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by

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Proper Areas of Activity for Science Theology

The topic of our essay, *The Christian and Science*, reflects a continuing concern on the part of Christians as to the stance which they are to properly take over against science in general and the evolutionary theory in particular. It does not indicate in any way an anti-intellectual attitude on the part of the Christian church and specifically the Lutheran Church-Missouri Synod with reference to advancements of modern science. May it be reemphasized in the very opening paragraph of the essay that the Christian properly regards science as a gift of God in that it represents a carrying out of God's command given in Genesis that man should subdue the earth. Science is, after all, the interpretation of nature. As such it should and does lead the Christian to an ever increasing appreciation of the goodness of God as well as the greatness of His creative and preserving power as it is shown to us in the world of nature.

If this is the case, then one might ask why the question of the relationship of the Christian to science is a matter of concern sufficiently serious to justify the time given an essay at a district convention. Actually there is an area of tension which centers in evolutionary theory, but is really much broader than that. It is perhaps best elucidated by an example. Writing in the *Concordia Theological Monthly*, the theological journal of our Synod, in the June 1964 issue, Professor K. Runia¹ of Australia describes the approach of Rudolph Bultmann. Rudolph Bultmann is one of the most influential of the German theologians and his influence is felt throughout the theological world of our day. Runia states, "Bultmann begins by saying that the world view of the Bible is essentially mythical in character. The world is viewed as a three-storied structure, the earth is seen as the scene of the supernatural activities of God, angels, demons, etc. This whole view is altogether unacceptable to modern man. Modern man has accepted the closed world view of modern science. 'It is impossible to use electric light and the wireless and to avail ourselves of modern medical and surgical discoveries and at the same time to believe in the world of demons and spirits.' Modern man also has a different understanding of man. He sees himself as a 'self-subsistent unity immune from the interferences of supernatural powers.'" In other words, much of modern theology approaches Holy Scripture on the basis that, while it contains theological truth and divine truth, one must demythologize Scripture or eliminate the world of the ancient writers which in our day of modern scientific thought is unacceptable. Placed more simply one may say that many theologians take the position that, in approaching the Bible, one has the privilege of rejecting anything which is found there which is supernatural on the basis that this does not agree with modern science.

This part of the controversy may be settled in fact quite simply and decisively. The fact of the matter is that Bultmann as a theologian does not understand science and the limits in the field of scientific investigation. If he did he would realize that science is limited in its investigations to the things that are physical, the things which can be observed, measured, and subjected to experimentation. Science has no way of dealing with the supernatural whether that includes the miracles reported in Old and New Testament or the activities of evil spirits or whatever supernatural affairs may be referred to in Scripture.

Science is bound by the nature of the situation to deal with the world of natural law of the physical and the biological as we find it and can go no farther than that. Whether or not a personal God exists; whether or not He on occasion has chosen to act directly, in a manner which is described in Scripture as His mighty acts or miracles as we commonly call them; whether or not on occasion evil spirits actually took bodily possession of a man; these are topics on which science has nothing to say. They are in the realm of the metaphysical. They are extra-scientific. That is, by circumstances and by definition they are not in the area of science.

It is true that many a scientist hearing of the miracles in the Bible or of the existence of evil spirits, angels, etc., may say that he finds no basis in his research for believing in such things and hence he prefers not to accept them. This is, of course, his privilege. But even as he cannot disprove their existence, so by the laws of science the Christian cannot prove them. They remain a matter of faith, a matter of accepting them on the basis that the Christian believes that God's Word has told man of these things. Hence he accepts them as true. But he ought not feel, as Bultmann does, that to accept these things as true indicates that he is in the slightest bit unscientific, that he is violating the laws of logic or of scientific evidence. In short, if I proclaim today that I accept the miracles of Holy Scripture as actually having taken place, I am making a statement which is neither scientific or unscientific. It is extra-scientific. It is a matter of faith, even as Hebrews 11 indicates that the belief in creation is essentially a matter of faith.

When one deals, however, with the evolutionary theory and the doctrine of creation, one is entering into an area where there are at least certain points of contact between science and the Bible. The Bible tells us something about the origin of these same factors by means of the approaches and the data available to it. Here we find among some people an attitude which is well characterized by a quotation from the autumn issue of *Dialog*, a new journal of theology. In an article called "Science and Christian Understandings," Stanley D. Beck of the University of Wisconsin says, "To call himself reasonably well educated and informed a Christian can hardly afford not to believe in evolution. Evolution including human evolution, is no longer in contention. Evolution has been demonstrated so thoroughly and even produced experimentally—that it long since ceased to be a matter of opinion. . . . The principle of evolution is now as well established as atomic theory; it is as well documented and verified as any scientific principle known."²

Actually Mr. Beck is making a statement which is more in the realm of propaganda than of scientific fact. It is not true that human evolution is no longer in contention. It is not true that the evolutionary theory has been demonstrated experimentally, if by evolutionary theory you mean the general theory of evolution (and I shall come back to this matter later), and it is certainly not true that the theory of evolution is as well documented and verified as any scientific principle known. However, Mr. Beck does provide us with a sample of the statements which are frequently made and which frankly say that a Christian, who is well educated and well informed, must believe in evolution because science has proved it.

Verbal Inspiration!

This approach is frequently coupled with the demand that we must abandon the doctrine of verbal inspiration in favor of the view that the Bible contains God's Word but was not divinely inspired as we have consistently taught in the past under the doctrine of verbal inspiration. The point is also made that the Bible contains errors and that this is very understandable since it was written by human beings who are prone to error. They claim that it contains God's truth, but God's truth must be discerned from the human error which is in the book. The claim is also made that the Book of Genesis teaches the primitive cosmology of the Hebrews, which was borrowed from their near-eastern neighbors, and contains many statements which we would regard as erroneous in view of our advanced knowledge of the structure of the universe. These are then some of the issues that face the church in our day and where we need to answer certain questions. We are up against the very practical question of what we ought to teach in our Sunday schools and our parochial schools, in confirmation class, and in our adult instruction. What do we hold to be true concerning these matters which are definitely in contention in our church today? Hence it would appear that a topic such as this essay deals with is an appropriate one for our consideration. In the limited time available to us and under the circumstances that surround the question, we certainly cannot hope to settle all of the problems that face us in this area nor do we pretend that either the Bible or science gives us all of the answers to the questions which we like to ask. We do feel, however, that it is essential to establish a point of view which is distinctly Christian in the sense that it is faithful to God's Word and at the same time looks at the issues which confront us.

What Evolution and Creation Do and Do Not Say

It is necessary, first of all, to clear away some of the underbrush. In many instances there is much confusion, inasmuch as people do not understand what is meant by evolution, and they likewise often do not understand what is the import of creation. I am certain that many pastors today who think there might be a possible solution in theistic evolution do not understand it. I am likewise convinced that many individuals who talk in terms of what has been proved in science do not realize that much of what lies in the area of so-called evolutionary theory is not contradictory to creation but is an area where the creation account and the evolutionary theory are not incompatible. We need then to look at these issues and particularly we need some good definitions. First of all, what do we mean by evolution? Frequently individuals take the position that evolution is equivalent to change and that, inasmuch as certainly the fossils have proved that life forms have changed through the years, to that extent evolution has been proved. However, evolution is much more than the matter of change. Evolution as a theory seeks to explain the origin of all life from a one-celled creature that evolved from non-living material on a planet which itself evolved from an unorganized mass of material in the remote past and that

material itself came into existence in some mysterious way in the still more remote past. We sometimes distinguish between micro-evolution, which is change within the various kinds of living organisms, and macro-evolution, which has the wide scope of including the origin of all living forms from previous non-living material.

Regarding creation, it is likewise true that some individuals have equated creation with lack of change and have said that all things exist today as they originally were created, that no changes have taken place and certainly no new species have evolved. On the other hand, there is that doctrine of creation which is compatible with Scripture and is really taught in Scripture, indicating that God created originally certain "kinds" of living organisms including man. But it does not say that there cannot have been change within the limits of the created "kinds" and does not provide us with justification for saying that no new species can be developed.

