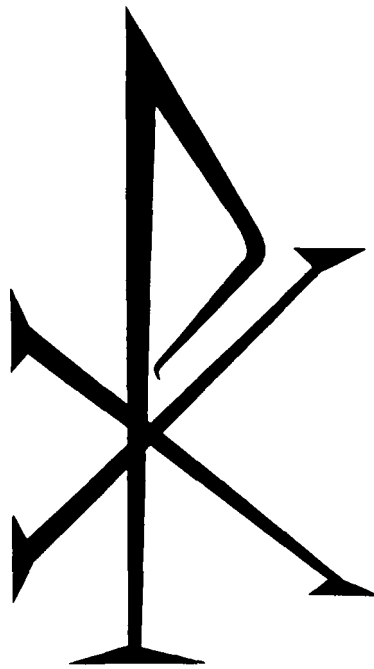


CREATION RESEARCH SOCIETY

QUARTERLY



Haec credimus:

For in six days the Lord made heaven and earth,
the sea, and all that in them is and rested on
the seventh. - Exodus 20:11

CREATION RESEARCH SOCIETY

QUARTERLY

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EDITORIAL COMMENT

After hearing pronouncements of "Modernism" from such men as Robinson and Pike, it is indeed refreshing to read the testimony of a layman in religion, but one who takes the Bible at "face value." And our first article is especially worthwhile testimony, since Dr. Oscar Brauer is a professor of chemistry and physics. He is in a position to know, at least from a consideration of the physical aspects of our universe, whether the Bible is as antiquated as many "theologians" now maintain. We are glad to welcome this new contributor to our publication and look forward to other articles from him. It begins to look as if laymen will have to organize and insist that Christianity be returned to its basic certainties.

We have a number of plant breeders in our society and so it is good to have a first-hand report from the world's most outstanding breeder of miniature roses, Ralph Moore of Visalia California. In his introduction he is more than generous in crediting other rose breeders with their undeniably important contributions. But the fact remains, that they bred miniatures only as a small part of their rose breeding activity, whereas Ralph Moore has made this his life profession along with the breeding of moss roses. So often after lectures on rose breeding I have been asked if my own work does not furnish a demonstration of evolution. Ralph Moore's discussion shows some of the reasons we do not believe there is the slightest evidence for any evolutionary trends, even as regards varieties.

Another new contributor is Warren R. Howard, a biologist working in industry, as a technical director. His succinct article summarizes the reasons why many of us, who are thoroughly aware of variation in the plant and animal world, do not see that this leads or ever has led to any evolutionary pattern of development. I particularly like the last paragraph of his conclusion.

Peter A. Steveson calls attention to the ever-changing pattern of thinking in the scientific world, particularly as regards cosmogony. This should make us all cautious in prematurely accepting any scientific theory. Especially is this

true if it conflicts with what the plain reading of the Holy Scripture teaches. Even as regards theories which have no bearing on our faith, I have always been skeptical of most propositions; and it is amusing to look at my college chemistry textbook, the best of its day in 1923, and compare ideas found in that book with ideas now held in chemistry.

We are indeed fortunate in having Dr. Harold Armstrong consent to prepare a column on "Comments on Scientific News and Views." He has a knack for picking up items which are related to our field of interest. His views and reactions to various discoveries are always of great interest to me, and I hope they will be to other members also. Perhaps others will submit their own reactions to what they see and read, and thus help to keep us all informed.

The information Wilbert Rusch gives us on the island of Surtsey is almost on the fantastic side. I hope we can have this book more completely reviewed soon. In fact would it not be wonderful if we as Creationists could plan a research trip there? It appears a small scale model of how the world might have been refashioned during and after the world-wide Flood.

William Tinkle, who is feeling much better now, does well to list the concessions that even an ardent evolutionist, such as Simpson, admits distinguish us from apes, monkeys, gorillas and baboons. With so much published about human "evolution," as imagined by the visionary researchers, it is almost impossible to tell an ape from a man, especially from some of our beat-nicks. No doubt about it, man can quickly debase himself, but does this show that he came up through the mists of time from forms of tree dwelling primates as the article in the December 3rd issue of the *Saturday Evening Post* claims?

We think not.

-Walter E. Lammerts, Editor

P.S. I call attention to the Index which covers all three publication years of the Creation Research Society. Dr. John N. Moore compiled the Index.

WOULD YOU LIKE REPRINTS?

More and more members and readers ask for copies of articles which they have found of particular interest or usefulness. Such reprints, of course, afford an excellent means of introducing Creation Research Society to others who might become members.

To facilitate requests, reprints will be prepared for orders of at least 50 copies per article. Several persons could join in placing an order. Estimated cost is five cents per page (n. b. minimum of 50 copies) for an eight page article with minimum charge of \$12. However, all reprints will be prepared in a minimum of four pages, or multiples of four pages (i.e. 8, 12, 16, etc.) for an extensive article.

Requests for reprints of articles in this Quarterly must be received by the Managing Editor by April 15, 1967. (Reprints of articles in previous Quarterlies and Annuals are available on special order at the above arrangement.)

GOD OF THE UNIVERSE WATCHING OVER THE EARTH

DR. OSCAR L. BRAUER

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The Theory of Evolution was tolerated by most people as long as it was taught as a theory. Now that evolution is taught as fact, as is the case in so many high schools and colleges today, it is a source of downgrading of God and denial of evidences of His existence. Fulfilled prophecy, dimensions of the universe, the very existence of matter, changing theories of cosmology, orderliness and design, and the impossibility of chance as an explanation are all reviewed. Those who would interpret the Bible liberally are saying that, if God's word does not agree with current scientific theories, they will have to make it fit the theories. Why not change the theories to fit God's Word?

Introduction

The purpose of this article is to counteract the modern tendency to downgrade God and his Holy Word. In this century there has been a trend among biologists, geologists, paleontologists, and in a few cases among chemists to go far beyond observed facts into speculations of various kinds.

The keystone of all these Godless imaginings is the Theory of Evolution. Its influence has had the tendency to downgrade God. Now many of those in the forefront are trying to do away with God entirely, not so many by direct statement, but by giving God the "silent treatment" and teaching things that are inconsistent with his Word.

This point of view has infected the speakers and writers of this generation so that they think that in order to be intellectually modern in style they must say something that at least appears to contradict the Bible, such as saying something happened sixty million years ago.

The Theory of Evolution was tolerated by most people so long as it was taught as a theory. Now, however, it is taught as fact in many high school texts where it can do the most harm. This has alarmed the religionists. From what one reads in the newspapers civilization seems to be losing its moorings and many think this Godless teaching is the main cause.

God's Existence Answers Our Problems

No philosophy of scientist, philosopher, religionist, educator, or lay citizen is satisfying unless it accounts for the beginning of things. The average child may, and usually does, ask his parent who made the world. The parent usually replies that God made it. Then the child may ask who made God. The parent's reply now is that God was always in existence.

This answer is meaningless to the child. It is also without meaning to the parent, and even meaningless to all the wise men that ever lived. Neither Aristotle, nor Newton, nor Einstein, nor anyone else can comprehend how God could have always been in existence. One may imagine

he understands the forward end of eternity; that is, endless time from the present on, but an eternity projected backward endlessly is incomprehensible to every finite human mind.

The only logical attitude for us to take, and the only one giving intellectual satisfaction, is that there has to be an infinite mind who understands what the human mind can never hope to understand. That infinite mind is the mind of God.

If an all-knowing God put man on this bewildering, complex, puzzling, and frustrating world, it is logical that he would have given man some instructions to guide preparations for the eternal life that God had planned for him. These instructions millions of people believe God has given them in the form of the Holy Bible. These millions of people also believe that the Bible contains all the instruction man needs for forming a correct philosophy of life, and all the general understanding of the universe that the limited finite human mind can take.

If the Bible is the word of God, it should be unique, unusual, wonderful, challenging, comforting, inspiring, ennobling, encouraging, in a class by itself, and outstanding in every respect. The Bible is all of these things and more. No other book can come anywhere near it in importance.

Several volumes would be required to describe all the ways in which the Bible is important. It is significant that all other books come and go in a very short time, but the Bible increases its sales from year to year and from century to century.

Besides this we shall direct attention only to fulfilled prophecy. Of the hundreds of prophecies already fulfilled, and the scores more that are in the process of being fulfilled now, and the many to be fulfilled in the future, we shall select only two relative to Christ's first appearance, given in the Old Testament and fulfilled in the New. The fulfillment of these two prophecies cannot be attributed to chance or coincidence.

Prophecy

“Therefore the Lord himself shall give you a sign; Behold a virgin shall conceive, and bear a son, and shall call his name Immanuel.”¹

Fulfillment

“But while (Joseph) thought on these things, behold, the angel of the Lord appeared unto him in a dream, saying, Joseph, thou son of David, fear not to take unto thee Mary, thy wife: for that which is conceived in her is of the Holy Ghost.

“And she shall bring forth a son and thou shalt call his name, JESUS: for he shall save his people from their sins.

“Now all this was done, that it might be fulfilled which was spoken of the Lord by the prophet, saying:

“Behold, a virgin shall be with child, and shall bring forth a son, and they shall call his name Emmanuel, which being interpreted is, God with us.”²

Second Prophecy

“They part my garments among them, and cast lots upon my vesture.”³

Fulfillment

“Then the soldiers when they had crucified Jesus, took his garments, and made four parts, to every soldier a part; and also his coat; now the coat was without seam, woven from the top throughout.

“They said therefore among themselves, Let us not rend it, but cast lots for it, whose it shall be: that the scripture might be fulfilled, which saith, they parted my raiment among them, and for my vesture did they cast lots. These things therefore the soldiers did.”⁴

Does the Bible Claim to Be Inspired of God?

“All scripture is given by inspiration of God, and is profitable for doctrine, for reproof, for correction, for instruction in righteousness.”⁵

“For we have not followed cunningly devised fables, when we made known unto you the power and coming of our Lord Jesus Christ, but were eye witnesses of his majesty.

“For he received from God, the Father, honour and glory, when there came such a voice to him from the excellent glory, This is my beloved Son, in whom I am well pleased.

“And this voice which came from heaven we heard, when we were with him in the holy mount.

“We have also a more sure word of prophecy; whereunto ye do well that ye take heed, as unto a light that shineth in a dark place, until the day dawn, and the day star arise in your hearts:

“Knowing this first that no prophecy of the scripture is of any private interpretation.

