisms (evolution) or creation by God.

The position of the science of today over against creation may best be demonstrated as follows:

(a) Dr. S. Zucherman once wrote:

> Either evolutionary change or miraculous divine intervention lies at the back of human intelligence. The second of these possibilities does not lend itself to scientific examination. It may be the correct explanation, but, from a scientific point of view, it cannot be legitimately resorted to in answer to the problem of man's dominantly successful behavior until all possibilities of more objective explanation thru morphological, physiological and psychological observation and experiment are exhausted.[6]

(b) Dr. W. R. Thompson recently wrote me that the chapter on evolution in his recently reissued work, *Science and Common Sense*, (Magi Books, Inc., Albany, N.Y. 12208) would be much stronger against evolution were he to write it today. As he put it, at the time he wrote it, the book had to be passed by a reader, who had strong evolutionistic views, and therefore Thompson was forced to compromise to get the book published.

(c) The noted columnist, George Sokolsky, touched on another example when he wrote,

> So it appears from what can be learned about it that certain scientists, including leading astronomers, threatened Macmillan with a boycott of their textbooks if they did not rid themselves of Professor Velikovsky's book. Of course, what the learned and liberal professors wanted really was a total suppression of a book which opposes their dogma.[7]

Macmillan yielded to the threats since they were an extensive publisher of textbooks, and transferred the publishing operations to Doubleday and Company, which does not publish science texts and therefore was immune to such a threat. Actually Doubleday published all five of Velikovsky's works.

As a continuation of this story, I also refer the reader to John Larrabee's article in the August 1963 issue of *Harper's Magazine*, entitled "Was Velikovsky Right?" I think this article ought to be required reading for all who maintain that scientists are completely objective, never biased, and thus not like the average human being. In this article Larrabee points out that as early as 1950, Velikovsky predicted the high temperature of Venus, the radio emissions from Jupiter, as well as the phenomenon we know as the Van Allen radiation belts. For none of this has Velikovsky been given any credit on the basis of priority, nor have his predictions even been acknowledged in any of the descriptive writings on these matters. To avoid misunderstanding, I should mention that Velikovsky is not a creationist, although considered a scientific heretic of the first magnitude.

In this country, almost all books dealing with creation that I know of have been published by religious book houses.

Evolution and Classification

The theory of evolution is based on a number of fundamental considerations. The first one I would like to briefly consider is classification or taxonomy. This argument runs along these lines: Since it is possible to classify organisms, it is held that all true classification should be genealogical. And so we have taxonomists reshuffling classifications of plants and animals in an effort to find new natural systems of classification. Then any current system of classification is held to be natural, and thus a proof of evolution.

Frankly, the fact that we can group living and fossil forms of life into some thirty animal phyla and some twenty-five plant divisions would be the last thing one should expect from an evolutionary development. While these major phyla and divisions aren't as clear cut as we might like them to be, nevertheless they are stable and recognizable entities. But a random evolutionary development should call for an enormous hodge-podge, rather than such a small number of recognizable entities compared to total species number.

Furthermore, that we can arrange animals and plants into groups on the basis of resemblances should be no more significant for developmental history than that we can arrange the elements into families. I have yet to hear a chemist propose that the halogen series evolved from fluorine to iodine, because it is possible to arrange them in this series.

We may also ask the question, Why should the type form insect or cephalopod continue to be inherited in the face of random variations, if transformism be true? Even in a lower hierarchical level, despite all repeated mutations, the majority of species and all genera are real entities. This was recognized by C. E. Davenport who wrote,

> When I study thrips and wish to secure a species described fifty or more years ago as living in a certain composite plant in eastern Russia, then if I go to the designated locality and look in the designated species of flower, I will find the species with all the characters described fifty or 100 thrip generations ago. How is such an experience to be harmonized with universal mutations?[8]

Davenport says this is the heart of the problem of evolution.

The evolutionist says that, when we find animals and nature grading in complexity of structure from a protozoan to a mammal at the other extreme, this proves that evolution from a one cell to a multicellular form has taken place. The creationist says that a multiplicity of forms was part of the design of the creator. Both these statements are logical. Which one is correct? Since this is subjective evidence (animals and plants don't carry classification labels) an argument could be endless on this subject with no progress possible. I might quote the late Dr. Austin H. Clark, once curator of the U. S. National Museum, who wrote,

> It is almost invariably assumed that animals with bodies composcd of a single cell represent the primitive animals from which all others are derived. They are commonly supposed to have preceded all other animal types in their appearance, There is not the slightest basis for this assumption beyond the circumstance that in arithmetic-which is not zoology —the number one precedes the other numbers.[9]

Evolution and Comparative Anatomy

Much has been made of comparative anatomy as an argument for evolution. And again we reach an impasse. If a creationist and an evolutionist strolled through a museum, the latter would look at the specimens displayed and hold that structural similarity in mammals, for example, suggests that all forms have evolved from a common ancestor. Of course the former, seeing the same displays, would believe that the structural similarities suggest a common general design to meet a common environment created by God. Again there is no correct conclusion possible since the evidence is subjective, to be bent depending on the belief of the individual using it.