It is important, then, to recognize that what is sometimes called micro-evolution and the doctrine of creation of the original "kinds" with subsequent limited change to a large extent overlap. It is in the area of macro-evolution and the area of creation where we find the great differences which appear to be unreconcilable. It is thus true that the creationist can accept the facts of evolutionary change and show that they are not incompatible with creation. It is only when the evolutionist asserts that these various changes have added up to the formation of all living existing organisms, including man, from earlier simpler organisms that the gauntlet must be thrown down and the statement made that this is not in accordance with the teaching of the doctrine of creation as we find it in Holy Scripture.

Perhaps it is best, before proceeding any further and particularly before looking at the biblical doctrine of creation in more detail, to clear the air of the idea that many have that the neo-Darwinian theory of evolution is universally accepted as a proven scientific fact. Many laymen and theologians operate under this delusion. As a matter of fact, enthusiastic scientists sometimes make this statement. It is, however, increasingly evident that a not inconsiderable number of scientists challenge the neo-Darwinian theory of evolution and some also challenge the concept of evolution as such. They are not challenging, nor does the creationist challenge, the concept that living forms have changed. They are talking of the broader concept of macro-evolution. One of the more outspoken critics of evolution is the notable English scientist, Dr. G. A. Kerkut of the Department of Physiology and Biochemistry at the University of Southampton, England. In 1960 Dr. Kerkut published a book entitled, *The Implications of Evolution*. Dr. Kerkut devotes his entire book to examining the seven basic assumptions upon which the theory of evolution is based. He concludes his book by stating, "There is a theory which states that many living animals can be observed over the course of time to undergo changes so that new species are formed. This can be called the 'Special Theory of Evolution' and can be demonstrated in certain cases by experiments. On the other hand, there is the theory that all of the living forms in the world have arisen from a single source which itself came from an inorganic form. This theory can be

called the 'General Theory of Evolution' and the evidence that supports it is not sufficiently strong to allow us to consider it as anything more than a working hypothesis. It is not clear whether the changes that bring about speciation are of the same nature as those that brought about the development of new phyla. The answer will be found by future experimental work and not by dogmatic assertions that the 'General Theory of Evolution' must be correct because there is nothing else that will satisfactorily take its place."³

Another critic of evolutionary theory is the Swedish botanist Heribert Nilsson. Dr. Nilsson devoted his life to experiments in which he attempted to demonstrate evolution and to research in various evidences that are supposed to support the theory. He writes, "My attempts to demonstrate evolution by experiment carried on for more than forty years, have completely failed. . . . At least I should hardly be accused of having started from a preconceived anti-evolutionary standpoint. . . . It may be firmly maintained that it is not even possible to make a caricature out of paleobiological facts. The fossil material is now so complete that it has been possible to construct new classes, and the lack of transitional series cannot be explained as due to the scarcity of material. Deficiencies are real. They will never be filled . . . The idea of an evolution rests on pure belief."⁴

Closer to home is Dr. Walter E. Lammerts, Director of Research for Germain's Horticultural Research Division, Livermore, California. Dr. Lammerts, a member of the Lutheran Church-Missouri Synod, has been a practicing botanist during his entire career. He has carried on a great deal of experimentation with the breeding of plants, particularly of roses. He is of the opinion that the observations he has made over his life time of research confirm the concept of creation with variation limited to the created "kinds." He states, "Thus my own Neutron Radiation experiments with roses resulted in hundreds of mutations, some of possible horticultural value. However, without exception all were either weaker or more sterile than the variety radiated."⁵ In brief Dr. Lammerts is of the opinion that the field of botany provides evidence for creation rather than for evolution.

Voices critical of evolutionary theory are heard around the world. Dr. J. J. DeWitt, head of the Department of Zoology of the University of the Orange Free State, Republic of South Africa, recently published an article entitled *The Paleontological Record and the Origin of Man*. He draws the conclusion, "From an unbiased scientific viewpoint, we arrive at the conclusion that paleontological evidence for a development of man from an amoeboid basic stock is absolutely lacking."⁶ Dr. DeWitt surveys also the research in mutations. With reference to the fruit fly, he states "Mutations, and even series of directed mutations, never gave rise to the appearance of essentially new characteristics of generic magnitude. From this, it clearly appears the mutational changes remain structurally restricted to the basic genotype to which the race or species in question belongs. In other words transformation of a given basic genotype into another as a result of a series of one-directional mutations cannot be produced experimentally."⁷ In the entire paper Dr. DeWitt takes the position that the facts of nature are in support of creation rather than of evolution.

Many more kindred statements showing the same critical evaluation by practicing scientists could be produced. In addition to that it would be possible to produce many statements critical of the theory by individuals who happen to be evolutionists but who are not satisfied that the existing theory really sufficiently explains the life forms as we find them today. However, there is no point in continuing this since our desire was merely to illustrate that individuals who claim that everyone who is scientific and everyone who has good common horse sense now accepts the theory of evolution are making a statement which is incorrect and one which is more in the area of propaganda than of factual observation.

However, at this point one may be asking "Well, after all, why are we really so concerned about this? We do not look so carefully at many other areas of science. Perhaps we should let the scientists do their job and let the theologians do their job and let each one operate within his framework without either one saying anything about the activities or the positions of the other?" This is a logical question and deserves an answer.

The Holy Scriptures view man as God's special creation created in His image in righteousness and true holiness. He then fell into sin and as a consequence of his fall is in need of a Savior. By himself he does not have it within his power to please God or to make amends for his fall. His only hope for this life and the life to come is in Jesus Christ.

On the other hand, the theory of evolution starts man at the lower level. It has been well said that the creature whom the Psalmist viewed as a "little lower than the angels, Darwin showed to be but little higher than the brutes." The philosophy of evolution is that man has risen from a lower form of life and hence originally had animal instincts. Thus he originally was no better than an animal in his moral judgment. His conscience, his moral judgment, and his religion are alleged to have developed gradually. That is, man is said by the evolutionary theory to have arisen from the depths and to have gradually climbed to the heights he now occupies in his moral standards. Theodosius Dobzhansky states, "Man represents the highest, most progressive, successful product of organic evolution. . . . Most remarkable of all, he is now in the process of acquiring knowledge which may permit him, if he so chooses, to control his own evolution. He may yet become business manager for the cosmic process of evolution."⁸ It is quite clear that the evolutionary theory says that man is achieving his own salvation and does not need a Savior since God ought to congratulate him for arising from the animal depths.

Theistic Evolution!

There are some who feel that the problem can be solved by resorting to theistic evolution. Theistic evolution is the entire evolutionary theory modified only by insisting that God was behind the process and used evolution as His means of creating. Thus man is thought of as having arisen from animal ancestors but at one point becoming truly human. There are many who hope that this compromise will effect the solution to the entire problem. However, theistic evolution does not win the highly valued intellectual respectability which some think is gained. Nor does it change the basic philosophy of evolution that man is becoming ever better and better and is rising rather than that he is a fallen creature who needs God's help in Christ. Leading evolutionists spurn every type of super-naturalism as indicating a clinging to an outmoded way of thought and therefore is foreign to the basic approach of evolution depending on chance and natural selection. This is indicated clearly by Kirtly Mather in *Science Ponders Religion*. Dr. Mather says, "When a theologian accepts evolution as the process used by the creator, he must be willing to go all the way with it. Not only is it an orderly process, it is a continuing one. The golden age for man—if any—is in the future, not in the past. . . . Moreover, the creative process of evolution is not to be interrupted by any supernatural intervention. The evolution of the first living cells from previously existing non-living materials may represent a quantum-jump rather than an infinitesimal step along the path of progress, but it is an entirely natural development. In similar fashion, the emergence from ancestral anthropoid apes of human beings possessed of spiritual capacities enabling them to display an awareness of the emergence of the first air-breathing quadrupeds from their aquatic predecessors. The spiritual aspects of the life of man are just as surely a product of the processes called evolution as are his brain and nervous system."⁹