“For the prophecy came not in old time by the will of man: but holy men of God spake as they were moved by the Holy Ghost.”⁶

What Does the Scripture Say About God Being Eternal?

“The eternal God is thy refuge and underneath are the everlasting arms—.”⁷

“Before the mountains were brought forth, or ever Thou hadst formed the earth and the world, even from everlasting to everlasting thou are God.”⁸

“For thus saith the high and lofty one that inhabiteth eternity, whose name is holy; I dwell in the high and lofty place.”⁹

“Now unto the King eternal, immortal, invisible, the only wise God, be honour and glory forever and ever.”¹⁰

“But Thou art the same, and thy years shall have no end.”¹¹

What Does the Bible Say About the Wisdom and Understanding of God?

“Great is our Lord, and of great power, his understanding is in finite.”¹²

“For as the heavens are higher than the earth, so are my ways higher than your ways, and my thoughts higher than your thoughts.”¹³

The Dimensions of the Universe Indicate There Is a God

Says the critic: “No one can prove there is a God.” The rule works the other way too: no one can prove there isn’t a God. In truth, there are infinitely more facts pointing to the existence of God than any which might be interpreted as against his existence.

The statement that “no one can prove there is a God” is startling to the Christian. To one who has had God answer his prayers many times, to one who has read of scores of miracles in this day and age where God has rescued his servants from immanent danger, the foregoing statement seems like blasphemy. Could it be that in the last analysis the statement is quibbling about the meaning of the word “prove”? Perhaps those who use “prove” in this connection are thinking too much of the rigid formality of geometry.

Let us consider the dimensions of the sidereal universe. The dimensions are so great that astronomers use the light-year as a measuring unit. Light travels 186,000 miles per second. So in one year light would travel 5.8 trillion miles.

The 200-inch telescope on Mount Palomar and the electronic telescopes can see galaxies (clusters of stars) at distances of practically one billion light-years. Thus the part of the sidereal universe now visible is a sphere with a diameter

of two billion light-years, and a volume of 4.2 times 10^{27} cubic light years, a volume many times anything the human mind can comprehend.

Is this the full extent of our universe? If we could make an 800-inch telescope, we would probably be able to see twice as far. Who is it that would dare to say we would not be seeing more galaxies? In other words, is the universe infinite in diameter or is it finite?

The human mind cannot comprehend infinite distance. On the other hand, if the diameter of the universe is finite, what exists two times as far out, or three times as far out? To the limited human mind neither possibility offers a satisfactory answer. Neither possibility is intellectually satisfying.

To our God-given intuition, man will never be satisfied with either concept. The only satisfactory picture is that there is an infinite God, who understands and has made all.

Let us emphasize the phrase "God-given intuition" used in the next to the last sentence. Isn't it reasonable to assume that an omniscient (all wise) God would have given his creatures some inborn mechanism by which they could distinguish the real from the imaginary?

Suppose you told a normal child that the house in which he lives is not there but exists only in his mind. To him this statement would be foolishness. In other words, God has given him an intuition that tells him the house is real. This child as yet is not confused by the imaginings of certain philosophers.

Mankind has not given God all the credit due him. Psychologists probably would not give much weight to "God-given intuition." At least they would not dignify it as being unerringly able to judge reality. But really isn't it logical? If you as God were putting man into a very confusing world in which you could foresee confusing philosophies, wouldn't you give him some way of distinguishing between the real and the imaginary?

Some philosophers use esoteric (understood by only a few) words behind which to hide their peculiar philosophies. Two of these words are "idealism" and "existentialism." The two words mean much the same; that is, the external world is not real but exists only as ideas in the human mind. Is there any need for us to argue this point? Really isn't this absurd to your own God-given intuition?

The Existence of Matter Indicates There Is a God

There are billions of questions about our world, and the rest of the universe, still unanswered. A relatively small number of them will in time be answered by the research of men,

but the largest percentage of them will always be beyond man's reach and comprehension. One topic that will always be beyond the limited capacity of the human mind is the origin of the stupendous quantity of matter in the universe.

One of our most dependable laws of nature is the *Law of conservation of mass and energy*, which states that the sum of the mass and energy of the universe is constant. Some mass may be changed into energy and some energy to mass, but the sum total cannot be increased or diminished. It would be impossible to create any definite quantity of mass, even as small as one gram, out of absolutely nothing.

Yet we are confronted with an almost infinite mass in the visible part of our universe. Our sun has a mass of 2.2 times 10^{27} tons. It is about an average sized sun among the other suns or stars. There are about one billion stars in the one galaxy in which we live. In the visible part of the sidereal universe there are from five hundred million to one billion similar galaxies.

From whence came all this mass? Axiomatically, it was either always in existence, or it was created. To have been always in existence doesn't make sense to our God-given understanding. But if you are more scientifically minded, let's look at it in terms of a scientific law.

The German scientist, Clausius, formulated a law that has been practically universally accepted by all scientists. Although Clausius applied the law only to the world, it has since been extended to the whole universe; in this form the law is: *The entropy of the universe goes to a maximum.*

Entropy means the run-down condition of the universe. When entropy should get to a maximum the entire universe will be as dead as the proverbial "door nail." Our earth and everything on it will have been frozen stiff. Any form of life would be impossible.

Let us illustrate the change of entropy by a study of light and heat. For instance, the earth is receiving fabulous quantities of heat from the sun especially, energy in the form of light which changes into heat as soon as it is absorbed by the surface of the earth. Yet the earth intercepts only a very, very, very small part of the total energy perpetually going away from all sides of the sun.

Where does the rest of the energy go? Most of it is presumably lost in the outer bounds of space. In other words, the entropy of the sun is on its way to a maximum, when it will be dead and cold. The earth is also radiating heat at a rapid rate. When its heat is not renewed by the sun, earth's energy will run down rapidly. Its entropy will increase to a maximum and it will freeze up.

To further illustrate the tendency of entropy to increase on the surface of the earth let us note how it increases in the natural and man-made processes here. The only way we can use heat in a heat-engine for work in running machinery is to begin by using a heated gas or liquid at high temperatures and discharging it at the resulting low temperature when it has done its work. The natural tendency of heat is to flow from high temperatures to low temperatures. When it all gets to a uniformly low temperature its entropy will be at a maximum and it will be unavailable for any more work.

Another illustration of entropy going to a maximum is in the case of water and water power here on earth. Water naturally flows down hill. If there should be no more heat from the sun to evaporate the ocean and cause winds to carry the moisture up to the mountain tops, all of the water will soon have run down to sea level where it will be at its maximum entropy, and there could be no more water power. Energy can be useful only when it is not at maximum entropy. These few samples illustrate the general tendency for all things to go to the state of maximum entropy.

The reality of the situation as of now is that the sun and the other stars have not run down. The earth, fortunately for us, has not frozen up. *Hence the universe has not always been in existence.* If it had been in existence since eternity, its entropy would have had time to reach a maximum, and the universe would now be dead.

The only other possibility is for the universe to have been created. Creation of a universe out of nothing is infinitely beyond anything and everything but an omniscient and omnipotent God. There can be no other theory and no other explanation.

Here is another situation that *demand*s that there be an all-wise and all-powerful God. We have nothing to fear for the future of the universe. our God will sustain it for the forward end of eternity.

Biblical Sayings About Creation

"I have made the earth, and created man upon it: I, *even* my hands, have stretched out the heavens, and all their host have I commanded." ¹⁴

"Lift up your eyes on high, and behold who hath created these things, that bringeth out their host by number: he calleth them all by names, by the greatness of his might, for that he is strong in power: not one faileth." ¹⁵

God knows all of the untold billions of stars by their individual names. How many stars do you know?

"By the word of the Lord were the heavens made, and all the host of them by the breath of his mouth.

"For he spake and it was done; he commanded and it stood fast." ¹⁶

There are 71 verses in the Bible that say or imply that God created the heavens and the earth.¹⁷ From the large number of verses in the Bible where the same facts are stated, God must have seen that at sometime this fact would have to be emphasized. Haven't we reached that time now?

The governments controlling over half of the peoples of the earth are self-pronounced atheists. Not believing in the existence of God, naturally they cannot believe he created anything. The rest of the peoples of the world are divided into raw heathen, who are devil appeasing; God-centered, but not Christ-centered religions such as Jews, Mohammedans, Hindus, Buddhists, Shintoists, and Confucianists; and the Christ-centered Christians.

Even the intelligentsia of the nominal Christian nations are largely evolutionary atheists. And the result is that, although the nations are said to be Christian nations, so many people are not even approximately living up to the teachings of Christ that many of the heathen peoples think Christianity is a joke. If there ever was a time when belief in God, the creator, was needed now is the time.

Modern Theories of Cosmology

To illustrate the confusion in the minds of a great many modern intellectuals, let us review what is being written about modern theories of cosmology.

"Cosmology is defined as that branch of philosophy that concerns itself with the origin and general structure of the universe; its parts, elements, and laws, especially with such characteristics as space, time, causality, and freedom." ¹⁸

Doctor Thomas H. Leith in an article entitled "Modern Scientific Cosmogonies" has summarized the writings of cosmologists beginning with Einstein.¹⁹

Leith commented on twenty two cosmologists and their theories. In order to get some idea as to what they are saying we must go back to elementary physics.

In sound there is a principle called Doppler's Principle. If a sounding body emitting a definite pitch and a listener were both stationary, the listener would hear the correct pitch. If the sounding body were moving away from the stationary listener, or if the listener were moving away from the stationary sounding body, or if they were both moving away from each other,

the listener would hear a lower pitch from what he heard when they were both stationary.

On the other hand, if the sounding body were moving toward the stationary listener, or if the listener were moving toward the stationary source of sound, or if they were both moving toward each other, the listener would hear a higher pitch than when they were both stationary.

Astronomers have applied Doppler's Principle to light. Light given off by any of the chemical elements when heated to incandescence, when passed through a spectroscope, appears as colored lines at definite places on the scale of the instrument. These lines are characteristic of the element being heated. No other element can produce these characteristic lines.

Now if we choose a definite line to study and point a telescope-spectroscope combination to one side of the sun's disc, the line will be shifted toward the violet or high frequency end of the spectrum. Yet if we point the instruments toward the other side of the sun's disc, this line will be shifted toward the red or low frequency end of the spectrum. Applying Doppler's Principle to the situation the astronomer takes this to mean that the sun is rotating on its axis (i.e., one side is approaching and the other receding).