However, a word of caution has to be injected here. To think of animals in terms of bones and dead bodies alone is not enough, Certainly, for example, the difference between cat and dog transcend the anatomical and physiological, the temperaments of the two animals are different and this also represents part of the innate difference between these two animals.

I would also like to point out the following fallacy. A scientist looks at an animal, names a certain bone, then looks at another animal and uses the same name for a corresponding part. He then postulates the bone is the same. Therefore the similarity is supposed to have phylogenetic significance, and he now uses this as evidence for evolution. Obviously the postulate of homology is a subjective one created by his own mind which may or may not be correct.

Particularly in the case of the fossils are these two cautions necessary. Animal fossils are classified on the basis of skeletal parts solely, ignoring, of necessity, since they are absent, such characteristics as warmbloodedness, the number of heart chambers, red blood cell structure, presence or absence of a diaphragm and the like.

Evolution and Vestigial Organs

A third proposed proof of evolution is vestigial organs. These are structures that are found in some animal or human organism, that are considered to have no use in the present form, but have had a use in previous forms and therefore represent a sort of "memory" of an evolutionary ancestor. Truly the fate of vestigial organs has been rather sad.

In the human being, there was once a long list of such organs that were considered as useless remnants of man's evolutionary past. Although this list once ran to well over a hundred, today most of this list has gone the way of all flesh. It seems odd to us today to find that such structures as tonsils, the parathyroids, the thymus, the pineal gland, the appendix, and the coccyx were all on this list. I might mention incidentally that certainly anyone who has suffered a broken coccyx is painfully aware of the fact that it serves as an anchorage for rectal muscles. Obviously if it is serving a useful function in the body it cannot be a vestigial remnant.

The appendix has now been admitted to play a part in the control of the intestinal flora, and again, since it has proven to have use, particularly in the light of recent observations made in connection with the growth of germ free organisms, the appendix must be taken off the vestigial list. True we can get along without our tonsils and we can get along without our appendix, but we can also get along without one arm and one leg, and certainly nobody in his right mind would thereby class them as being vestigial.

In other animals, the claws on either side of the vent in certain boas and pythons as well as some other snakes have often been pointed to as useless relics of the hind legs of snake ancestors. But Dewar refers to A. K. Martin who wrote "The Ways of Man and Beast in India" and who therein reports observing that these protuberances are of assistance in the movement of these snakes. Others have also referred to the fact that the spurs projecting from the python serve as a means of helping the animal anchor itself in movement through trees.

Two more examples should be mentioned. namely whales with transitory teeth and the semilunarfold in man. In man, the latter's main use is to collect foreign material that gets into

the eyeball and collect this material into a sticky mass in the corner of the eye, where it can easily be removed and does no damage. This has been reported by E. P. Stibbe. [10]

With respect to the whales that have embryological teeth which never grow into teeth, Vialleton says,

> certain of these supposed vestigial organs deserve special examination, because they play a part that was unknown to Darwin. When he cited as truly vestigial organs the germs of teeth in the fetuses of whales devoid of teeth in the adult state, and those of the upper incisors in certain ruminants, the gums of which they never pierce, he forgot that these germs in mammals, where they are very large relative to the parts enclosing them, play a very important part in the formation of the bones of the jaws, to which they furnish a point on which these mold themselves. Thus these germs do have a function."

Furthermore, Dr. John Cameron reports that he studied a microcephalic idiot of whom the jaws receded due to poor teeth development. He says, "In many of these individuals the teeth never develop at all. The cause of poorly developed jaws are due to a deficiency or actual failure of development of the dental germs."[12]

In his *Transformist Illusion*, Dewar insistently raises a rather pertinent question-namely, where are the nascent organs, those that are about to evolve into useful organs? No one other than Darwin has ever broached this subject. Logically, if new organs are in the process of being developed, then in some animal form we should find some incompletely developed organs which are on the way to develop into fully useful structures later, but at present have no function. Yet I have read absolutely nothing on this subject.