As Lutherans we are bound by what the Lutheran Confessions say about man and his nature as a true exposition of Scripture. The Formula of Concord is particularly thorough in its statement on original sin. In the Epitome, section I Of Original Sin (Triglotta, p. 778) we read, "We believe, teach, and confess that there is a distinction between man's nature, not only as was originally created by God, pure and holy without sin, but also as we have it (that nature) now after the fall, namely between the nature (itself), which even after the fall is and remains a creature of God and original sin, and that this distinction is as great as the distinction between a work of God and a work of the devil." In the Formula of Concord, section I Of Original Sin (p. 867 of the Triglotta) states, "For although in Adam and Eve the nature was originally created pure, good and holy, nevertheless, it was as though Satan had created or made some evil substance and mingled it with their nature. But since man, by the seduction of Satan through the fall has lost his created hereditary righteousness according to God's judgment and sentence, as a punishment, human nature, as has been said before, is so perverted and corrupted by this deprivation or deficiency, want, and injury, which has been caused by Satan, that at present the nature is transmitted, together with this defect and corruption (propagated in a hereditary way), to all men who are conceived and born in a natural way from father and mother." In the Smalcald Articles, part III, Article I, (Triglotta,

p. 447), we read, "Here we must confess as Paul says in Romans 5:12, that sin originated and entered the world from one man Adam, by whose disobedience all men were made sinners and subject to death and the devil. This is called original or capital sin." Thus, consistently, the Confessions regard the fall of Adam and Eve from their holy state of created righteousness as a real historical fall even as it is taught in Scripture. Nowhere in the Confessions is there any leeway for interpreting the origin of man from an evolutionary point of view, that is, from the point of view that he arose from the animal and was not originally perfect and holy. Rather, it is quite the reverse. In harmony with Scripture, the Confessions point out that man was created in true righteousness and then fell into sin in the manner described in Genesis 3.

Genesis Creation Account Compared to Babylonian and Other Creation Accounts

But it is time now to look more closely at the Genesis account itself. Many attempts have been made in various ways to make it seem reasonable to interpret the historical account of the creation of the world, of living things, and of Adam and Eve in a way which is not historical or, as it is sometimes said, not literal. Among the more dangerous approaches is the assertion that in Genesis we after all have the account of the creation of the world as seen by the ancient Hebrews in their day. It is said to have behind it the important theological truths of monotheism, that there is one God, that God created and that matter did not originate by itself. Other than this, all other matters are said to be a mere repetition of the Babylonian or Near-Eastern creation mythology.

We would reject this approach on several bases. First of all it ignores the import of passages such as II Timothy 3:16 which says that all Scripture is inspired by God and II Peter 1:21 which states no prophecy ever came by the impulse of men, but men moved by the Holy Spirit spake from God. Likewise also Acts 24:14 where the Apostle Paul says, "I worship the God of our fathers believing everything laid down by the law or written in the prophets." In other words, the doctrine of verbal and plenary inspiration very clearly indicate that the men who wrote Old and New Testament were not operating solely and alone on the basis of their own knowledge but were guided by the Holy Spirit. To say that the Holy Spirit then led them to write in such a way that erroneous ideas of mythology of their day in regard to the origin of the world came into play would be to violate the concept of inspiration.

In the second place, the comparison of the Hebrew account with the Babylonian polytheistic creation account and kindred accounts is enough to convince one that the biblical account is pure and true as contrasted with the corrupted account of the neighboring nations. In the Babylonian cosmology there are gods of many kinds struggling and at war. Apsu is the male god and the god of sweet waters. Tiamat is the female god of salt water. From their union all other gods came. Ea, one of their offspring, slew Apsu and made fresh water bodies from his carcass. Tiamat sought revenge and was finally slain by Marduk, the local god of Babylon. Marduk divides her carcass into two halves. The firm-

ament was made from her top half, the earth from the bottom. Finally plants, animals, and man were made.

Such incidental similarities as exist, for example, light coming early in the process, do not prove the literary dependence of the biblical creation account on the Babylonian. Rather, it would appear to point to a corruption of the original story which existed among all peoples in the beginning and which persevered in corrupted form among the Babylonians.

The dissimilarities between the accounts strikingly demonstrate the purity and independence of the biblical account. Dr. Paul Heinisch, the Catholic scholar, lists ten basic differences between the accounts. Some of these basic dissimilarities are:

1. The Genesis account says God created matter; the Babylonian claims matter is eternal.
2. In Genesis God speaks and it is so. In the Babylonian myth, chaos opposes God.
3. The Babylonian account is heavily polytheistic. The stars are gods, Gods battle. Genesis is strictly monotheistic.
4. Genesis has seven days in its account. In the Babylonian account seven occurs merely as the number of tablets on which the story is written.
5. Finally, in the Babylonian 'Enuma Elish' epic the purpose is clearly to prove the world belonged to Babylon. Marduk, the city god, displaces Ea, the god of wisdom, as creator.¹⁰

A mere reading of the two accounts is sufficient to establish the vast difference between the two accounts. The Genesis account, divinely inspired, stands sublime as Everest. It is completely free of the ridiculous mythology of the ancient cosmology of the Babylonians. It commands the attention and reverence of our world even as it did that of ancient past.

In a recent book entitled, *The Monuments and the Old Testament*, Price, Sellers, and Carlson state that the resemblances that do exist between the creation accounts of the other Near-Eastern peoples and the Israelites as well as the Flood accounts are due to a common inheritance, since each nation handed on from age to age records concerning the early history of the race. They state specifically, "All religions are reducible to a small number of facts. These facts are either individual or common. Of the common, some are undoubtedly due to the common inherent nature of man, but others are just as clearly explicable only as an inheritance. Early races of men took with them, wherever they wandered, their primeval traditions. With the varying latitudes and climates, they modified these traditions in the course of the ages, and present them to us today in their different dresses. One ancient religion did not borrow these universal traditions from another, but each possessed primitively these traditions in their original form. The Genesis record is the purest, the least colored by extravagances and the nearest to what we must conceive to have been the original form of these accounts."¹¹

Von Rod also states, "It is astonishing how sharply little Israel worked itself off from an apparently overpowering environment of 'KOSMOGONISCHER, JA THEOGONISCHER, myth. The text here (i.e., Gen. 1:2) speaks not of a primeval procreation—any mysterium, from which the deity springs, not of a 'creation' battle between mythically personified powers, from which the cosmos arises, but of one who is neither warrior nor procreator, to whom rather the predicate of Creator is alone appropriate."

In this connection it is interesting that the prominent German theologian von Rod agrees in concluding that the Genesis account is free of the half-mythological ideas of the cultures surrounding it. Von Reed indicates that there are certain relationships in terminology but that "the actual mythological significance is long lost in our text, as is in fact already evident in the collation of concepts out of entirely different circles of mythological ideas. We must reject the assumption, then, that the Priestly writing, in explaining the chaotic primeval state, must necessarily have reached back to foreign and still half-mythological ideas. The concepts employed in verse 2 are free from any mythological connection and in Israel were long since crystallized into cosmological key-words which belong inalienably to the Priestly community."¹²

Nonetheless, we sometimes find various radical critics striving to impose a cosmology on the Bible in what has been described by Bernard Ramm as an "artificial, stilted and abortive effort." One widely finds in various Bible dictionaries, commentaries, and encyclopedias statements such as the following: "In the Scripture the flat earth is founded on an underlying sea; it is stationery; the heavens are like an upturned bowl or canopy above it; the circumference of this vault rests on pillars; the sun, moon, and stars move within this firmament of special purpose to illumine man; there is a sea above the sky; 'the waters which were above the heavens', and through the 'windows of heaven' the rain comes down; within the earth is Sheol, where dwell the shadowy dead; this whole cosmic system is suspended over vacancy; and it was all made in six days with the morning and an evening, a short and measurable time before. This is the world view of the Bible."¹³