When the telescope-spectroscope combination is directed toward different stars, in some cases the line is shifted one way and in other cases it is shifted in the opposite direction. This is taken to mean that some stars are approaching us and some going away.

When pointed at some stars the lines appear to be shifted both ways at the same time. This is interpreted to mean that we are looking at a spectroscopic double star in which two stars are rotating about a common center. The amounts of the shifts are changing all the time; and, when the two stars are moving at right angles to the line of sight in passing each other, there is no shift.

When the spectra of a large number of stars is studied critically there is a residue of "red shift" on all the stars. This is interpreted to mean that the universe is expanding. The great mystery in this situation is that the farther away a galaxy is the faster it seems to be receding. Thus the most distant galaxies are receding at enormous velocities. This red shift is one of the most difficult phenomena for cosmologists to explain.

Einstein and his followers built their universe on the general theory of relativity. In order to keep his theory mathematically consistent, Einstein introduced what he called a "cosmic constant." Since there was no way of determining the value of the cosmic constant, which could be

positive, zero, or negative, the theory was not complete.

Einstein's universe was static and made up of curved space. It took no note of the "red shift" so it didn't have to explain what happens when the retreating galaxies reach the outer boundaries of space. Our question might be, Will the receding galaxies spend the rest of eternity running around the boundary fence like pigs trying to get out of a field?

Following Einstein and his immediate successors was a group who advocated the "Big Bang" theory. They postulated the universe as beginning with a gob of energy, which exploded as soon as formed and then progressed to the present situation. They have no explanation of how the gob of energy happened to be, and what would be the final outcome. Their theory accounted for the "red shift," but not what would become of the billions of expanding galaxies. Their picture was ragged at both ends.

Then there was a group who postulated a pulsating universe. In this view, when the expanding galaxies get to the outer bounds of space they "reverse their field" and start back to the beginning gob of energy from which they started. This process would be the end of any life on the planets. From the starting point the process was supposed to repeat the explosion or "Big Bang."

These theorists have few explanations based on accepted scientific laws, especially as to what "shoed" the galaxies back from outer space, wherever that may be. This theory violates Newton's Second Law. The galaxies are thought of as accelerating without an applied force; and then, they are assumed to be stopped and turned back without any opposing force. Such speculations forget reality entirely.

The last the most modern of the mental cosmologists is represented by Bondi, Gold, and Hoyle. They postulate what is known as the "steady state" theory. This theory assumes that matter is created near the center of the universe and destroyed at the outer bounds of space. (Editor's Note: Hoyle has recently abandoned the steady state theory.)

Such a scheme violates the law of conservation of mass and energy at both ends of the route. If it could work at all God would have to be on the job at each end of this one way traffic to create and destroy mass and in the middle to speed up the galaxies. However, the proponents seem to ignore God.

Dr. Leith points out that these men are in some difficulty. Naturally, to most scientists their theory doesn't make sense. Dr. Leith also says the Einstein-deSitter, Lemaître, Dirac, and

Milne models seem rather untenable, This is a great understatement.

This discussion of man's cosmogonies reminds us of a Biblical verse:

"Then I beheld all the work of God, that a man cannot find out the work that is done under the sun: because though a man labour to seek it out, yet he shall not find it." (Eccl. 8:17).

None of these cosmologists ever mention God or God's word. It is a reasonable assumption that they have no place for God in their thinking; or that they do not believe in God. In God's word there is a verse especially for these men: "The fool bath said in his heart: There is no God—"

Orderliness and Design in the Universe Indicates the Existence of God

Another host of facts that point to an infinitely intelligent and powerful God is the orderliness of the universe, its governing laws, and the design in his creations.

If I showed an atheist or most evolutionists my watch, and told him that it just evolved, that it was formed by no greater intelligence than the laws of chance guiding the evident forces of nature such as gravity, lightning, wind, erosion, sound, light, electricity, and chemical reaction he would reply: "Impossible, unthinkable, preposterous." He would be absolutely correct.

Yet most evolutionists seems to think that "living machines," which are infinitely more complex than a watch, evolved under the guidance of chance working on these same natural influences.

When the wheel of a watch wears out the watch is useless unless an intelligent being replaces the worn out wheel. Chance couldn't do it. A similar situation exists with any other man-made machine. For instance, if a TV tube burns out, the machine is useless until an intelligent person puts in a new tube. These two examples illustrate a universal rule with man-made machines.

On the other hand, the God-made "living machines" can renew parts within the limits that God has set. If a starfish loses an arm, it can grow another. If lightning breaks the top off a fir tree, it can grow a new top.

Furthermore God-planned and designed living things can even adjust themselves to an unfavorable environment, which a man-made watch cannot do. Animals grow longer fur in a colder climate. Birds migrate when it begins to get colder in the Arctic. The Arctic hare and the ptarmigan change their coats to the protective white to match the snow. Deer also change their coats to match the different environments of

summer and winter. These are just a few of hundreds of similar adjustments.

An honest consideration of the laws of chemistry, physics, and biology all point to the existence of God. There is no other sensible way to account for these laws. A superintelligence had to make the universe and the forces and laws that run it.

Is Time of the Essence?

Sometimes a lawyer in making a contract uses the expression: "Time is of the essence." This expression represents the predicament of the evolutionist. For him: Time is of the essence.

All of the many processes postulated by the evolutionary theory that do not take place to a noticeable extent in historical time are assumed to take place in millions or billions of years. A great deal of time and effort has been expended by many scientists on determining the age of the earth. Why is the age of the earth so important to them? The answer to this question is that evolutionists want more time.

When first the geologists began to date the earth by such methods as the rate that sediment is being carried to the Gulf of Mexico by the Mississippi River, or the time it took the salt to accumulate in the ocean to its present concentration, and a number of similar methods, the results came out in the order of magnitude of a few hundred thousand years. This wasn't nearly enough time for the evolutionists. But when the radioactive dating came out with results of two or three billion years they rejoiced.

Now the evolutionary claim is clear: governed by the laws of chance, life began in a primordial slime two to four billion years ago and evolved to man as its crowning achievement. Theistic evolutionists use God to guide the process, but the extremists try to do away with God, or at least to ignore him completely. Let us consider a simpler situation than living animals and check the logic of the Evolutionary Theory. Let us describe the following to an evolutionist.

A Chance for Chance

There is a dump outside a modern large city. Scattered around this dump are steel, aluminum, glass, plastic, and other materials needed to make an automobile. The laws of chance and time are fully working there. Gravity still functions. Perhaps lightning strikes once in a while; at least there is a little static electricity around. Cohesion, adhesion, and surface tension are available, Newton's three laws of motion still operate here. The laws of macro-physics (dealing with visible things) all apply. The laws of micro-physics and the laws of chemistry still work.

If we allow one hundred years, a thousand years, or one hundred thousand years an automobile will not be formed on this city dump. Would you say that if we allow two billion years, a brand new automobile would come rolling out of that city dump? I think not. Unguided by intelligent planning, time is destructive and not constructive.

Evolution theorists may argue that automobile analogies do not apply to the origin of living things. Yet ultimately the evolutionary theory must start with non-living matter, so the analogy is quite valid.

Even today we cannot make living organisms from non-living matter in spite of great advances in chemistry, physics, and biology. This is true even with help from the most highly educated and trained scientists. Without God, it is unthinkable two billion years ago. It would have to have been "spontaneous generation." Spallanzani, Pasteur, and others long ago proved that macro- and micro-spontaneous generation are impossible. Now, however, God-less evolutionists want us to believe in ultramicro-spontaneous generation.

About four decades ago Dr. Jacques Loeb of the University of California discovered a way to force development of a certain animal ovum without a male sperm. This was heralded with great acclaim by some popular scientific writers, who like to proclaim the unbelievable as fact so as to have the appeal of science fiction. They hinted most strongly that this was almost the synthesis of life, which was just around the corner. However, the furor was short lived and soon "blew over."

And Now the DNA Code

Now has come the cracking of the DNA code meaning that biochemists have discovered compounds which influence inheritance of characteristics. Once again some popularizing semi-fiction journalists of science are suggesting, or at least hinting, that we are on the verge of choosing the inheritance characteristics we want in animals and plants and even man; that just around the corner will come the production of "Super-Man." Real scientists know such wishful thinking is foolishness and always will be foolishness,

True, synthesis of an amino acid that can reproduce itself has been hinted as one of the first steps in the evolutionary sequence. But every sensible biologist knows that a self-reproducing molecule is not a living cell. The living cell is infinitely more complex than a self-producing amino acid. Even if the self-producing molecule should have happened in some highly improbable way, two billion years ago, it would have required many miracles to get it to the stage of the first biological cell.

A more extensive discussion of the problem of man trying to create life was given by Dr. Paul A. Zimmerman in the 1964 *Annual* of the Creation Research Society, page 13.

If the chemist should synthesize the first self-producing cell from the inorganic elements, he would have to use a large number of reactions carried out under carefully thought-out and carefully controlled conditions; most of such conditions could not be produced in unguided nature, especially in the sequence that they would have to have.

Although not very vocal on the subject, many of the extreme evolutionists are undoubtedly atheists. One reason for dating the earth is that all their dates are inconsistent with the Bible. Then they reason that, if the Bible does not support their interpretation of science, the Bible is not true. In turn if the Bible is not true, it is not the inspired word of God, hence there is no God. We would remind such persons to read again Psalms 14:1.

Position of Theistic Evolutionists

The theistic evolutionists' position is very little better than that of avowed atheists. They have to take a stand inconsistent with some of the main teachings of the Bible; such as:

(1) Bible: God created a perfect man and woman in one day. Theistic Evolutionist: God created a protein molecule two billion years ago which eventually evolved into modern man.

(2) Bible: Man sinned and fell from his perfect estate. Theistic Evolutionist: Man always evolved upward, and never fell.

(3) Bible: Christ, the Son of God, died to redeem man. Theistic Evolutionist: Man, having never fallen, didn't need redemption, so there was no need for Christ.

(4) Bible: Unregenerate man is getting more sinful. Theistic Evolutionist: Man is getting better and better.

Does history show that man is getting better and better? Few men have been worse than Hitler. This man attempted a cold-blooded extermination of the Jews. This took place not in the Dark Ages, but in the highly civilized twentieth century by the leader of one of the most highly civilized countries.