Evolution and Embryology

A fourth point is the evidence from embryology. Haeckel enunciated the Law of Recapitulation or Biogenetic Law in 1866. This is stated succinctly, "Ontogeny recapitulates phylogeny," or the development of the individual repeats the development of his race. Probably one of the main reasons for the lack of effectiveness of this law is that it does not apply to the plant world. This would then mean that since plants and animals are postulated as evolving from a common ancestor, this common ancestor gave rise to two lines of descendants—one following the Law of Recapitulation, the other not! De Beer and Swinton refer to the Law of Recapitulation as "a theory that in spite of its exposure, its effects continue to linger in the nooks and cranies of zoology. "[13]

With respect to Sinnott and Wilson's position that some leaves would seem to recapitulate an ancestral trait, De Beer and Swinton say that the Biogenetic Law cannot be true in view of the frequency with which young foliage leaves are found to be more specialized than those formed at later stages. The embryologist Huettner gave a fairly accurate picture of the light in which it is viewed today when he said, "as a law, this principle has been questioned, it has been subjected to careful scrutiny and has been found wanting. There are too many exceptions to it. However, there is no doubt that it contains some truth and that it is of value to the student of embryology."[14]

Huettner proceeds further to point out some other difficulties. It became necessary to divide the characteristics developed in an embryo into primitive (palingenetic) and specialized (cenogenetic) characteristics. Then it developed that there was a problem in differentiating between the two. It is complained that the palingenetic traits are obscured and sometimes eliminated at the expense of the cenogenetic.

For example, there is never a true blastula or gastrula in the mammals. Also organs do not develop in the proper order. In the earliest fishes found, there are teeth, but no tongue. But in the mammalian embryos, the tongue develops before the teeth. Huettner says that there are numerous cases of this type. It is known that environmental conditions will change the orderly sequence of differentiation in the embryo, which drives one to the conclusion that recapitulation is subject to change. All this leads Huettner to refuse to accept the recapitulation theory as a 'law,' It is also of interest to note that most crabs hatch out of a larval form known as Zoeas, which differ greatly from the adult form. Yet other crabs hatch out as miniature crabs. Where is the operation of the Biogenetic Law?

Along these same lines, embryologists who make phylogenies sometimes work at embarrassing cross purposes with paleontologists. In human development, it is noted that we find that most of the bones develop from embryonic cartilaginous foundations; for instance, those that develop into the ethmoid, sphenoid, occipitals, as well as the vertebra and the long bones of the fore limbs. This would seem to imply that cartilage is primitive and bone is more advanced. As one grows older, more and more cartilage is replaced by bone. Applied to phylogenies, this would mean that sharks, as cartilaginous fish, would be the precursors of the bony fish. Unfortunately, if you take the paleontological record on its face value, we find there to our surprise, that the cartilaginous fish have developed apparently from the bony fish, since they occur later in the geological record.

In embryological development, simpler parts must be formed before more complicated ones. In small embryos, shape will be determined by physical forces, which play less and less a part in determining shape as size increases. Many apparent recapitulations may only be expressions of the fact that all animals are built out of the same kind of materials such as carbohydrates, fats, proteins, etc. Often recapitulation is absurdly irrelevant. For instance, the respiratory surface develops late in an embryo, yet how could earlier forms have survived without it? The head size in the mammalian embryos is relatively enormous but very small in their ancestors.

Long ago, when I worked in embryology, it was pointed out at the time that the embryo has two types of organs: a) Those that do not function until after the child is born, of which the lungs are a good example. Hence we develop only one lung system. b) Organs which have a function during embryonic life as well as later, and hence change form, sometimes several times, to meet changing needs. I would consider the heart and the kidneys in this category. It might be said also that the embryo would seem to follow Maupertuis' postulate of least action.

Origin of Life Discussed

The question is often raised, What about the ability of scientists to create life? In these days we so often find a headline proclaiming "Scientists Create Life," only to discover that the progress towards this goal has been a crawl rather than an achievement. What is the true picture?

A theory that deals with the origin of life, should start with the inorganic and wind up with at least a functioning cell. Intermediate steps of necessity would be proteins and deoxyribo nucleic acids (DNA), as well as the ribo nucleic acids (RNA). These are all molecules of tremendous size, but still organic molecules. They are not living, although associated with the growth and reproduction of living things.

Viruses are debatable organisms. F. Bawdin of England, noted virologist, holds that they are degenerate forms of life. Viruses are essentially a protein membrane enclosing a core of DNA. They multiply by invading the cells of an organism and using its cell constituents to produce additional viral units. One virus form that is useful to man invades bacteria and destroys them. These are known as bacteriophages or simply phages.

Stanley Miller first performed the experiment where H_20, NH_3 and CH_4, when an electric spark was passed through the mixture, produced a soup of simple amino acids. More recently an electron beam has been passed through such a mixture and produced the simple ringed base adenine. This base, classed as a purine, occurs in RNA along with another purine, guanine, as well as pyrimidines such as cytosine, and uracil. Chemists then have also irradiated with ultra-violet light a mixture of H_20, NH_3, and CH_4 to form HCHO which has then been polymerized by further radiation to form ribose and deoxyribose. These sugars occur in a typical nucleotide molecule.