Actually this distorted picture of biblical cosmology is rather old. It was made by Schiaparelli as early as 1903. Bernard Ramm in his *Christian View of Science and Scripture* deals with this matter very well. Ramm makes the point that Genesis is a record of the creation of the world and given in the language of the common man without teaching any particular cosmology at all. He quotes Calvin to the effect "For to my mind this is a certain principle, that nothing is here treated of but the visible form of the world. He who would learn astronomy and other recondite arts, let him go elsewhere. Moses . . . states those things which are everywhere observed, even by the uncultivated, and which are in common use."¹⁴ Ramm then points out that many Semitic scholars have taken radical critics to task for imposing on the Bible a "stilted, artificial cosmology which is nowhere clearly or systematically taught in Scripture." Gaenssle, a Semitic scholar, cites Isaiah 40:22, Psalm 104:2 and Isaiah 34:4 and asks, "Can anyone with these texts before him seriously and honestly believe that the writers of these words entertained the crude, inept notion of a metallic

canopy above their head?" With reference to the seas he concludes, "Consequently, when the earth is said to be founded on the seas and spread out upon the waters, there is no reason to assume that the psalmist is singing of an invisible ocean on which the earth rests or is spread out, but only of earthly waters on which the earth touches and over which it is elevated." And finally with reference to the Hebrew word "tehom" which is used in Genesis, Gaenssle says, "The upper terrestrial ocean satisfies all requirements, and it lies below or beneath in the same sense as the Dead Sea lies under Mount Pisgah, the land of Moab."¹⁵ Ramm also points out that the scholar Maunder believes that such verses as Job 22:14, Isaiah 40:22, Proverbs 8:27, and Job 26:7 amply prove that the Hebrews thought of the earth as round and suspended in nothing.¹⁶ The expression "He stretched out the north over empty space, and hangeth the earth upon nothing" (Job 26:7) is taken by Maunder to mean the northern circumpolar constellations which stretch out indefinitely. The notion that the earth rests on something is impossible and the only conclusion is that the earth hangs on nothing. Ramm adds finally that the pillars of the earth mentioned in Job 9:6 are the rocks which bear up the surface of the earth. The rakia (firmament) is the space above the earth on which clouds float and the heavenly bodies pursue their courses. He concludes that it is improper to construct a so-called modern or scientific cosmology from the Bible and it is also improper to try to claim that it is modeled after one of the Babylonian concepts. He states, "In that there is no systematic exposition of a cosmology in the Bible, and in that the Bible abounds with either popular expressions or poetic expressions, it is not capable of a systematic construction with reference to a cosmology."¹⁷

In other words, the claim that the Bible is full of the erroneous cosmology of the people of the ancient Near-East is not capable of being demonstrated and ought not be accepted. Certainly, one cannot say that the account of creation in Gen. 1 and 2 reflects these ancient cosmologies and therefore is to be immediately set aside.

Is the Genesis Account Poetical?

Another approach which is receiving a considerable amount of attention today is to indicate that the Genesis account of creation is saga or epic or poetical. The claim is that it is true but it is not historical and is not to be taken literally. In evaluating this position it is evident that Genesis 1 and 2 are not in the form of Hebrew poetry as we find it in the Psalms, Proverbs, and other poetic books. It is in the true form of prose. It is true that there are certain very elevated concepts which are included in Genesis 1 and 2, but the presence of such terms does not make it poetry. Prose is capable of presenting historical events in a very colorful fashion without becoming poetry or indicating in some instance that the account is non-historical.

The statement is also made that the Book of Genesis in the early chapters contains certain anthropomorphisms. This means that terms are applied to God which are taken from the existence and manner of operation of man. For example, God is represented as speaking. He has a conference in which He

says, "Let us make man in our image." He forms man of the dust from the ground and breathes into his nostrils, etc. Again the existence of such anthropomorphisms as figures of speech do not render the account non-historical and do not mean that the events which are described did not really take place. Dr. Edw. J. Young in a recent article in the *Westminster Theological Journal* states, "If the term 'anthropomorphic' may legitimately be used at all, we would say that whereas it might apply to some elements in Gen. 2:7, it does not include all of them. In other words, if anthropomorphism is present, it is not present in each element of the verse. The words 'and God breathes' may be termed anthropomorphic, but that is the extent to which the term may be employed. The man was real, the dust was real, the ground was real as was also the breath of life. To these elements of the verse the term anthropomorphism cannot legitimately be applied. Nor can everything in Gen. 8:21 be labeled with the term 'anthropomorphic.' We need but think for example of the man and the woman in the coats of skin." Young continues "From the presence of anthropomorphic words or expressions in Genesis 1, it does not follow that the mention of the days is anthropomorphic nor does it follow that the mention of the days are to be understood in a topical or non-chronological order rather than chronologically. If the days are to be interpreted non-chronologically, the evidence for this must be something other than the presence of anthropomorphisms in the first chapter of Genesis. The occurrence of anthropomorphic language in Genesis 1 in itself, if such language really does occur, sheds no light one way or another upon the question whether the days are to be understood topically or chronologically. For that matter even the presence of figurative language or a schematic arrangement by themselves do not warrant the conclusion that the days were not chronological."¹⁸

Roman Catholic scholars are in some instances interested in pointing out that there is a certain framework in Genesis 1 in terms of the six days of creation and the things that were made on those days. They are attempting to say that the account is verbally inspired but that you cannot take it as referring to a chronological sequence of what really took place. Actually this goes back to a professor at the University of Utrecht in Holland in 1924. Noordtzij espoused the idea of the parallelism of the days at that time. He pointed out that day one deals with the creation of light; whereas on day four the light bearers, that is the sun, the moon and the stars, were created. Day two deals with the firmament and the dividing of the waters; whereas day five deals with the filling of the waters by animal life. Then, in addition to this, day three deals with dry land while the corresponding third day of the second period, that is, day six, deals with the filling of the dry land with inhabitants by means of the creation of animals and other forms of life including man.

There is no doubt a certain amount of schematic arrangement is evident in Genesis. The question is whether or not this is a literary device or whether or not it points to a certain order in God's approach to creation. It does not necessarily follow what is stated in a given order is figurative or is describing something which did not actually happen.

Actually, however, Noordtzij's scheme does not really hold up on thorough analysis. In other words, the relationship of day one to day three, day two to

day four, and day three to day six breaks in several instances. This is important enough to merit attention at this point. For example, the light bearers are placed in the firmament according to Genesis 1: 14 and 17 on day four. So day four should really correspond to day one on which light was created. However, they are placed in the firmament on day four; the firmament was not made until day two. This in the parallelism is imperfect in that day four refers to things made on both day one and day two.

Another example is in the fact that the fish were commanded to swim in the seas on day five but the seas were not made until the third day which should correspond in the parallelism to the sixth day instead of the fifth day. There are other points in the account which indicate the same lack of parallelism.

In the article referred to previously, Dr. Young, himself a top-ranking Hebrew scholar, points out that although the account of creation in Genesis 1 and 2 is written in exalted semi-poetical language, it nevertheless is not poetry. He lists the following points:

a. The characteristics of Hebrew poetry are lacking—that is there is an absence of parallelism.

b. The story is divided into paragraphs but they are not the characteristic structured poetic strophes of Hebrew poetry.

c. The account in Genesis 1 and 2 is the prelude to a severely historical book which is labeled genealogical. The account in Genesis 1 is tightly linked with the words in Genesis 2, verse 4a, which states, "These are the generations of the heavens and the earth when they were created." This is the formula which is consistently used in the Old Testament to point to a listing which is coming in terms of genealogical listing and a listing of accounts.

Young concludes that the account is to be regarded as sober history and he states, "By this we mean it recounts what actually transpired."¹⁹

The Gap Theory!

Still another approach is to regard Genesis 1 and 2 as sober history but to indicate that what God is telling about is really a restoration of a world which he made long before and which was destroyed as a result of the revolt of Satan and the evil angels. II Peter 2:4 refers to God not sparing the angels when they sinned but casting them into hell. Jude 6 says the angels which did not keep their own position but left their proper dwelling have been kept by Him in eternal chains. There are other passages such as Revelations 1:7-9 and Isaiah 14:12-14 which refer to this revolt of the evil angels. Proponents of the gap theory in addition to pointing out this revolt of the evil angels translate Genesis 1, verse 2 in the following way. "The earth had become waste and wild (or formless and empty) and darkness was on the face of the deep." They thus point out that with this translation Genesis tells us that the earth had come to this state of being chaotic from a previous state. This line of theological ar-

gumentation is attacked by the fact that the Hebrew word "hayeth" actually means "was" and not "became." So the proper translation is the earth was without form and void and not "became without form and void." In addition to this, God at the end of His creation story at the end of the sixth day states that everything was good and it is difficult to conclude that He could say this if Satan had at that time already fallen into sin. However, the proponents of the gap theory make the point that in their opinion "hayeth" can mean became and that, when God said everything was good, he was referring to His restoration of the world. Several theologians of the last generation have accepted this, such as Hengstenberg and Franz Delitzsch.