Was there ever anybody in the past who equaled Stalin and other communists, who murdered millions of their fellow citizens simply because they differed politically from his own? Or has anything in previous history of mankind ever been worse than in the Belgian Congo where modern savages killed innocent whites, who had come there to help the natives, and ate their benefactors? This happened in the year 1964. Such atrocities were done by beings representing some of the latest models of the assumed long evolutionary line.

Of course better examples of men can be found than we have just cited, but they are better due to the Christian influence of God's instructions in the Bible. If all men kept the ten commandments of God's eternal law and lived by the Golden Rule what a different world this would be!

Theistic evolutionists are trying to make the modern interpretations of some scientific observations compatible with the Bible by interpreting the latter so liberally that anything is permissible. To use an old cliché, they are putting the cart before the horse. Practically, they are saying that if God's word does not agree with current scientific theories they will have to make it fit the theories. Why not change the theories to fit God's word? Do these persons have more faith in man than they have in God?

A Question to Ponder

This leaves us with a question to ponder. Why do the interpretations of some scientific observations appear to be so far apart from some of the most obvious interpretations of scripture? This is not a question that can be satisfactorily answered in anything short of a book-length manuscript.

Any short answer of this question might imply dishonesty on the part of many scientists. This is not necessarily the case. When a person gets started on any line of belief it is very hard to change him.

If a person is born into a family of Democrats, politically he is most likely to be a Democrat, not because he has studied all political philosophies, and concluded on the evidence that the Democrats had the correct politics, but because he got started that way.

If one is born into a Catholic family he is likely to be a Catholic, not because he has studied all of the religions critically, and concluded the Catholic religion is the best, but just because his parents thought so. As a child he felt that what his parent did was right.

Likewise, if a student in college, or even in the high school, studies under an instructor who *believes* in evolution, he is most likely to interpret every scientific observation to agree with the evolutionary philosophy.

To illustrate what we mean, in Monument Valley there is a track in the sandstone that looks exactly like a bear track. A friend showed the track to a man of the U. S. Geological Survey, and asked him what kind of a track it was. His reply was: "It looks like a bear track, but knowing that there were no bears in existence when that strata was laid down, I know it cannot be a bear track. It must be the track of a sloth."

This man was no doubt honest in his conclusions, but his testimony may be hiding a key fact that disputes that geological sequence and ages of the strata.

We realize that we have not met all of the stock arguments of the evolutionists directly. Space does not permit. However, your attention is directed to continuing publications of the Creation Research Society where this is being done.

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- ¹Isaiah 7:14.
²Matthew 1:20-24.
³Psalms 22:18.
⁴John 19:23,24.
⁵II Timothy 3:16.
⁶II Peter 1:16-21.
⁷Deuteronomy 33:27.
⁸Psalms 90:2.
⁹Isaiah 57:15.
¹⁰I Timothy 1:17.
¹¹Psalms 102:27.
¹²Psalms 147:5.
¹³Isaiah 55:9.
¹⁴Isaiah 45:12.
¹⁵Isaiah 40:26.
¹⁶Psalms 33:6,9.
¹⁷Genesis 1:1; 1:7; 2:1; Exodus 20:11; 31:17; I Samuel 2:8; II Kings 19:15; I Chronicles 16:26; II Chronicles 2:12; Nehemiah 9:6; Job 9:5-9; 26:7; 38:4; 38:6; Psalms 8:3,4; 19:1; 33:9; 89:11; 90:2; 95:5; 96:5; 102:25; 104:5; 105:5; 121:2; 124:8; 134:3; 136:5; 136:6,7; 146:6; 148:5; Proverbs 3:19; 16:4; Isaiah 40:26; 40:28; 42:5; 43:20; 45:12; 45:18; Jeremiah 4:23; 10:12; 27:5; 32:17; 33:2; 51:15; Amos 4:13; 5:8; 9:6; Jonah 1:9; Zechariah 12:1; Mark 13:19; John 1:3; 1:10; Acts 14:15; 17:24; Romans 1:20; I Corinthians 2:7; 8:6; Ephesians 3:9; Colossians 1:16; Hebrews 1:2; 1:10; 2:10; 11:3; II Peter 3:5; Rev. 4:11; 10:6; 14:7.
¹⁸*The American College Dictionary.*
¹⁹*Journal of the American Scientific Affiliation*, September 1964, p. 73.
²⁰Psalms 14:1.

ERRATA

Corrections in the previous October, 1966, Quarterly are stated below. The editors regret any inconvenience.

(a) On page 7, substitute "n" for the number, 77, in the second line of the article abstract in italics.

(b) On page 11, substitute "appears" for word "appear" in the sixth line of the fourth full paragraph in the left column.

(c) On page 12, add this line: "spiny cactus." to the second full paragraph in the right column.

(d) On page 16, substitute "sound" for "round" in the top line in the left column.

(e) On page 17, in the last paragraph before the "Summary," insert: "during digestion are driven into the mid-gut by" after the second line of that paragraph.

A STUDY OF MOSS AND MINIATURE ROSES

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Successful development of everblooming moss roses after many years of painstaking work has afforded an excellent example of progress in rose breeding. Yet, the result is not due to slow accumulations of minute differences which might be expected according to evolutionary theory. Evidently nothing new has been added, only changes in the DNA message that allow different expressions of already existing genetic material.

Based on findings involving moss roses, new conclusions are possible in explaining the appearance of miniature roses. Miniature roses, or any new roses, are really no more than the "old" gene material in a different combination.

Those people who know something of my work with miniatures are often amazed at its scope and variety. Some of the questions naturally are, "How did you ever get into this?", "How do you make such little ones out of big ones?", and a number of other "whys" and "hews."

Now, I happen to be one of those people who do not believe that our universe, our world, or even a new variety of rose just "happened" by accident, or is the result of the whim of "natural causes." As one studies and works with living things he becomes not only interested in how certain phenomena come about but also why. That is, NOT just the mechanistic answer to "how?", but back of that the philosophical reason. Is there a first and final reason? As posed in the words of Artemus Ward, "Why is this thus? What is the reason of this thusness?"

No man is an island—he does not live unto himself. All we are and do is laid upon the foundation of those who have preceeded or are co-workers with us. The plant breeder—scientist is, as it were, one of "the called of God" to help explore some of the wonders and mysteries of nature.

Each works in his chosen field—or often in the field which is thrust upon him. As each part of a jigsaw falls into place it furnishes part of the pattern for the next. So it is with each achievement, each experiment, each success or failure. At least part (often much) of the direction which the next step takes is directed by what has gone before.

Points of Rose History

And so it is with my own work with miniature roses. Miniatures are not really new, even though many people today do not know that such roses exist. Present day miniatures had their start with the discovery of a little pink miniature rose in Switzerland in 1918. From this, in 1933, came Tom Thumb and the stage was set for development of the many varieties known today. In just a few short years this whole transformation has taken place!

According to some accounts this original Swiss fairy rose (miniature) had been grown by the

same family in the same pot for over 100 years! In turn, it was thought to be a last survivor of some miniature roses known to have been grown in France and England during the early part of the 19th century. These are supposed to have originated from miniature roses discovered growing on the Island of Mauritius in 1810.

The accounts do not tell us whether plants or seeds were brought from Mauritius, or if the flowers were single or double, although an early English illustration depicts a single (five petal) form. The literature also indicates that miniatures were known in France before 1810, hence the French may have discovered them on Mauritius first and brought plants or seeds to Europe. According to Ann Wylie, *Rosa chinensis minima* (*R. rouletti*) was brought from Mauritius to England by Sweet in 1805, It was there known as *R. lawrenceana*.¹

It is also known that by 1840 several varieties of miniature roses were cultivated in America. But the "modern" story of miniature roses begins with the introduction of Tom Thumb in 1933. This and several other varieties were bred by Jan de Vink of Holland.

Almost without exception these were made by crossing an older variety of polyantha rose with *Rosa rouletti* (the Swiss rose), or its offspring Tom Thumb. For example, several, including Red Imp and Pixie were Ellen Poulsen x Tom Thumb. Eblouissant x Tom Thumb produced Red Elf. Cecil Brunner x Tom Thumb made Cinderella. No hybrid tea, floribunda, species or other dissimilar kinds were used.

In Spain, Pedro Dot has done considerable work with miniatures. He has used mostly polyantha x miniature; in some cases miniature x miniature and in a few a Hybrid Tea x miniature (usually *R. rouletti*).

In England, T. Robinson's work was entirely polyantha x miniature, or miniature x miniature, M. Tantau, in Germany, produced Baby Masquerade by crossing Tom Thumb with Masquerade.

In France, Alain Meilland has made some crosses involving use of Fashion and other flori-



Figure 1. Variety on left is bright pink with 20 petals and two and one-half inches in diameter, sets seed hips.

Variety on right is light red, very double, and under two inches in diameter; sets no seed hips.

bundas in the breeding line; while, in Italy, Q. Mansuino has worked with miniatures for more than 20 years but only this spring are the first of his varieties being introduced by an Italian firm.

Here, in the U. S., Dr. Dennison Morey has done some work with miniatures. Varieties introduced have been based upon crosses of a sport of Dick Koster x Tom Thumb and similar crosses.

Work with Miniature Roses

My own work with miniature roses spans a period of more than 25 years. It involves the use of many types and varieties of roses, including at least five species, Hybrid Teas, polyanthas, floribundas, tea roses, and a number of my own seedlings and hybrids (both as seed and pollen parents).

Almost without exception I use miniatures as the pollen (male) parent. For several reasons this has been the most practical approach. First, it seems that the miniature factor is linked with sterility, especially female. Very few miniatures will set seed hips, and then there is usually but one seed (rarely 2 or 3) to each hip. Some varieties will set seeds, but they are not viable.

On the other hand, a number of miniatures will produce some pollen. But here, the amount produced may be so small as to be almost impractical. Good pollen producers are really very few.

Along the way I have selected several of my varieties which have proven valuable as pollen producers and which have carried desirable genetic material. The first of these was a little variety—an everblooming semi-climber—with one inch, semi-double pink flowers. Known as Zee, it has been without doubt one of my most valuable breeders. This is the parent which made everblooming climbing miniatures possible. Further details as to the various crosses resulting in my own group of miniature roses may be found by referring to my book, *All About Miniature Roses*.²

Since 1948, I have also been interested in the breeding of moss roses. Attainment of success along this line has been far more difficult and time consuming than anticipated.