An inorganic phosphate has been heated with a mixture of uracil and ribose to link these two compounds together to form diuridilic acid, which is a double linked nucleotide molecule. However, doing this sort of thing in the laboratory under carefully controlled conditions, and having the same thing occur by chance in an open environment are two different things. Furthermore, these results are still a far cry from creating something living. These compounds are still organic chemicals, complex, yes; and this has been a beautiful job of synthesis, but not yet creating life.

Dr. Sol Spiegelman of the University of Illinois recently received a bacteriophage from Japan and isolated an RNA molecule from it. Then from another bacteriophage he also isolated a specific enzyme, replicase. When the two were placed in a nutrient material, other RNA's were produced. In this case the enzyme can generate identical copies of added viral RNA. This new RNA can infect, by serving as the template for more virus. Each enzyme recognizes the genome for its own RNA and requires it as template for synthesis. However, the presence of more than one nuclease will break the whole procedure down, So this process is simply duplicating some cell chemistry. When Dr. Spiegelman was asked if he had created life in a test tube, he replied, "Only God can create life."[15] Another biochemist at the same time commented *"if* we knew the chemical composition of each different molecule in the living cell and *if* we knew how they reacted, it would take us about 10 years to do what the living cell can do in 10 minutes."

But let's go back to the beginning of this discourse on the origin of life. Since the Urey-Miller experiment, it is practically stated as fact that the earth had a beginning atmosphere of H_20, CH_4 and NH_3. But an interesting article in *Science* [16] would seem to negate this primoridal atmosphere. Three investigators, Studier, Hayatsu and Anders, examined meteorites that showed hydrocarbon traces. These meteorites were assumed to have come from either comets

or asteroids, and so they set about examining the trapped gases within the bodies of these meteorites, on the assumption that these trapped gases might indicate the gases present when the hydrocarbons were formed. The results were not at all comforting to devotees of the Urey-Miller conditions. Examination indicated that rather than the presence of the required NH_3, which was totally lacking, N_2 was present.

Another surprising discovery was the overwhelming preponderance of aromatic rather than aliphatic hydrocarbons present. The carbohydrates and amino acids that were referred to before as being theoretical intermediates in the process of creating life, are all basically aliphatic compounds, or derived from them. None of these can be derived from aromatic compounds, so the presence of these latter would also seem to mitigate against a Urey-Miller atmosphere. There also was an absence of the heavier members of the methane series. To the authors, this evidence seemed to exclude a process such as the Urey-Miller, as representing a solution to the origin of life in the past by natural processes.

I might add another piece of evidence against the Urey-Miller scheme, and that is the total absence of any evidence in the stratigraphic record of conditions other than those now pertaining. No matter how old the rocks are supposed to be, the pre-Cambrian sedimentaries and metamorphic are composed of fragments of older rocks which seem to be the same as those now present.

W. W. Rubey[17] in a discussion of Stanley Miller's paper on "Formation of Organic Compounds on Primitive Earth" was quoted as concluding that the ocean and the air were formed as products of degassing of the interior of the earth. Evidence for volcanic activity is found in the earliest rocks. Gases associated with present-day eruptions are H_2O, CO_2, N_2, CO, H_2 and S. Condensation of such a mixture would lead to an atmosphere of CO, N_2, H_2 and small amount of $H0_2$ and $C0_2$. Where is Miller's NH_3 which is vital to his scheme?

So all this speculation becomes good clean honest fun, and the chemistry becomes examples of beautiful, clever synthesis of organic compounds with no life or near life yet having been created. Even if a system, classifiable as living, ever is synthesized, man will not have proved that this is the way that the first synthesis was executed. He will only be mimicing the processes of nature, that is, he will be walking in the footsteps of the Creator.

Evolution and Paleontology

The question in many minds at the moment is probably. What about geology and the fossil evidence? I think that at the beginning of this phase of my analysis I would submit that the question of the age of the earth is independent of the question of creation versus evolution, and I will so consider it. I know a number of individuals who will take the geological calendar as commonly presented today, but who nevertheless do not accept any part of the theory of evolution. One of the best examples was Douglas Dewar, recognized as one of the most effective proponents of creation.

In his *Transformist Illusion* he takes the geological calendar as read, but throughout the book he will obviously have no part of evolution. What is remarkable is that Dewar originally in his college years and for a while thereafter, was an evolutionist, but as he became more knowledgeable in the morphology and physiology of birds in India, he more and more was convinced of the fallacy of the theory of evolution. So by the time he returned to England he became a prominent voice of the protest against evolution.

Fossils are facts of life. The shells and bony structures that have been uncovered are real, as are such things as tracks, imprints, casts and molds. So they must be dealt with as actualities and not as figments of the imagination. However, the reader will bear in mind, that how they got to their resting place, under what circumstances they lived, as well as when they lived, are all subject to interpretation and difference of opinion.