The argument may be that Scripture is silent on this and this is really speculation. However, proponents of the gap theory point to such passages as Jeremiah 4:23 ff. which reads, "I looked on the earth and lo it was waste and void and to the heavens and they had no light. . . . I looked and lo there was no man . . . lo the fruitful land was a desert and all its cities were laid in ruins." Actually, however, this most likely refers to the destruction of Jerusalem because of verse 16, which says "Warn the nations that He is coming, announce to Jerusalem, besiegers come from a distant land, they shout against the city of Judah." Reference is also made to Isaiah 24:1 and 24:21, for example, "On that day the lord will punish the host of heaven in heaven and the kings of the earth, on the earth. They will all be gathered together as prisoners in a pit." But this passage more likely refers to judgment rather than to something previous to creation. One must also consider Isaiah 45:18, which reads, "For this says the Lord who created the heavens (He is God) who formed the earth and made it (He established it. He did not create a chaos. He formed it to be inhabited)." The expression "He did not create it a chaos" seems to contradict Genesis 1:2, which says the earth was without form and void, if they are both speaking of the same period in the creative act. However, the point may be made that Isaiah 4:5 indicates that God's purpose was not to leave it a chaos but so complete the work that it could be inhabited.

At best, however, the proponents of the gap theory have little on which to base their contention that there were inhabitants on the earth before Adam, and that there was a general cataclysm which was then followed by an act of restoration, and it is this restoration which is described in Genesis. However, I am of the opinion that we perhaps ought to study this more carefully than we have in the past to see if there is any substance to it. At any rate, in favor of this consideration is the fact that people who espouse it do abide by a high viewpoint of Scripture and do not attempt to indicate that what is said in Genesis is not a true account of what in fact did take place. Nor are they seeking any type of evolutionary development. They are primarily attempting to account for the apparent great age of the earth.

Progressive Creation!

There are also those who hold the idea of "progressive creation." Not to be confused with theistic evolutionism, this theory holds that God from time to time, when vertical progress in living organisms was called for, created anew. In other words the creative process was spread over long periods of time. This theory depends on the creation days being interpreted as periods. This is a question which we will consider later in the essay.

It is instructive to turn to the rest of Scripture to see what may be learned by way of shedding light on the doctrine of creation. One is struck by the fact that the applications of the doctrine of creation are numerous. Psalm 119, verse 90, 91 and 97 strongly emphasize the sovereignty of God who is the Creator. Jeremiah 10:12 indicates that God's reign is a cosmic one. He says the gods that have not made heaven and earth shall perish. Thou art the same. The God who creates will never change. The wisdom chapter in the Book of Proverbs, the eighth chapter, deals with the wisdom of the all-wise God who is responsible for creation. Zachariah 12:1 points out that the God of the cosmos is the one who formed the spirit of man within him and to whom man owes his origin and all that he is. Amos 4:11-13 indicates that he who formed the mountains has the power to punish sin. Psalm 103, verse, 13 to 19, points out that the Lord whose kingdom is over all is the one who pitieth, who is the God of grace. II Cor. 4:6 speaks of the God who commanded the light to shine out of darkness who has shined in our hearts to give the light of the knowledge and the glory of God in the face of Christ Jesus. It thus compares the creation at the beginning of time with the creation of the new man in our hearts at the time of our coming to faith. There are also mission implications to creation, as found in Isaiah 42:5, and stewardship implications, as found in Psalm 50:10.

By far the most prominent, however, are the references to Jesus Christ, the Redeemer, as being also Creator. Colossians 1:16-17 states, "By Him were all things created . . . He is before all things and by Him all things consist." The opening words of John's Gospel point to work in the beginning of the Word who is Christ and who is Creator. Hebrews 1:2 speaks of "His Son by whom also He (the father) made the worlds."

The Apostle Paul indicates that creation in itself testifies to God. Acts 14:15-17 reports Paul as saying "The living God who made heaven and earth and the seas left not Himself without witness in that He did good and gave us rain from heaven and fruitful seasons." Compare also Romans 1:20, which speaks of the eternal power and Godhead of the Creator.

While these passages do not provide us with any insight into the details of creation, they do mark the doctrine of creation as a vital doctrine for the proper understanding of man as the creature of God, man owing sovereignty to God, man who has fallen short of fulfilling this obligation and who then needs the atonement. The one who redeems, the one who atones, is shown as mighty to do this because He is Creator. Thus we see that creation is not an isolated doctrine but one which is intricately tied in with the other central doctrine of Holy Scripture.

The New Testament, however, does give us certain helpful information regarding the first man and woman. The Roman Catholic church in our day demonstrates as well as any church body an attempt made to preserve the doctrine of creation and at the same time as much as possible, accommodate itself to so-called modern science. Thus it is permissive, although by no means universal, in the Catholic church to believe that God prepared the bodies of the first man and the first woman by a process of evolution. However, the Roman church definitely draws the line at eliminating Adam and Eve or saying that Adam and Eve did not represent two actual real people who fell into sin in the manner described in the third chapter of Genesis. The reason for the strong insistence on the historical nature of Adam and Eve is, of course, found in such passages as Romans 5:12 where Paul speaks of sin coming into the world "through one man and death through sin and so death spread to all men because all have sinned." In verse 17 he says "because of one man's trespass, death reigned through that one man, much more will those who receive the abundance of grace and the free gift of righteousness reign in life through the one man Jesus Christ." Paul speaks in his first letter to Timothy in the 12th verse of the second chapter, "I permit no woman to teach or to have authority over men; she is to keep silent. For Adam was formed first, then Eve, and Adam was not deceived, but the woman was deceived and became a transgressor." In I Cor. 11:7, Paul says, "but woman is the glory of man, for man was not made for woman but woman for man, neither was man created for woman, but the woman for the man." In the light of these passages it is abundantly clear that Paul takes the events of Genesis 1, 2, and 3 as historical, and I can find no defense for doing it otherwise.

Regarding the proposition of theistic evolution that Adam and Eve were two successful mutations and were part of a race of anthropoid-like men who first crossed the border of humanity, Dr. John Klotz of our Concordia Senior College points out the difficulty of this position which is inherent in the Catholic position described above. He states, "There are some theistic evolutionists who recognize this New Testament problem and suggest that only one male and one female were picked out of the evolutionary population to be parents of the human race. Thus a group of beings had evolved to the biological status of *Homo sapiens*. God interfered directly and picked out one male, Adam, and one female, Eve. To these He gave a soul and they became the ancestors of the human race. If this is the case, we might well ask, 'What became of the other anthropoids whom God did not choose to become our parents? Are there people who are biologically *Homo sapiens* who do not have a soul and therefore not truly human? Is it possible that some of our radical racists are correct in insisting that not all races of men are truly human?'"²⁰ What Dr. Klotz is saying is that the proposition that two individuals were selected out of a race of anthropoid humanoids to become the first man and woman is not at all satisfying scientifically nor is it indicated in any way in the Book of Genesis whether Genesis is regarded as poetry or as prose.

The First Man From the Viewpoint of Paleontology

It is interesting, too, at this point to turn to what is the status of the ideas of the first man in the area of paleontology. Actually the entire world of science has been thoroughly shaken up by the latest discovery of Dr. Louis Leakey, the British anthropologist, announced on the 4th of April 1964. Dr. Leakey has for many years carried out excavations in the Olduvai Gorge of Tanganyika, East Africa. He it was who found the so-called *Zinjanthropus* in 1959 and, whose age was determined by radioactive dating to be 1,750,000 years. However, Dr. Leakey has found remnants of a new race which he has called *Homo habilis* which took up residence in the Olduvai Gorge an estimated 1,820,000 years ago. (We are using these days without questioning them at this point for purposes of quotation only.) Dr. Leakey has characterized this new find as having small skulls with hands and feet similar in form and function to those of modern man, and stated the skull of *Homo habilis* "resembles a small skull of *Homo sapiens* (modern man) more than anything else." As a result of this Dr. Leakey stated it may mean that the textbooks "have to be completely rewritten."²¹

Dr. Leakey now believes that the *Zinjanthropus*, which is an ape-like creature which he found formerly, was contemporary with *Homo habilis* and is to be characterized now as not being a tool maker as Leakey originally claimed. The man creature which he found he now believes to have been the tool maker. He also indicated that there is need of a revised definition of what constitutes man. Formerly the borderline of cranial capacity of the skull to be considered man ranged from 700 cubic centimeters to 800 cubic centimeters. Now, depending on the size of the individual, he believes that an individual may have a cranial capacity as low as 600 cubic centimeters and be human or run as high as 1600, that the difference, in brain size is not as critical as once believed.²² The net result of this latest anthropological find is to emphasize how little we know about man as well as to point out that as far back as we can go in terms of finds of early man, man has been man. The finds indicate that man's physical form may have varied, but they do not in any instance connect him with the animal.