Usually all the undesirable features of the Moss rose parent came through in terms of excessive thorniness of the rose plant stems, with but little moss on the sepals. Also the everbloom-



Figure 2. Crested Moss

ing character of the Hybrid Tea parent was lost in the F_1 generation. Finally, however, I now have everblooming moss roses with a degree of moss on the buds comparable to the lovely old fashioned moss roses, such as Golden Moss and Pink Moss.

And very recently I have successfully crossed the Little Darling with Crested Moss. For many years, rose breeders have been trying without success to obtain hybrids between the Crested Moss rose and Hybrid Teas or Floribundas, so this hybrid with the floribunda Little Darling is the cause of much rejoicing. Seedlings have bloomed for the first time this year.

As shown in Figure 1, the unusual Crested Moss rose characteristic has "come through" completely in its expression even though present in only those chromosomes from the pollen parent, Crested Moss. (Compare with Crested Moss shown in Figure 2.)

As may be easily seen the flower has much of the fine bud form of Little Darling and relatively few thorns on the stem. It has good foliage and a flower of bright pink color. The seedling on the right is bright red, very double, but has no

anthers and sets no seed. The bright pink seedling fortunately sets seed so we have here the start of a new breeding line by which we hope to eventually get Hybrid Tea sized flowers of excellent bud form and ever blooming behavior.

This unusual recent example is typical of the way much of the progress in rose breeding occurs. It certainly is not the result of the slow accumulation of minute differences and mutations, as one would expect on the basis of the evolution theory. Significantly, the Crested Moss rose had a sudden and rather mysterious origin which would seem to involve the transformation of one or several gene loci at one time.

Observations About Roses

After working with and carefully observing moss roses, including many hybrid seedlings over a period of about twenty years, it appears that the following observations may be made:

(1) Sterility is a constant problem and in fact is a major limiting factor in breeding new and improved varieties.

(2) In some crosses, such as those involving Joanna Hill (Hybrid Tea), albinism is also a

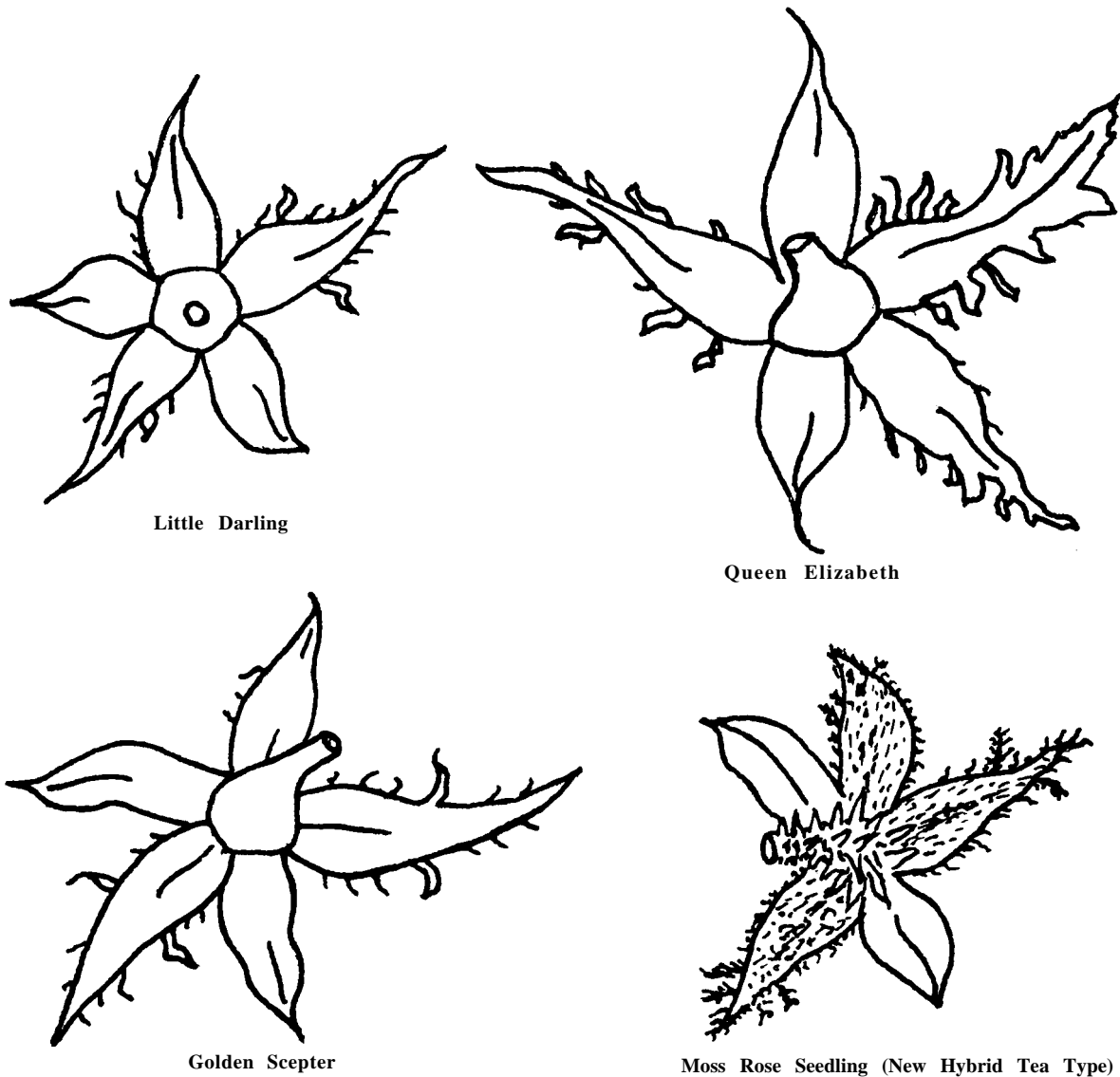


Figure 3. Five sepal pattern, showing two mossed (or foliated), one plain, one mossed, and one plain petal, in clock-wise rotation, in all varieties.

limiting factor, as many as 25% of the seedlings completely lack chlorophyll and thus die soon after sprouting.

(3) The same five sepal pattern is present in all varieties, both moss and non-moss. Three are larger and/or longer. These show the extra foliaceous parts or moss, depending on whether they are the usual varieties or moss roses. These are arranged so that two mossed or foliaceous are together and the third mossed (or foliaceous) sepal is opposite. On either side of this single mossed sepal are the two smooth margined sepals. Thus the pattern is two mossed (or foliated), one plain, one mossed and one plain. (See Figure 3.)

These two plain sepals in the tight bud are overlapped by the three mossed (or foliaceous) sepals, and may at times show just a narrow line or portion of the sepal mossed. This is true of the modified thorn type moss rose, as well as the Crested Moss.

(4) The amount of mossing or extra foliaceous parts on the sepals may vary with the variety, plant vigor, season of the year, and age of the plant.

(5) This phenomena (Mossing) and its related extra foliaceous parts on non-moss varieties may not be far removed from what is called "proliferation" (extra petals, buds, flowers and/or foliage

arising as a deformation—usually in the center of a spent rose bloom).

This is carried to its extreme limit in *Rosa viridiflora* (the Green Rose) in which there are no true flower parts but only a rosette of leaves which mimic a flower. Again, reproductive parts are damaged or missing with resulting sterility.

(6) There has been much speculation on the origin of moss roses (practically all such information dealing only with the thorn-type moss)³—the generally accepted idea being that moss roses, including the modified thorn type (*Rosa centifolia muscosa*, cultivated prior to 1750—See *Modern Roses VI*—there is evidence that forms of moss rose were cultivated as early as 1696) and the more rare Crested Moss (*Rosa centifolia cristata*, 1827, *Modern Roses VI*) originated as sports from forms of *Rosa centifolia* (Cabbage Rose; Provence Rose in *Modern Roses VI*).

(7) Having worked in moss rose breeding experiments over the past 18 years (making slow progress until recently), I would like to suggest the idea that both types of moss roses very likely originated as sports (mutations), *not by adding something new* (moss) but by a change in the DNA message produced by suppression (blocking or partial blocking) of a normally present inhibitor (or complex).

That this tendency to extra sepal foliation (within controlled limits) is always present cannot be denied (see drawings). It is an observed fact on all varieties and types of roses studied—Hybrid Tea, Floribunda, Grandiflora, Polyantha and Miniature.

(8) In breeding, I have observed that the moss factor tends to behave as a dominant (a fact also observed in 1840 by the eminent English nurseryman, Thomas Rivers). This similar trait of dominance (for the miniature phenomena) is also observed in breeding miniature roses.

However, it is my thinking that “miniaturization” is caused by an inhibiting influence or factor rather than strictly a factor for dominance (See *All About Miniature Roses*, Chapter 19). Variation in expression of moss rose traits is shown in Figure 4.

This is my present thinking insofar as moss roses are concerned. Such inheritance mechanism (or substance) as I have suggested may be a complex which includes, or is in close association with, the observed phenomena of moss roses, extra foliar sepal parts and, possibly, proliferation.

(9) The normal rose flower then is kept within certain guide lines (could also apply to thorns since the thorn type moss seems to be made up of special thorns and oil glands) by the “master”

DNA message. This would include normal sepal foliation. Yet, when certain of the guide lines are altered (temporarily or semi-permanently) by removal or change of the controlling suppressant (inhibition), then the phenomena of mossing, either in the “modified thorn” type, or the “crested” type may appear.

Now, such mutations are not necessarily an advance insofar as the plant is concerned and, in the case of mossing, it adds the burden of growing these superfluous parts. Also, as has been observed, sterility and other problems seem to be associated with mossing and present difficulties for the rose hybridizer. Certainly such plants would be at decided disadvantage in the natural state.

(10) It appears that moss roses (especially the Crested Moss form) might be considered genetically in the same category as cristate forms of Cacti—an abnormal form, of interest horticulturally, which renders the plant—so afflicted—less able in various respects to survive in nature. These (moss roses, etc.) are thus mutations on the minus side rather than the plus.

It appears to me that, in certain areas, we might think of mutations as: (a) temporary and abnormal aberrations or changes. By “temporary” I do not mean that all mutations are likely to revert to the parent or original form immediately. They may persist—often with the help of man—for generations.