A beautiful and complete series of fossil shells, may by some be considered to provide an excellent evolutionary series in which one form grades into another. However, such a change in shell structure may be simply an indication of a change in environment, a more or less acid condition of the water. Dr. C. Emiliani, has observed that temperature changes in the ocean, will affect the coiling of a shell from right to left. I was present in a group in which Dr. Fagerstrom, of the University of Nebraska, reported that certain foraminiferan forms altered their shells in response to pH changes in the water they were living in.

So the very real question can be raised, Are these really evolutionary changes, or are they simply responses to environmental changes? What I wish to emphasize here is that the evidence from paleontology is not absolutely conclusive, and can never be so in itself, because it must always be incomplete, not only because it may be geologically imperfect at any given time, but because the picture it gives us of the organisms concerned is necessarily only a partial one.

Among the plants, the order of appearance of the fossils is anything but an order of progression from simplicity to complexity. In fact, in recent years due to the development of palynology, the study of microfossils in the form of spores in the rocks, this picture has become even more complex. According to the evolutionary theory, we would expect to find liverworts and mosses following the algae as among the most primitive of plant forms, since they are the simplest of all plants that are considered to be archegoniate.

But unfortunately it has been observed that there is no geological evidence whatsoever that can make the delineation of the origin of bryophytes anything other than a hopeless one. This is probably the reason why in the various botany courses I have taken, the subject of evolution usually hasn't even been mentioned.

A new field of study in paleontology is called palynology. This involves the study of fossil pollen grains or spores of plants. Often this is the only part of the plant remaining as a fossil. Spores are sculptured uniquely, so that they can be compared and identified as to genus in many cases.

Recent findings in this new field have thoroughly confused the evolutionary picture with respect to the plant world, in my opinion. Pollen grains have been found in Lower Devonian, Silurian and Cambrian rocks which would indicate the presence of vascular plants at the time of deposition of these rocks.

In addition to the presence of pollen grains, other difficulties have arisen. S. Leclercq of the University of Liege, Belgium, reports, "a marked discrepancy observed between two floras so close in geological time as the Middle and Lower Devonian is difficult to reconcile. The absence in Lower Devonian of plant impressions positively related to any of the very differentiated plants of the Middle Devonian is astonishing." ("Evidence of Vascular Plants in the Cambrian," *Evolution*, Vol. 10, June, 1956, pp. 109-113.)

Daniel I. Axelrod also reports that the oldest land plants now known are from the early Cambrian of the Baltic region, ("Evolution of the Psilophy tales." *Evolution*, Vol. 13, June, 1959, p. 264.) Pointing out that the bulk of the unmetamorphosed Paleozoic and pre-Cambrian rocks are not continental but marine, Axelrod holds that few records of land plants would be expected in that period, at least as far as structures other than pollen grains would be concerned.

However, I would like to draw attention to the fact that the statements made by Axelrod relative to the distribution of the fossil plant forms and their environment apply with equal justice to the animal fauna. He points out the possibility that there were all sorts of land plants that were in existence that are not known as fossils due to the fact that the sedimentary terrestrial deposits are not available.

This then would imply that any missing terrestrial deposits, which might contain the structural fossils of plants, may also contain the fossils of land animals that once lived at the same time as such plant environments. Yet, said animals, according to all current paleontological theories, would not have been evolved at that time. The only problem is that animals do not leave pollen grains, whereas plants do. (Readers will be interested in the article by Clifford Burdick, "Microflora of the Grand Canyon," which appears elsewhere in this Annual-Editors.)

It should be pointed out that nowhere do we find a complete record of deposition through all the geological ages. The complete geological record is made up by plugging in various segments of the record from various parts of the world so as to make up a whole geological column. But there is no locality where you can dig down and uncover a complete geological column from end to beginning. Actually there is no locality where you can even dig down and uncover a complete series such as the horse from *Equus* at the top to *Eohippus* cr *Hyracotherium* at the bottom. Such a series must be made by drawing together fossils from different states, yes, even from other continents.

While one committed to the theory of evolution might refuse to question a phylogenetic tree developed in this way, I submit it still is open to debate. May not many of these forms have lived contemporaneously at different localities, or must the only acceptable explanation be that they succeeded one another? The answer is not carried on labels engraved on the fossils.

Fossil Record Very Incomplete

If you look at the complete picture of life in the rocks, you find some rather peculiar things. Probably one of the most important is the sharp break that occurs between the oldest rocks known as the pre-Cambrian and the Cambrian rocks. Incidentally, all these fossils are aquatic. The first plants were algae on the basis of the remains. All the animals were invertebrates spread over all of the most important phyla, such as sponges, jellyfish, sea cucumbers, starfish, brachiopods, mollusks, and crustaceans, as well as some worms.