The existence of this tremendous variety in the genus *homo* or man has been explained by one scientist, J. J. DeWitt in this fashion, "The *Australanthropines*, just as *Neanderthal* man with their exceptional large brains must be regarded as a devolved, degenerated and brutalized extinct branch of the human genealogical tree. As a result of deleterious mutations and recombinations, favored by natural selection in that these creatures became more adapted to a brutish mode of life, decrease in brain size (tending to microphaly) can easily occur within a relatively small number of generations."²³

Equally significant is the research reported in the November 8, 1963, issue of "Science Magazine" in which William Laughlin, professor of anthropology at the University of Wisconsin, reports on studies of Eskimos and Aleuts.²⁴ This remarkable article shows that the ancient Aleut, perhaps some

4,000 years ago, had a skull which was definitely more modern as the definition goes in anthropology than that of the modern Aleut. The modern Aleut looks more primitive, has a broader skull, and other characteristics which commonly are associated with primitive man. In addition to that there is the mandible or jaw bone of a man of Japan dated about the year 1,000 A.D.. This looks reminiscent of the very ancient Heidelberg jaw except for the chin. There is also a linking of the ancient Mongoloid race with a so-called Sinanthropus or Peking man, which has long been regarded as a very ancient man. The author notes that significant differences, however, have developed over a short time span between closely related and contiguous peoples. He shows that this shows the enormous variation in morphological or outward form of Homo Sapiens. In effect what we have here is the possibility to have a tremendous amount of variation without even transgressing the lines of species. This is change, this is variation but in these findings man remains always man.

Switching to another topic, it is not amiss to point out that, while the student of the Bible truly faces certain real difficulties in the creation story, this is also more than true of the person who seeks to explain the origin of all things by a natural evolutionary process working by chance and without the intervention of any supernatural power such as a god. The unanswerable questions are tremendous. They include the question of the origin of the elements in the first place as well as the origin of the universe and the solar system, specifically in the organized form in which it exists today.

Can We Create Life? Scientific Theories of Origin of Life

In our day we are learning also a great deal more about what we call microbiology. This is the area where chemistry and biology come together to discover more about what goes on at the very fundamental level of life within the cell. In this connection we find the newspapers and popular magazines often carrying misleading headlines. It is not uncommon to find a headline stating "Life Created in Test-Tube" and then go on and discover when we read the article that the accomplishment has been considerably less earth-shaking. So much depends on what you mean by life and how you define it. A thorough investigation of this topic, however, reveals the inability of evolutionary theory to demonstrate in any logical and plausible fashion how the elements themselves, organized in various inorganic chemical compounds, could have passed over from the inorganic or dead state to the organized living cell. A consideration of this specific problem may prove enlightening from the point of view of demonstrating the enormous difficulties encountered when one attempts to evade the doctrine of creation and substitutes a completely mechanical process to explain the origin of all living things.

What is living material? Actually it is difficult, if not impossible, to offer a definition satisfactory to all. Some are satisfied to say that living material is that which is able to reduplicate itself and hence regard viruses as living material. Actually more careful scientists indicate that there are other characteristics to be considered. Dr. Mora recently listed four characteristics of living material which provide a more comprehensive approach to a definition. (1) A

living organism must be autonomous, similar to others of this kind but not an exact duplicate. (2) It must be self maintaining, i.e., able to repair itself and to duplicate itself. (3) A living organism must be able to adjust to changing environmental conditions and survive. (4) It finally must have what Mora calls an urge to drive toward self-fulfillment.²⁵ Certainly it is not too much to expect that any theory seeking to account for the origin of life will start with the obviously inorganic and go at least as far as a functioning cell. Viruses, often regarded as a primordial type of life, do not meet the requirements of this definition. Essentially they consist of a membrane of protein enclosing a core or nucleic acid. They multiply themselves only by invading cells of another organism and using its chemistry to produce virus particles. Thus they depend entirely on other life and may be regarded as parasitic.

To meet these requirements, a theory must account for the origin of macrochemicals which play such vital roles in the machinery of the cell. Most vital are the highly complex giant molecules called proteins. They are found in every form of life and are involved in every basic function of living organisms. Closely allied in the complex are the various dextrabonucleic acids (DNA) and ribonucleic acids (RNA). These remarkable molecules represent genetic material of living organisms and are the materials which direct protein synthesis. They almost infallibly pass down to succeeding generations the pattern of each and every living organism. Life without these complex molecules is unimaginable.

Virtually all scientists agree that spontaneous generation is impossible today under existing circumstances. The existence of bacteria and of oxygen in our present day environment would rapidly do away with any life form which came into existence spontaneously, and it would never get very far.

Thus man is led to speculate on conditions which might have obtained in the early days of the earth and to reconstruct what might have happened. It should be recognized that all such activity is actual speculation. The Dutch geologist Rutten states: "The time elapsed is so enormous that it is difficult to prove anything at all, because the record is not only incomplete in the extreme but is often changed beyond recognition by younger events."²⁶

We do not have the opportunity here to go into all the details of the various theories nor to face the difficulties encountered by these theories. We should mention, however, that the molecules which make up living material and the cell are intricate in the highest order and contain a fantastic amount of information directing the chemistry of living organisms. To propose that these developed by chance is to cloak chance with all of the qualities of a creative deity. Moreover, the right molecules must not only be produced, they must be in the right system. They must be protected against degradation so they might multiply. We know living systems to be extremely sensitive. For example, almost all soluble proteins denature upon heating. They are extremely unstable in this regard. Most of them are damaged irreversibly if exposed to temperatures as high as 40 to 50 degrees centigrade.

We know also that peptides decompose readily by hydrolysis and revert to

amino acids. The chemical balance is toward decomposition rather than toward building up to higher, more complicated molecules.

People doing research in this field today believe that the primitive atmosphere contained ammonia, methane, hydrogen, water. They have exposed experimental atmospheres of this type to such things as ultraviolet light, high speed electrons, high voltage electricity, etc. Under these conditions they have induced the simple compounds to fracture and to be combined into more complex molecules.

However, they postulate generally that this was carried out originally by ultraviolet light and must face the difficulties that ultraviolet light today is known to sterilize life and to kill it. Hence they must postulate that once ultraviolet has done its work of starting the molecules, that it was cut off in time by a blanket of oxygen which came into the atmosphere. Oxygen, too, could not have been present in the beginning but must have come into existence later. Hence, they postulate that the early organisms produced oxygen quickly enough to prevent them from being sterilized by ultraviolet light. When you consider that the present vegetation of the earth would require five thousand years to produce the amount of oxygen we have in the atmosphere, it does not seem feasible that this barrier of producing the oxygen quickly enough to shield from ultraviolet could be passed. Another great problem is the fact that these early organisms could not be adjusted to oxygen and there are some men who regard that the formation of oxygen eventually could have had a poisoning effect on these early organisms which then have called for some development of other organisms to take their place. This I think gives one a feeling of some of the difficulties faced by postulating the origin of life by itself.