(b) plus (positive) and minus (negative) phenomena—that is, plus (+) is the genetically normal form for the species (or variety); minus (–) would include all those changes or mutations involving less than the full state or complement of genetic factors. This idea might be a way of explaining (understanding) how we can get such significant changes as the crest (cristate) form of moss on roses in a single cross.

(11) Therefore, I suggest that the observed Crested Moss phenomena may be caused by an inhibiting influence which, for the time being, covers or masks out certain portions of the full DNA code for the normal type thus allowing this straying (an ever-present possibility) from the norm. Nothing is being “added.” In a sense, the plant is merely “side stepping.”

Conclusions on Miniature Roses

My conclusions after working with miniature roses are in certain respects similar to those resulting from my moss rose work as outlined above. It might well be asked if *Rosa rouletti*, the little Swiss fairy rose is really as old as suggested. Is it really one of the older French varieties (Pompon de Paris) which somehow survived and was thus rediscovered? Was the



Figure 4. Variations in expression of moss rose traits. Left to right: Salet, Gothe, and unidentified Old Rose-Crested Moss type.

island of Mauritius the true and/or only source of discovery of this mutation, *Rosa chinensis minima*?

I have long doubted some of these contentions. In my breeding work it appeared that the miniature factor behaved as a dominant, as it need only come from one parent. Although my breeding work has long been conducted with this in mind, I was not satisfied that it was the true answer. Might it not be an inhibitor which prevented the "message" for "normal" from being delivered? But some men questioned this theory on the basis that a positive "dominant" gene might be easier to explain.

Now, with the discovery (by Dr. Bonner) that the histone covering, or sheath, can block part of the DNA "message," this might furnish a clue. Again, the question is brought up that the histone sheath is not transmitted. But some similar message could be (and very likely is) transmitted to succeeding generations to block the complete, or "normal" message. Since the miniature factor seems to be also linked to the sterility/fertility factor, and since this phenomenon appears whether the miniature is inherited from the male or female parent, such linkage cannot be ignored.

Several years ago I made some interesting crosses. One was *Rosa wichuraiana* x Goldilocks; the other was *R. wichuraiana* x (polyantha seedling x Goldilocks). Since the climbing (tall) factor is dominant, all seedlings in this F₁ generation were climber and once blooming (spring flowering). But instead of being strong climbers with intermediate sized flowers they were almost, without exception, miniature climbers, 1½ to 4 feet tall and bore flowers about one inch in diameter—most in white to cream color. With but one or two exceptions, all were female sterile. I did not check for male fertility.

Then, more recently, I have grown three different lots in different years of self-set seed gathered from an isolated plant of Old Blush (Parson's Pink China) —supposedly in cultivation before 1759.

Germination was rather poor, but from the first lot a number of the seedlings were definitely of the miniature type. In seven years, several of these have grown no more than 7 to 12 inches in height. One (only 7 inches high) is semi-double with flowers the same color as *Rosa roletti*.

Another (# 23-57-2) grew only about 8 inches high with tiny double flowers resembling the

miniature Peggy Grant. Another grew about 10 inches with double flowers resembling Pink Joy (a seedling of Oakington Ruby) in both color and form. Yet another produced 1¼ inch semi-double lavender blue (magenta) flowers on a 12 inch plant.

Several set seed hips but seeds often contain no embryo. Germination has been very poor from any of these seedlings. However, some seedlings of the, lavender blue (Mr. Bluebird) variety have been grown. All are miniature—usually with very narrow lance shaped petals and so far all have been female sterile but some pollen is produced.

The other lots grown from Old Blush, although in smaller lots, gave similar results.

Miniature Roses Not Magic

Now, in view of the above and many other observations, I believe that *Rosa rouletti* may not be as old as supposed. It may even be a fairly recent seedling from one of the old China varieties such as Old Blush. The miniature factor (or more likely an inhibition linking both size and sterility) can and has arisen in various times and places. Since this phenomenon is apparently caused by an inhibition, or blocking of the "normal" (complete message) factors for rose size, fertility (and other associated phenomena), it may not only appear when "blocking" occurs, but may be reversible and may disappear with removal of blocking and return to normal.

Blue and lavender miniature roses can be produced as they are with hybrid tea and floribunda roses, insofar as these colors are possible. There is apparently no possible source of true blue in roses. (There are those who believe that at some magic moment a chance mutation will bring this about.)

So called "blue roses" are merely those in which the magenta has the ascendancy. Lavender color apparently is produced by the combina-

tion of magenta and yellow. Some will doubt this, but about 15 years ago in a conversation, I told Dr. Fred Nisbet, then Executive Secretary of the American Rose Society, that I believed such to be the case. A check of the pedigree of so called lavender roses will show that this is true.

I have made crosses a number of times using the old multiflora rambler, *Violette*; i.e. *Violette* x *Zee* (pollen from most other miniatures has failed). From such crosses have been selected several miniatures, both bush and climber, showing pinkish-lavender to magenta colors. The "bluest" of these is *Purple Elf* which at times is petunia purple. All these are very difficult to propagate.

More recently I have produced a really lavender miniature rose from a cross of *Ellen Poulsen* x (*Little Darling* x *Zee*). The male parent (*Little Darling* x *Zee*) is yellow aging to pink and light red similar to *Baby Masquerade*. Thus our lavender miniature was produced exactly as set forth above: magenta in combination with yellow.

There is no trick; there is no magic involved in producing any new rose, miniature or otherwise. All that we call new is but the old in a different combination. These principles and the materials are basically the same—today, or in that yesterday we call Creation. God is the same yesterday, today and forever. All we do is think God's thoughts after Him.

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REINTERPRETATION OF FACTS BEHIND THE THEORY OF EVOLUTION

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Variations among organisms within a particular kind do not lead to the formation of new kinds or alter God's design that organisms reproduce "after their kind." So-called evidence for the theory of evolution is merely persuasive or circumstantial, and can be used to support the Genesis account as well as the theory of evolution. All that is really known is that organisms vary markedly due to changes in genetic make-up and due to interactions with the environment. God has designed the living world of different types of organisms to survive by adapting to changes in conditions.

First of all there is such a thing as genetic variation which produces a marked degree of variation in living organisms of any particular type:

1. There are systematic variations in offspring due to recombination of genes, expressed as

dominant and recessive characteristics.¹

2. There are less systematic variations due to gene and chromosome mutations. Mutations may be small or great, and they usually affect the viability and the fertility of the organism and its offspring.

Organisms as individuals and as groups do adapt themselves to their environment and to changes in environment:

1. It is logical that those organisms which are better fitted genetically will live longer, reproduce in larger numbers, and become more deeply entrenched.

2. Those with a less favorable genetic make-up may not live as long in competition with others and with the environment, will probably decrease in number, and may migrate to another environment where there is less competition and where their particular genetic makeup is used to advantage.

3. These causes of variation and divergence among offspring have the effect of producing **variations among organisms within a particular kind and often work toward the survival of the best of the organisms within a particular kind.** But these do not lead to the formation of new kinds nor alter God's design that organisms reproduce after their kind.

None of the above points prove evolution to be true or the Bible to be false; neither do they require a mythical interpretation of the Bible.

It is only reasonable to believe the following:

1. The original creation included each basic kind of organism endowed by God with the genetic makeup and potential making it possible for a maximum of versatility and genetic adaptability to future changes in the environment. This would guarantee survival of the various types of organisms in a variety of environments, and also guarantee their ability to reproduce themselves in a manner capable of keeping the earth populated until the end of time.

2. Divergence into a large number of varieties (and what some taxonomists now call species) could occur without violating the concept of God creating all of the basic types of organisms; such as,

(a) specific but normal traits could become evident in subsequent generations as a result of interactions with the various types of environments encountered,

(b) some more pronounced variations might come from mutations, but these would almost always be eliminated by natural selection, and

(c) in addition to variations in environmental conditions from one location to another, it is possible that world wide changes and environmental conditions from one time to another would require adjustment by living things. This is where natural selection could play a part, but the importance of changes in environment should not be underestimated. An illustration of this might be the fact that in Adam's day men lived to be approximately 900 years old, but sometimes

after the Flood, life expectancy decreased to approximately 70 years.

The Second Law of Thermodynamics indicates that, from a general point of view, all forms of energy in the universe (or in any closed system) are being transformed into heat energy. The end point of this trend is generally referred to as heat-death, and refers to a time when supposedly all matter in the universe will be randomized and at a uniformly low temperature. This gradual increase in the percentage of disordered energy is referred to as an increase in entropy. It should be pointed out that this principle cannot be ultimate in nature, or it would have been impossible for the organized universe and for living things (and thinking individuals) to originally come into existence; thus, we should consider the following:

1. The non-living universe appears to be running down like a watch that was originally wound up and allowed to run down. Another common illustration is that the universe is like a great furnace that was originally lighted and stoked, and is now in the process of burning out.

2. However, there is no evidence that living things are actually following the Second Law of Thermodynamics as long as the world will remain well suited for organic life and a wide diversity of living forms will populate its surface. Living things as we know them in nature, certainly did not create, wind up, or stoke the universe in the beginning.² But the existence of an organized universe and growing, reproducing, diversified life certainly could be explained as the handiwork of a powerful, intelligent Creator.

3. Also there is really no coercive evidence that there is a "creative trend" in genetic factors of any given type of organism. So called evidence for the theory of evolution is merely persuasive or circumstantial (such as fossils and anatomical differences) and can be used to support the Genesis account as well as the theory of evolution.³

Total evolution, or the concept that living and extinct organisms have come from a common ancestor (solely through the action of natural laws), seems extremely unlikely regardless of the time allowed. By this we mean human beings descending from ape-like, shrew-like, dinosaur-like, fish-like, and amoeba-like organisms.

Charles Darwin and modern Evolutionists rely on variations and the laws of variation to produce the gradual changes by which natural selection supposedly results in total evolution. Darwin relied upon fortuitous variations, and evolutionists today rely upon better known genetic mechanisms, but the Christian considers these marvelous phenomena to be evidence of God's power,

design capability and purpose (see Romans 1:19, 20).

4. Rather than total evolution being proved, all that is really known is that organisms vary markedly due to changes in genetic makeup and due to interactions with the environment (and changes in environment due to migration, isolation, catastrophic change). Much of this evidence of variation is circumstantial, but some of it is valid and coercive, such as that which comes from breeding experiments.