Thus, of the great divisions of the animal kingdom, we find that all have been formed by the Cambrian period except the vertebrates, and these appeared in the next or Ordovician

period. One very noticeable and important fact bearing on the theory of evolution is made evident. Amongst these earliest fossils, we find that all the phyla appear in the rocks fully formed: i.e., possessing the complete bodily plan of construction typical of their phyla. For example, the earliest crustacea are undoubtedly crustacea, the earliest mollusks are undoubtedly mollusks, etc. As has been noted by any number of paleontologists, the phyla appeared separately, as it were, in most cases, giving among their fossils no indications of their origins from other phyla.

If evolution were true, then these phyla should have evolved one from the other in an increasing scheme of complexity and diversity. We should find them grading into one another, at least to a much greater degree than they do at present. We should find fossils which connect the phyla unmistakably, but to date none have been found in the early rocks. Even when we deal with the vertebrates which supposedly appeared last among the animals, we can find no true connecting link with previous phyla. As a result there is no agreement regarding their origin.

A search of the literature in the last fifty years will show that the vertebrates have been derived from nearly every one of the invertebrate groups, except possibly the protozoa. I think this sudden appearance of all the phyla without any transitional forms is a most powerful reason negating a theory of evolution from amoeba or unicellular form to all the various representative present forms, Arnold Lunn once wrote, "Faith is the substance of fossils hoped for, the evidence of links unseen"[18]

Simpson has said,

> the paleontological evidence for discontinuity consists of the frequent sudden appearance of new groups in the fossil record, a suddenness common to all taxonomic levels and nearly universal at high levels. Since the record is, and must always remain, incomplete, such evidence can never prove the discontinuity to be original.[19]

But this is certainly strongly suggested, if we are limiting ourselves to facts and not one theory. Actually, I would think that if the type of origin of new forms suggested by the known fossil record were to be named, it would of necessity be called origin by creation.

D. D. Davis, in 1949, commented on the gaps in the geological record. He held that the sudden emergence of new types, for example, families in order, has given real trouble of late. Davis mentions that many German morphologists question the validity of evolution, and both he and Simpson have mentioned such paleontologists as Schindewolf and Kuhn who have felt this way. Davis also said, the facts of paleontology conform equally well with other interpretations that have been discredited by neobiological work, for example, divine creation, innate developmental processes, Lamarckism, etc., and paleontology by itself can neither prove nor refute such ideas.[20] I agree, but let it be said that Davis still has faith in evolution.

Further, Oswald Spengler noted the following regarding the fossil record:

> There is no more conclusive refutation of Darwinism than that furnished by paleontology. Simple probability indicates that fossil hoards can only be test samples. Each sample, then, should represent a different stage of evolution, and there ought to be merely 'transitional' types, no definition and no species. Instead of this, we find perfectly stable and unaltered forms persevering thru long ages, forms that have not developed themselves on the fitness principle, but appear suddenly and at once in their definitive shape; that do not thereafter evolve towards better adaptation, but become rarer and finally disappear, while different forms crop up again. What unfolds itself in ever-increasing richness of form is the great classes and kinds of living beings which exist aboriginally and exist still, without transition types, in the grouping of today.[21]

Another difficulty of the fossil record is what might be termed 'skipping,' It was Dana who mentioned land snails of the Carboniferous period, which disappeared from the record, not to reappear till the Cretaceus period, after which they persisted into present times. Dana also mentioned scorpions of the Upper Silurian, which then disappeared until the Carboniferous. At this time they return in the fossil record, along with spiders, which both disappear after the Cretaceus, not to reappear until the Tertiary period.

In 1911, Smith mentioned the shrimp, *Anaspides*, which has not been found as a fossil in any rocks since the Carboniferous, but appeared in his day in mountain streams in remote Tasmania.

Finally, you may recall the coelacanth or lobe-finned fish, *Latimeria*, which belongs to a group that was thought to have become extinct in the Devonian period. From the Devonian to the present day, not a single fossil of this form has been found in any rock. But by the end of 1958, nine had been found in the ocean off the island of Madagascar. Incidentally, its present apparent deep-water habitat ought to cause some rethinking of the formation of rocks that contain lobe-finned fossils.

Of the early Paleozoic, 90 per cent of the rocks are depositions in shallow seas, with the remaining 5 per cent those of coastal plains and deltas. We might well ask where is the record of the land? What plants and what animals lived on the land at that time? In view of the findings of palynology regarding spores of vascular plants in the Cambrian, these become even more legitimate questions. But all the paleontological reconstructions seem to be confined to marine environments. Through the late Paleozoic, the percentage distribution isn't much different.

In the Mesozoic we find plenty of reptiles; and in these rocks we find a greater percentage of terrestrial deposits, which represent the environment of the reptiles. But does this necessarily mean that there were no reptile forms living through much of the Paleozoic on the same land that was supporting the growth of the plants that produced the spores? I am fully aware that this is paleontological heresy.