Another difficulty is the fact that the cell in which all living organisms function today is more than a sack containing chemicals. The old ideas that the protoplasm is simply a colloidal system has been replaced by the knowledge that the cell is a chemical factory which has many different compartments. Under the electron microscope the cell is seen to consist of a three-dimensional network of tubules and globules with diameter of 100 to 150 millimicron. Inside this network proceed all chemical processes. They operate under the control of the cell for the service of the living unit. Not only have investigators thus far failed to account for the chance development of such a highly specialized organization, they freely admit that they still do not know what goes on precisely in this area of biochemistry. The usual answer, of course, is that given enough time, all of these things would develop by chance and by natural selection. It is interesting, however, that leaders in the field, including Dobzhansky, hold that natural selection does not apply at this area of the hierarchy of living things. Moreover, Mora indicates that the old faith of the evolutionist that "given enough time, the improbable becomes the inevitable," is to be rejected. Mora says concerning this line of thought; "Using such logic, we can prove anything . . . when in statistical processes the probability is so low that for practical purposes infinite time must elapse for the occurrence of an event, the statistical explanation is not helpful."²⁷

We would conclude then that the barrier that faces evolution demonstra-

ting how by chance life could have come into existence from inorganic materials, something that definitely does not happen today, would seem to be insuperable. Certainly there is nothing here that would embarrass the creationist. Creation really provides a more intellectually satisfying explanation than to assume that the great god of chance performed this miracle over long periods of time.

A Consideration of the Terms "Kind" and Creation "Days"

Let us return now to a study of the Genesis account and note briefly what it has to say about things that were created as well as its implications for the age of the earth.

The Genesis account is quite abbreviated. We are told on the third day God created three kinds of plant life: vegetation, plants yielding seed, and trees bearing fruit. On the fifth day He created three kinds of animal life: great sea monsters, swarms of living creatures (of the water), and birds. On the sixth and final day He made three kinds: cattle (or domestic animals), creeping things, and beasts of the earth (wild animals). Then he made man. Thus God created great groups comprising an indeterminate number of "kinds."

The terms "kind" are not zoological or botanical. They list only the largest groups. There is no detail given. All that we are told is that in each case they reproduced "after their kind."

The word "kind" in the English Bible is a translation of the Hebrew word "Min." Many creationists in the past have equated this with the modern biological term of "species." This is wrong. Now the modern term "species" is very narrow in its application. Two birds identical except for small differences may be classified today as being in different species. Larger terms embracing larger groups are: the genus, the family, the order, the class, the sub-phylum, and the phylum. Thus, a dog belongs to the species "familiaris" meaning common. He belongs to the genus "canis" which contains near relatives. He is a member of the "canidae" family or dog-like group. He is then a member of the order of "Carnivora," the meat-eaters. He is in the still larger group of the class "Mammalia," animals which nurse their young. Finally, he belongs to the phylum "Chordata," animals with backbones, and to the kingdom "Animali."

It is impossible to equate the Hebrew word "Min," which we translate as "kind," with any of these modern terms. It certainly is incorrect to equate it with "species." Rather Scripture itself gives us every reason to believe that "kind" is a much broader term and includes more categories than the biologists' "species." In Leviticus 11:17, reference is made to the "owl . . . after his kind." But owls form a complete order, "Strigiformes." So in this case, "kind" obviously includes all species of owls as well as genera, and even beyond. In Leviticus 11 mention is also made of the hawk, as a "kind." In modern ornithology the hawk is listed as a "superfamily" which contains many species.

The word "kind" is also used in Genesis 7:18-16. Then in Genesis 8:19-20,

Noah is reported to have sacrificed "one" of every clean beast and of every clean fowl. Scientists today list approximately 8,500 species of birds and 14,500 species of mammals. There are 12 species of caribou in North America alone. If "kind" is equivalent to species then Noah would have sacrificed thousands of animals. Scripture certainly does not indicate this. Kind then means "division" or "group." "After its kind" then means that Jehovah made plants and animals according to their various divisions. It means that there are definite limits beyond which plants and animals may not vary. Thus it rules out the development of man from lower forms of life. But, allows for variation within the circle of the "Min." Thus God created the general group or kind of cattle. But the specific species of cows we have today may be considerably different from the original created kind of cattle. Consider man and the great variety of races we have today. Yet they all are descendants of one set of parents, Adam and Eve. Thus the creation account does not obligate us to say that there can be no change or that species may not vary, or that new species may not arise.

Turning to another critical point, what about the creation days! The six days in which Genesis and Exodus 20 say God made heaven and earth? Now, of course, the neo-orthodox theologian and the Bultmann demythologizer has no trouble with either. For they casually say that this is part of a poetical way in which God presents certain theological truths. Whatever science may be taught, here are surely the crude and erroneous ideas of the ancient Hebrews. However, this essayist cannot accept either neo-orthodoxy with its low view of Scripture or the approach of Rudolph Bultmann and his demythologizing. A reverent acceptance of the Biblical doctrine of inspiration leads me to take the six days more seriously.

Of course, many have attempted to say that these days are periods of time and thus allow for a great age of the earth. They point out that the first three days functioned without the presence of the sun and hence could not be days at all in our present usage of the term. Yet it may be countered that the phrase "evening and morning" ties the six days together.

Moreover, interpreting these days as periods of time does not really solve the problem. For the plants come before the sun, and vegetation precedes animal life. Neither of these factors fit into an evolutionistic scheme.

It would seem that the days of creation are defined in Genesis 1:3-5 which reads, "And God said, 'Let there be light,' and God saw that the light was good; and God separated the light from the darkness. God called the light Day and the darkness He called Night. And there was evening and there was morning, one day." The use of the terms day, morning and evening, light and darkness together in this verse say clearly enough that these are days, not periods. For the author, Moses, it was obvious that these were days before the sun. But he did not worry over the difficulty God might have in providing light without a sun. For a Creator this is a small difficulty. The creation of light before the sun is indicative of the fact that for the enjoyment of light we are ultimately dependent upon God, not the heavenly bodies of themselves.

It is interesting that modern commentaries agree. The modern and liberal Interpreter's Bible states, "There can be no question but that by 'day' the

author means just what we mean — the time required for one revolution of the earth on its axis. Had he meant an aeon he would certainly, in view of his fondness for numbers, have stated the number of millenium each period embraces."²⁸

It is also true that nothing in scripture leads us to interpret the "days" as "periods." Elsewhere in the Old Testament whenever "yom" is associated with a number, ordinary days are meant. (Genesis 7:11, 8:14, 7:12; Exodus 12:6) A particularly important passage is the reference to the six days of creation in connection with establishment of the sabbath day. (Exodus 20:11).

The late Professor G. C. Aalders of the Free University of Amsterdam summarized the situation nicely under two points. "(1) In the text of Genesis itself he affirmed, there is not a single allusion to suggest that the days are to be regarded as a form or mere manner of representation and hence of no significance for the essential knowledge of the divine creative activity. (2) In Exodus 20:11 the activity of God is presented to man as a pattern, and this fact presupposes that there was reality in the activity of God which man is to follow. How could man be held accountable for working six days if God Himself had not actually worked, for six days."²⁹

No doubt the answer to this puzzling question lies in realizing that here we are dealing with the true and factual account of how God created. But it is, by virtue of this very fact, an account far beyond our ability to understand, even as the doctrine of the Trinity is clear but incomprehensible. Moreover, we are dealing here with the time when God was in the process of setting up natural law. You can no more apply present day laws of science to the creation or to the creation days than you can apply chemistry to the wine at the wedding of Cana.

A Discussion of the Age of the Earth

But what does the Bible say about the age of the earth? Actually, the Bible does not date the time of creation. That is, it does not explicitly say that from creation to Abraham represents a certain number of years. The following points summarize the points to bear in mind in answering this popular question.

1. The 4004 B.C. date often quoted as the date for creation is based on the genealogical lists of Scripture especially in Genesis 5 and 11. But Biblical practice often allows for omissions in genealogies, which may be only representative. For example, Matthew's genealogy of Christ omits four names. It is doubtful if the genealogical list may be used as chronologies. If the genealogy of Genesis 11 is complete and unabridged, then all the post diluvian fathers, including Noah, would have still been living when Abram was fifty years old. Three men born before the division of the earth (Genesis 10:25) namely, Shem, Selah, and Eber would have outlived Abraham. Eber would have also lived two years after Jacob arrived in Mesopotamia to live with Laban.

Certainly, the general picture given in Genesis otherwise does not support such conclusion. Neither does Joshua 24:1 and 24:14, which say that Abram's

fathers including Terah, served other gods. If Noah and Shem were still living in Abram's day, this passage would indicate that they had fallen into idolatry.