5. God has designed the living world of different types of organisms to survive by adapting to changes in conditions. He has given each kind a distinctive genetic makeup capable of variations so that each kind can adapt to change. Individuals cannot survive; particular variations within a kind do not all survive (extinction); and even some kinds may not survive catastrophic changes in environment (for example, dinosaurs became extinct either before the Genesis Flood, or in the climate and environment following it).

Conclusion

It is certainly true that Christians derive their faith in God from the Bible. It is also true that Creationists, Theistic Evolutionists, and some Naturalistic Evolutionists believe in an ultimate organizing power and process, based on observations of the universe and nature. The difference is that Agnostic Evolutionists believe that this ultimate principle is non-personal, non-intelligent, and is a fortuitous set of eternal laws of

nature and that intelligent beings are the product of these laws and forces.

Creationists and Theistic Evolutionists, on the other hand, believe that a living, intelligent, powerful Being is the ultimate source of the universe, the non-living world, living things, and human society. Considering the ambiguous faith required by those who believe in both evolution and the Bible, we find it hard to justify the position of the Theistic Evolutionist. God thwarts the wise and reveals himself to "babes" (Matt. 11:25-27), and to the mature (2 Cor. 2:15).⁴

Notes and References

¹Not a random recombination since in normal meiosis specific genes are linked with specific chromosomes. See Simpson, Pittendrigh, Tiffany, *Life: An Introduction to Biology*. New York: Harcourt, Brace and World, 1957.

²Clark, R. E. D., *The Universe: Plan or Accident*, Philadelphia, Muhlenburg Press, 1961, pp. 15-25. Morris, Henry, *The Twilight of Evolution*, Grand Rapids, Baker, 1964, pp. 33-37.

³"Evidence is coercive [when] it admits of only one interpretation." Evidence is pervasive when it is subjective and capable of explanation from more than one point of view." Marsh, F. L., *Evolution or Special Creation?* Washington, Review and Herald Publ., 1963, pp. 4, 6.

⁴"It is not . . . a question of whether God has deceived scientists concerning the matter of origins if Genesis should turn out to be true. The real question is whether God has deceived those who have taken the Book of Genesis seriously if the modern uniformitarian and evolutionary view of origins should turn out to be true." Whitcomb, John, Jr., *The Origin of the Solar System*. Philadelphia, Presbyterian and Reformed Publ., 1964, pp. 28, 29.

A COSMOLOGICAL DEVELOPMENT

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A major developer of the steady-state theory, Prof. Fred Hoyle, has reversed his position. He has announced that he has discarded this widely known cosmological formulation. Such a change in the thinking of a leading astronomer is relatively unimportant to the fundamental Christian. Yet, it is another evidence that modern science is imperfect and limited severely in the area of cosmology. Cosmological speculations, as such, are not anti-Christian; however, cosmology must contain a truly Biblical cosmogony to be acceptable to the Christian.

In recent months, modern astronomers have witnessed one of the most important theoretical developments of this decade. Prof. Fred Hoyle, of the University of Cambridge and one of the leading theoreticians in astronomy today, has repudiated the controversial steady-state theory.¹

Hoyle, together with Hermann Bondi and Thomas Gold, was one of the developers of the steady-state theory in 1948. Since that time he has been one of its chief proponents and has succeeded, through his popular writings, in making the theory widely known.

The steady-state theory, in common with other cosmological theories, has as its goal the under-

standing of the universe, including the question of its origin. According to this theory, the universe is in a continual state of expansion.

To account for the expected decrease in the average density of galaxies in the universe, it is assumed that new matter is created **out of nothing** in empty space. This matter condenses into new galaxies. The rate of creation of matter just balances the expansion of the galaxies so that a galactic observer would see essentially the same picture of the universe at any time, no matter where his location in the universe.

Necessarily, if this theory be true, the average density of galaxies in the universe has remained

constant throughout history. It would seem to be a simple matter to test this through observation. Unfortunately the test requires observation at the extreme limit of optical means and no conclusive data has been obtained.

Recently, however, data from several unrelated areas has seemed to contradict constancy of density of galaxies with time. The cumulative weight of the arguments has caused the reversal in Hoyle's position. He states, "it seems likely that the idea will now have to be discarded, at any rate in the form it has become widely known—the steady state universe."²

Observations by radio astronomers have supplemented those of optical astronomers. Martin Ryle and his associates, also of the University of Cambridge, have counted radio sources rather than galaxies. Their results indicate that the universe was more dense in the past than it is now. In particular, red-shift measurements from a relatively small sample of fifteen quasi-stellar objects yield values which confirm a state of higher density in the past.

Recently a group of Bell Telephone Laboratory scientists have detected a radio background at a 7.3-cm wavelength. No known astrophysical process accounts for this. On theoretical grounds, however, it can be shown that this *might* be a consequence of an original high density in the universe. Similar results follow from observing the helium to hydrogen ratio in stars and nebulae, and in a theoretical explanation of the structure of elliptical galaxies.

Hoyle has now adopted a model of the universe which is best described as an oscillating universe. In this, localized portions of the universe are subject to pulsations which may result in non-uniform high density condensations of

matter. The non-uniformities act as "the seeds for the next generation"³ of galaxies.

The foregoing has briefly summarized the arguments causing Hoyle's reversal of position. It is likely that this is the beginning of the ultimate demise of the steady-state theory. In a sense, the "king" has abdicated and the "followers" are left leaderless.

The question might well be asked at this point, What are the implications for Christianity? To the author's way of thinking, this development, although deserving of widespread dissemination, is relatively unimportant to the fundamental Christian. It is but one of many instances where modern science has failed to reach the level of truth already revealed in the Bible. The fact that the steady-state theory is apparently on its way to joining the already discarded cosmological theories of Einstein, Milne, Lemaitre, Eddington, de Sitter and Godel is only another evidence that modern science is imperfect and limited severely in the area of cosmology, particularly in its cosmogonical aspects. In truth, "the natural man receiveth not the things of the Spirit of God."

God has given a clear cosmogonical statement in the opening chapters of the Bible. Any cosmological theory not founded upon this statement is faulty. Cosmological speculations in themselves are not anti-Christian; however, cosmology must contain a truly Biblical cosmogony to be acceptable to the Christian. This is the challenge which Christianity offers science.

References

¹F. Hoyle, "Recent Developments in Cosmology," *Nature*, October 9, 1965, pp. 111-114.

²*Ibid.*, p. 113.

³*Ibid.*

COMMENTS ON SCIENTIFIC NEWS AND VIEWS

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L. B. Quesnel, in a note in *Nature*, Vol. 211, pp. 659 and 660, 6 August 1966, describes some "snapping movements" seen during the division of *Escherichia coli*. It appears that, during division, the parts, or one of them, writhe about, presumably to "help" the separation. This fact may be interesting as another example of the real complexity of even so humble a creature.

Antibody Formation

On pp. 28 *et seq.* of *Scientific Research* for August, 1966, is an article describing some experiments on the formation of antibodies as a defense against the antigens which can cause infection.

It has been supposed that the antigens somehow controlled the formation of antibodies, may

be by acting as "templates." The experiments described, though, seem to show, by radioactive tracers, that the antigens never get to the cells in which the antibodies are formed. Evidently the process is more complicated than has been supposed.

The notion of the "genetic code," as it is ordinarily expounded, seems to be another theory of "templates." Now that one such theory seems to be in difficulties, it may be well to examine others critically.

On the Nature of Dreaming

A report on p. 14 of the *Whig-Standard*, Kingston, Ontario, Canada, 30 August 1966, deals with suggestions by F. Snyder, of the National

Institute of Mental Health, Bethesda, Md. about the nature of dreaming.

It appears that human beings, at least, dream mostly during light stages of sleep, which are marked, among other things, by rapid movements of the eyes. Many animals show the same physical signs.

Of course, people think that they must bring "evolution" into this somehow. The best suggestion that can be made is that the light stages of sleep served, and serve, as opportunities to notice danger and to awake. It seems hard to believe that this would affect "survival" very profoundly. For either the animal (or man) sleeps in a fairly safe place, where intervals of light sleep are not needed, or else it is going to be caught anyway during the intervals of deep sleep.

What can a creationist say about this matter?

First of all, God has used dreams to instruct men (Job 33:15 and 16), especially in olden times. But this has happened only occasionally. Is there also some universal purpose?

We must consider also that infants sleep much of the time, and presumably spend a good part of the sleep in the light stage. Yet they could not use these light stages to notice danger. Why do they sleep so much? For that matter, why do we sleep at all?

Consider the analogy of a factory. All day it runs, making whatever its product may be. At night it is shut down—but not quite. Cleaning is being done, repairs made, perhaps alterations and enlargements. Can something like this be happening to us while we are asleep? Certainly it is a common experience that much healing comes then.

So two important things may come while we are asleep: communications from God, and repair and maintenance. Let us seek a connection between these.

First, our original development is, in some sense, under God's control (Psalm 139:13-16); so it would seem not too far-fetched to say the same of maintenance. Yet this maintenance needs also our co-operation, in some way. Any physician could think of people who do not get well, apparently just lacking the will to do so.

If will is involved, then mind; not in the way in which mind is involved in conscious thinking, but in the way in which it is involved in the beating of our hearts, in our process of digestion, and so on. We can believe that such a thing is possible, for we know of an intermediate case: breathing, we can control consciously, but which goes on most of the time without our conscious attention.

Is it possible, then, that the reason for sleep is to give our mind time to direct our growth (which

would be especially important when we are young, hence young people need much sleep) and maintenance? During this time we receive directions for these processes from God (whether or not it be through some intermediary). Occasionally, upon waking, we remember parts of these actions of our minds, but naturally interpret them in terms of our conscious experience; just as if a man were to find some fragments of a book of instructions for something, and to read them on the assumption that they were part of a novel.

The suggestion just made may seem opposed to the notion that genes and DNA are involved in our development and (presumably) maintenance. But it need not be so, if we consider the genes, DNA and whatever else of this sort there may be, as tools, as it were, used by an intelligence which directs the work. Any way, it seems easier to believe this than to believe that unthinking cells and molecules somehow work out the forms of things.

This viewpoint may help us with an old problem. Plato believed that we are born with the forms (in his sense of the word) of things in our souls (again in his sense) already, so that we have just to recognize things in the world around us. Aristotle, on the other hand, while he granted that "the soul is the place of forms," considered that the forms arise from our perception and experience.