Specific Points of Concern

I am bothered by the insistence on the principle "the present is the key to the past," and the principle of either uniformity or uniformitarianism. When I look at deposits such as the bone beds in western Nebraska which consist of a remarkable number of various mammals whose bones have become completely disjointed and are one big jumbled up mess that reaches a layer five to six feet thick, I ask myself, How could this have come about? I could add the islands of almost sheer bones that are described as existing in the sea north of Siberia. Include also the quick and sudden burial of lions and mammoths in Alaska, that are now being uncovered by gold mining operations.

I am bothered by densely packed layers of shells alternating with almost completely fossil free layers that are found in the Greenhorn limestone in Kansas and Nebraska. Above all I am disturbed by the cyclothen explanations that I read in all the geology books to explain the coal beds, and then I find innumerable cases of tree trunks fossilized or coalified, which pierce through successive layers in terms of tens of feet. And I could give many more instances. Despite the fact that catastrophism is ignored by most geologists, I am afraid that for me these instances and others that I could add spell catastrophe rather than slow even deposition.

I am bothered when I read glib descriptions of equable paleo-climates over the whole world in terms of our present day solar relationships. I know that when you have a spherical body interposed in the path of parallel energy rays, you can't escape a climatic zonation due to the sphericity. There is some factor here that is not taken into account.

I am disturbed when paleomagnetism is referred to airily, and complete reversals of the earth's magnetic field are postulated, which seem to be supported by sound evidence. But I ask myself what kind of circumstances brought this about, and above all what kind of associated phenomena have been completely left out of consideration? What force could have conceivably reversed the whole magnetic field of the earth? Now that we know that the radiation belts are involved in such a field, what kind of storms would have accompanied such a reversal?

Questions such as these and the failure to find reasonable answers drive me to suspend judgment on the picture that is painted in texts dealing with past conditions. I have no quarrel with the various rock layers as they are diagramed in texts. If there has been drilling of wells along a line, then the cores would present factual evidence as to how this part of the earth's upper crust is composed. But I may be pardoned, if I express considerable skepticism when a set of quiet unnoticed activities is postulated as the means whereby these various layers were formed and laid down.

What About Human Evolution?

A final question in the minds of many is probably, What about human evolution? From the evolutionist's point of view, man has evolved from an ape form known as *Ramapithecus.* This has been found in India in the Siwalik Hills. Current opinion would seem to hold that this form is dated as Miocene. All the material that is available currently seems to be jaw and tooth material. From this point on to that rock level known as the Pleistocene, there is absolutely nothing to go on as far as fossil evidence is concerned.

In explanation, it is held that the habits of anthropoids do not favor fossilization. In this connection Ernest Mayr[22] has some interesting things to say. For one, "Logically it is possible to conceive of a situation in which we would be certain that man has evolved (from the primates) but (we) would know nothing about the actual history of this evolution" (p 163).

From a standpoint of faith in evolution, Mayr says, "Our not very remote ancestors were animals, not men" (p 287). On the other hand, speaking from the scientific standpoint, Mayr also says, "Man's recent history is shot through with uncertainties" (p 168). And on another page "there is not merely one missing link" but a "whole series of grades of missing links in hominid history" (p 637).

Be that as it may, there has been a profound change in outlook on the subject of sequence of human fossils. All human fossils today are

put into one genus, namely the genus *Homo*. This is correcting a rather unfortunate habit in the past that resulted in far more name forms than were justified. Dobzhansky[23] says on this matter,

> A minor but rather annoying difficulty for a biologist, is the habit human paleontologists have of flattering their egos by naming each find a new species, if not a new genus. This causes not only a needless cluttering of the nomenclature but it is seriously misleading because treating as a species what is not a species beclouds some important issues.

The result of the compression is that a common current classification groups all hominid fossils into the following three categories: (1) The first is *Homo transvaalensis*. This group is also sometimes referred to as *Australopithecus* species, either *africanus* or *robustus*. *(2)* The second form is known as *Homo erectus*. This form has two varieties, one being *erectus* and the other *pekinensis*. *(3)* The final form is *Homo sapiens*. This form also has two varieties, one being *neanderthalensis* and the other *sapiens*.

Today these forms are all placed in the same genus-Homo and referred to as hominids because they all show upright carriage, bi-pedal locomotion, and essentially human tooth and jaw structure. This question of what is a human being, particularly when you are just dealing with the skeletal parts, is somewhat of a problem. It should never be forgotten that paleontologists are dealing with a very incomplete organism.

Arbitrarily it is generally assumed that if there is evidence of controlled use of fire and the use of tools accompanying the remains, then such remains ought to be classed as human. There are always the interesting questions, Were these tools and fire used by the fossil forms present, or Were these used by another form which existed with the fossil form, but of whom there are no fossils as yet found? Behavior cannot be discerned in man's ancestry, for behavior leaves no bones.