2. One may ask concerning the latter part of verse two of Genesis 1 whether the moving of the Spirit of God over the face of the waters is included in the first day. It is mentioned before the creation of light. The term "moving" refers to a brooding activity. If this is outside the limits of the first day and indicates preliminary activity, then certainly a great amount of time may be included in this verse. However, this interpretation is weakened by Exodus 20: 11, "In six days the Lord made heaven and earth and all that in them is." This passage certainly seems to include all of the creative activity in the six days, that is, both the original creation of matter and the subsequent organization.

3. If the controversial six days of creation were long periods of time, then millions of years could easily be encompassed in Genesis 1. However, as indicated previously, the natural interpretation of Genesis 1 points to ordinary days and not long periods. Moreover, the entire wording of Genesis 1 indicates immediate action. There is no indication of a long drawn-out process. (Psalm 88:9, "He spoke and it came to be; he commanded, and it stood forth.")

Hence, it is clear that Scripture does not give an age for the earth. Certainly it does not in a summary statement tell us how long it was from Adam to Abraham. But it does certainly give the impression of a young earth. Certainly, it is true that if the days of Genesis are days of normal length, the man is about as old as the earth. The essayist agrees with Morris and Whitcomb that we cannot stretch the genealogy of Genesis 11 to cover a framework of say 100,000 years.⁸⁰ To do this is to assume unreasonable gaps in the genealogies. For example, the gap between Abram and Moses was 800 years, not 80,000. The gap between Joram and Uzziah in Mathew 1:8 is 50 years, not 5,000. How far the genealogies may reach if possible gaps are filled is uncertain. But it does not seem possible that we can be dealing with a period as long as 100,000 years between the Flood and Abraham. It is also to be remembered that God created an adult earth. It was not a billiard ball, bare and barren. It was stocked and complete. This alone vitiates theories based on computing age and assuming an unorganized mass of material at time zero.

Various Methods of Dating the Age of the Earth

Because so many of our people are interested in how science arrives at the great ages for the earth and for various parts of the earth, it is not amiss to use the remaining moments of our essay to say something about the current status of radioactive dating.

Most dating covering vast ranges of time is done by combination of 5 radioactive decay families. They are:

U238	-	Pb206	Half-life	4.5	billion years.
U235	-	Pb207	" "	0.71	" "
Th232	-	Pb208	" "	13.9	" "
Rb87	-	Sr87	" "	50.	" "
K40	-	A40	" "	12.4	" "

Using Uranium methods, rocks on four continents have been determined to be as old as 2,700 million years. A Potassium-Argon determination in Southern Rhodesia has labeled a rock at 3,800 million years.

In general radiochemical methods have led to concluding the earth to be 4.5 billion years old. The oldest fossils came at about 500-600 million years.

Behind this general conclusion lie thousands of analyses, many of them yielding very puzzling results.

The validity of this type of age determination depends on several assumptions. They are the following:

1. The mineral was formed in a period of time which is short compared to its age.
2. The rock has neither lost nor gained any of the radioactive elements, whether parents or daughters.
3. No daughter element was present at the time of formation of the rock.
4. The decay rate of the radioactive element is accurately known and has not varied.

5. If several different methods agree on an age for a given rock, this agreement is proof of the validity of the age determination.

As more and more determinations are made, evidence has accumulated indicating that in many instances one or more of these fundamental assumptions has not been met. More than half of the uranium-lead analyses yield results whose internal disagreement exceeds at least 10%.⁸¹

Discordancies are by no means small. Granite from Pikes Peak, Colorado, contain co-existing Zircon and Biotite. Six methods applied to this rock gave startlingly different results: U238 - 624 million years; U235 - 707 million years; Pb207/Pb206 - 980 million years; Th232 - 313 million years; Rb87 - 1020 million years; K40 - 980 million years. Note the range is from 313 to 1020 million years.⁸²

A rock called Gneiss near Baltimore yielded results varying from 305 million years for Rb87 to 1040 million years for U238.⁸³

Concurrence of different methods need not always indicate accuracy. A

sample of mica from Gunnison, Colorado, gave highly concordant ages for Uranium, Thorium, Rubidium, and Strontium. However, uranium and thorium determination of other minerals of the same rock were found to be discordant.⁸⁴ It is obvious that results may be in agreement and still be in error. One must agree with one geochemist who judged, "One of the most engaging aspects of geochemistry is the frequent occurrence of unexpected results indicating that our knowledge of many physical, chemical, and geological phenomena concerning rocks is inadequate and needs improvement."⁸⁵

Over vast periods of time the heating and remelting of rocks, cracking, leaching by water and other geologic forces often alter the percentage composition of radioactive parent and daughter elements. Analyses run on such rocks are bound to give unreliable results.

The extent to which unexpected chemical problems may complicate matters was recently illustrated in controversy concerning certain rock beds in Olduvai Gorge, Tanganyika, East Africa, where early Hominid fossils have been found. Radiochemical analysis yielded 4.4 million years for a given bed. Later study showed a large chemical contaminant. When due correction was made the 4.4 million was reduced to 1.8 million years.⁸⁶

The extent to which professional opinion can differ is illustrated by a Russian geochemistry text which states that the oldest mountain ranges on earth (Belomorids in Karelia and granites in Manitoba) are 1,700,000 years old. An editorial note states that Soviet scientists consider the American estimates of 8,100,000 years as "exaggerates."⁸⁷

Concerning all this, we would conclude that scientific research in this area will undoubtedly clear up some of these difficulties. Perhaps it will find more problems. For example, this month physicists at the Westinghouse Research laboratory in Pittsburgh announced that they had accomplished a previously impossible feat. Working with a radio-active substance, Iron-57, they proved they could influence the rate of radio active decay. Even the small deviation of 8% produced in this instance is a startling violation of a law previously regarded as quite rigid.⁸⁸ Geochemistry has by no means the open and shut case for definite dating that workers in the area sometimes indicate. However, it is inescapable that despite discordances, great ages are indicated. However, some data seem to better fit the concept of a young earth. For example, a great amount of meteoric dust, 14,800,000 tons settles to earth each year. In the estimated five billion years of the earth's existence, a layer 54 feet thick should have accumulated over the earth. No such layer is found on the ocean floor. Likewise Operation Mohole shows that instead of 18,480 average feet of sediment expected on the ocean floor, only 1,800 feet are found at the maximum.⁸⁹ Moreover we tend to agree with Dr. James B. Conant that one must be cautious in dealing with the past. "More than one physicist has expressed grave doubts as to whether over such enormous intervals of time one can assume uniformity as to the behavior of matter. What does the concept of time mean when we appeal to thousands of millions of years? Just as the physicists found it necessary to rewrite some ideas about space and time when very high velocities and very small distances came in view, so it is possible that common-sense notions of time cannot be carried into cosmology."⁴⁰

Conclusion . . .

In conclusion let us note three things:

First, remember that scientists too are human, that theories have fallen and have been revised. It was no less an evolutionist that Loren Eisely who chided his colleagues in their dogmatic assertions about the origin of life, "With the failure of these many efforts science was left in the somewhat embarrassing position of having to postulate theories of living origins which it could not demonstrate. After having chided the theologian for his reliance on myth and miracle, science found itself in the unenviable position of having to create a mythology of its own: namely, the assumption that what, after long effort could not be proved to take place today had, in truth, taken place in the primeval past."⁴¹

Second, let us not despair if we cannot find all the answers. As Alan Richardson, the British scholar, has so aptly said, "Christian faith is not a 'religion', one of the various 'religions' of the world, just as God is not 'a god', one of the mythological deities who have gone down before the advancing armies of modern knowledge. We need not tremble for the ark of God, who still dwells between the cherubim and still is powerful to save; we stand in mortal peril only if in our presumptuous unbelief we stretch out our hand to protect the ark, as though we could defend God (cf. I Samuel 4:8; II Samuel 6:6ff.) It is not we who must go in quest of God and prove that we know Him; it is God who calls His people by their name, though they have not known Him; He is Yahweh and beside there is no god (Isaiah 45:4f.)."⁴²

Third, let no doubt taint your God-established security in the Gospel of Jesus Christ our Savior who was also Creator and is Preserver. Let nothing weaken your conviction that man needed a Savior and that Christ is all in all. This is God-given revelation, beyond science or philosophy to confirm or deny. We are His offspring and God loves us, today, as in the past, so in all eternity.

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