Also, I think anthropologists are wary today of equating size of brain and quality. The brain size varies among all mammals. It certainly varies in human beings. The average capacity of the modern American man is held to be about 1400 cubic centimeters. And yet Anatole France had a brain capacity of 1,000-1,200 cubic centimeters depending on whom you are reading, while Jonathan Swith had a brain capacity twice as great. It is generally agreed today that the variation of *Homo sapiens* will run from somewhere close to 1200 to about 1500 cubic centimeters whereas Neanderthal man ran as an average in excess of this, generally having a larger brain than modern man. His range, however, was from 1300-1425 cubic centimeters. *Homo erectus pekinensis* specimens range in brain capacity from 900-1200 cubic centimeters, and *Homo erectus* runs from 770 - 1000 cubic centimeters.

The brain case is considered to be a very human looking feature of the *Australopithecus* forms, The brow ridges are heavy, but no more so than in some human fossils and even a few modern skulls. The mastoid process is present, and it is conical as in man. This is considered to assist in anchoring the muscles that hold the skull erect and therefore it is assumed that the Australopithecines had a human rather than an ape-like neck. However, the brain size seems to have run about 450 to a speculative 600 cubic centimeters. If you take the 550 maximum which is the average estimate of most anthropologists, then you have what Vallois, the noted French anthropologist, calls a Rubicon. This 200 cubic centimeter gap has not been crossed by any fossils to date.

Not too long ago it was rather firmly held that there was a direct line of human evolution running from some unknown anthropoid precursor to the Australopithecines to Java and Peking man to Neanderthal to Cro-Magnon to modern man. This beautiful phylogenetic line has fallen by the wayside. Several factors have contributed to its demise. It has recently been admitted by Robinson, Leakey, and others, that the Australopithecines can no longer be viewed as the oldest known relatives of *Homo sapiens* because more human (less brutalized) forms have been discovered who lived simultaneously with them. It was in 1963 that Dr. Leakey reported the find of a human pre-Zinjanthropus form which he named *Homo habilis*. At that time he suggested that all works on anthropology would have to be rewritten, including his own, since *Homo habilis* for practical purposes was very similar to modern man.

Brown and Robinson discovered in 1949 some human remains in Swartkraus. These consisted of two mandibles. Dr. J. T. Robinson, of the Transvaal Museum at Pretoria, South Africa, has written an opinion of this discovery of *Telanthropus*, which claims them as a superior race, definitely human, which, after invading the sites where the more inferior South African Australopithecines lived, led to their extinction by more intelligent manufacture and use of weapons. Dr. R. J. Mason,[24] who is a research officer of the Archaeological Survey of the Republic of South Africa, is of a similar opinion. Carleton Coon also refers to them as human.

One of the most fascinating developments also has been the finds of Neanderthals in the caves

of Skhul and Tabun at Mt. Carmel. In Tabun you find more modern forms apparently predating the classical Neanderthal type. While the Tabun population was being specialized in a Neanderthal direction, the Skhul population was becoming less specialized. This has led the French paleontologist John Piveteau[25] to state, "being torn from the same layer as *Homo sapiens*, he (Neanderthal man) suffered, in his body, *a veritable regression;* but one recovers in the psychism of this physically degraded man the mark of his human origin." (Italics added.)

In this same work, Piveteau makes a statement on page 50 which is being held by a number of other individuals, and has previously been referred to, namely that the dimensions of the brain cannot furnish any indication whatsoever as to its functioning. It should also be mentioned that the possibility exists that deleterious gene mutations and recombination could bring about a decrease in brain size, even tending towards microcephaly. These would also bring about facial feature changes. Certainly these possibilities ought to be considered.

What are we then to do with this material on human evolution, of which I have given just the bare sketch? To deny the existence of the fossils, is wrong. They do exist. However, we can look at these now, in the light of the evidence from the Neanderthal situation, at Skhul and Tabun, and ask ourselves are these animals on the way to being men? Or are these men who have been excessively brutalized and degenerated, actually a sort of a devolution, that resulted finally in extinction? This is the considered opinion of the late Dr. de Wit, formerly head of the department of zoology at the University of the Orange Free State in the Republic of South Africa. (See J. J. Duyvené de Wit, "Reflections on the Architecture of the Organic World and the Origin of Man–A Critical Evaluation of the Transformist Principle," *Philosophic Reformata*, 29e Jaargang, 1964. This may be obtained from J. H. Kok N. V., Kampen, The Netherlands.)

It is true that this overall application of the Neanderthal proposition is not subscribed to by the vast majority of the paleontologists. However, it might be pointed out that prior to the discoveries of Skhul and Tabun, any supposition that Neanderthal was a degenerate form of more modern human types would have been laughed out of existence. So we are faced again with the situation—here is the evidence. Which way shall it be interpreted?

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