But there is a difficulty here: without some prior notions, our experience would mean nothing to us. As Berkeley pointed out, in his *New Theory of Vision*, a man born blind and made to see would at first not see objects and scenes, but merely a jumble of colors. Nay, more, as Owen Barfield noticed in his books, *Poetic Diction* and *Saving the Appearances*, he would not even see colors, not yet having learned to do so. So it seems that we must already have the forms before we can get them. A way out of the difficulty is to grant that they are imparted by God, during our sleep. Jumbled memories of the actual process of imparting could again be what we call dreams.

(It is worth noting, in connection with what was just said, that the *physical miracle* of making a blind man see, as it is recorded in St. John, Ch. 9, is hardly greater than the *psychological miracle*, which apparently happened at the same time, of making him interpret his seeing without waiting for any period of learning and experience.)

In summation, then, might sleep be a time for receiving instructions, ultimately from God, for our development and maintenance; and might dreams be jumbled memories of what happens during this instruction?

Radioactive Carbon Variability

Since the age of things is claimed to be indicated by the amount of radioactive carbon in them, and since any attempt to date the things in this way must involve some assumptions about the amount with which they started, any possibility that that amount might have varied should be carefully investigated.

V. S. Venkatavaradan, in *Nature*, Vol. 208, p. 772, 20 November 1965, has found an (anti) correlation between the amounts of radioactive carbon and the sunspot activity from 1870 to 1940. The variation in radioactive carbon amounted to 2% or a little less.

Earlier, M. Stuiver, in the *Journal of Geophysical Research*, Vol. 66, pp. 273 *et seq.*, 1961, investigated the amounts of radioactive carbon, apparently by working with tree rings, especially over the times from 1400 A.D. to the present,

but with some consideration of somewhat earlier times. He also found about 2% variation, related to the sunspot activity. (It is not too clear how the information about sunspots in the earlier times was obtained, whether by extrapolating the cycles or some other method.) Apparently sunspot activity and the amount of radioactive carbon correlate over long times; over short times delays in the taking up of the carbon (presumably), make the relation more of an anticorrelation.

Thus it has been shown that the variation in sunspots, which, to look at it, is a rather minor thing, can cause noticeable variations in amounts of radioactive carbon. How much more must the things which happened at the time of the Flood have affected it! In this respect, as in so many others, the Flood was truly a turning point in the history of the world.

BOOK REVIEW

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Surtsey; The New Island in the North Atlantic by Sigurdur Thorarinsson. Publisher: Almenna Bokafelagio, Reykjavik, Iceland, 1964.

This little volume consists of 31 pages of text, written in Icelandic by the Icelandic geologist Thorarinsson. It is followed by 24 pages of English translation by Solvi Eysteinnsson.

The remainder of the work, consisting of some 50 pages, contains the photographic record of the birth and development of the island of Surtsey. Most of the photographs are in color, and are most beautiful. This new island lies approximately 70 km. south of Iceland proper.

Iceland is believed, according to present theory, to be an emergent part of the Mid-Atlantic Ridge. This is the most tremendous mountain system on earth, running the length of the Atlantic Ocean. The center part of the Ridge is undergoing tension, indicated by the rift valley that extends for most of its length. The rift is indicated on Iceland by the numerous gaping fissures that are found through the middle belt of the island. Surtsey Island is considered to lie on the underwater extension of the ridge.

The story of the birth and development of the island is very fascinating, documented as it is by the series of photographs that are part of the book. Probably the most fascinating aspect of the whole record is the rapidity with which the island developed, as well as the series of changes it underwent in the process. In view of the usual approach to geomorphology, the para-

graphs included below make fascinating reading. The summary, as it were, begins on page 52 of the English translation, where we read the following:

And when they now wander about the island which was being born then, they find it hard to believe that this is an island whose age is still measured in months, not years. An Icelandic, who has studied geology and geomorphology at foreign universities is later taught by experience in his homeland that the time scale he had been trained to attach to *geological developments is misleading* when assessments are made of the forces—constructive and destructive—which have moulded and are still moulding the face of Iceland. What elsewhere may take thousands of years (is this necessarily so in the light of what follows?—W.H.R.) may be accomplished here in one century. All the same, he is amazed whenever he comes to Surtsey, because the same development may take a few weeks or even a few days here.

On Surtsey, only a few months have sufficed for a *landscape to be created* which is so *varied and mature* that it is *almost beyond belief*. Here we not only have a lava dome with a glowing lava lake in a summit crater and red-hot lava-flows rushing down the slopes, increasing the height of the dome and transforming the configuration of the island from one day to another. Here we can also see wide

sandy beaches and precipitous crags lashed by breakers of the sea. There are gravel banks and lagoons, impressive tephra (basaltic ash) cliffs, greyish-white from the brine and silicium which oozes out of the tephra, giving them a resemblance to the White Cliffs on the English Channel (the White Cliffs or Chalk Cliffs of Dover). There are hollows, glens and soft undulating land. There are fractures and faultscarps, channels and screes. There are often furious gales and sandstorms, which reduce visibility to zero, and Aegir, the Northern counterpart of Neptune, deals blows of no less violence. You may come to a beach covered with flowing lava on its way to the sea with white balls of smoke rising high up in the air. Three weeks later you may come back to the same place and be literally confounded by what meets your eye. Now there are precipitous lava cliffs of considerable height, and below them you will see boulders worn by the surf, some of which are almost round, on an abrasion platform cut into the cliff, and further

out there is a sandy beach where you can walk at low tide without getting wet. The next time you are there, glowing lava-falls rush over the sea-cliff. One day, the surf may cut a large section out of a tephra wall. The next, the lava may spread across the sandy beach, protecting the cliff from further inroads by the sea. (Emphasis added)

At another page, reference is made to the work of the Canadian geologist, W. M. Mathews, who has explained the formation of some mountains in British Columbia, referred to as *tuyas*, in the same fashion as the structures that are basic to Surtsey. It is also postulated that diving explorations would reveal that the base of Surtsey would show the presence of pillow lavas.

Could one raise the question as to the validity of the assumptions underlying time scales of geomorphology at this point? On this point alone, this book makes extremely fascinating reading. And a further plus is the superb photography which copiously illustrates the action. I suggest it is well worth reading.

ARTICLE REVIEW

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"The Biological Nature of Man" by George Gaylord Simpson. *Science*, Vol. 152, No. 3721, p. 472, 22 April 1966.

Since this article is written by a well known writer and published in a magazine of wide circulation, no doubt it is widely read. It gives some valuable data but they do not all point toward the over-all interpretation of the author. The principal emphasis of the article is negative: man is nothing more than an animal.

Simpson makes a dogmatic statement that man developed by evolution, and deliberately passes by all argument for creation. He writes:

Darwin's own contribution to the problem of man's origin firmly established two points: first, *Homo sapiens*, like all other organisms, has evolved from prior, extremely different species by natural means and under the directive influence of natural selection; and second, man is the descendant of apes or monkeys of the Old World. (Page 472.)

Thus, while many of Darwin's ideas have been questioned and even disproved, the author considers them sacred. He even says that all statements about the nature of man made before 1859 are worthless and we will be better off if we ignore them completely. A writer who thus, with a stroke of his pen, disarms all scholars and philosophers of more than a century ago, can hardly be depended upon to draw a true picture of man.

The author remarks that Darwin was surprised that Neanderthal man, the typical cave man type, had a brain larger than ours. He would be more surprised if living today, to learn that in 1947, at Fontchevade, France, a trained archeologist found two skulls of modern type lower than tools of Neanderthal man. Since the skulls were separated from the tools by a layer of secondary limestone they had not been interchanged but the men of modern type were the older.

Simpson does, however, state a number of facts about man. Man is distinct from animals in the use of fire and tools. While a few animals use a stick or a stone in a simple manner, they never make tools. The author gives a list of human anatomical traits:

Normal posture is upright.

Toes are short, the first toe frequently longest and not divergent.

The vertebral column has an S curve.

The hands are prehensile, with a large and strongly opposable thumb.

Most of the body is bare or has only short, sparse, inconspicuous hair.

The joint for the neck is in the middle of the base of the skull.

The brain is uniquely large in proportion to the body and has a particularly large and complex cerebrum.

The face is short, almost vertical, under the front of the brain.

The jaws are short, with a rounded dental arch.

The canine teeth are usually no longer than the premolars, and there are normally no gaps in front or behind the canines.

The first lower premolar is like the second, and the structure of the teeth in general is somewhat distinctive. (Page 475.)

This is a valid list of distinctive anatomical traits and the list applies to all members of the species. The author does not mention that these traits do not gradually intergrade with other species as one would expect if man developed by a series of small changes from animals.

The author thinks the use of language is man's most characteristic trait. Animals cannot be said to use language, for they never use words as symbols, but only utter cries which may be classified as interjections. If an animal is burned it may make a sound which means "ouch" but it never says, "Fire is hot."

Efforts to trace the evolution of language have failed. Simpson quotes J. B. Lancaster as follows: "The more that is known about it [that is, communication in monkeys and apes], the less these systems seem to help in the understanding of human language." (Page 477.)

Peoples with the least complex cultures have highly sophisticated languages with complex grammar and large vocabularies. Likewise ancient languages are highly complex. The use of language is a trait of all peoples, not simply of civilized ones. This excellent discussion of the value of speech to man does not contribute

to one's belief in man's descent from animals, and the author does not make such a claim; but in spite of the difficulty he still prefers to believe in evolution.

On the whole the article is significant for what it does not say about man. The discussion of physical characteristics and use of language is good, but very little is said about man's moral and spiritual traits. Man's sense of responsibility is mentioned only in the conclusion and is not discussed. Take away this sense of duty and propriety and we could have no civilization. Furthermore we could have no freedom if we had no more sense of right and wrong than the animals, for the government would have to fence us in.

The author does not mention that divine spark in every person called conscience, which prods him to do the best which he has been taught. How foreign is such a trait to even the most docile animal! It is really inimical to our welfare to erase the spiritual difference between man and animals.

If we believe man has attained his present state by natural selection, we delete our standard of right and wrong; for in the philosophy of natural selection, that which *succeeds* is *right*.

Man is pictured as an animal that speaks, builds, can be honest or dishonest, but without sense of responsibility, without conscience, without belief in divine rewards or punishments—what a dangerous animal indeed! When we really believe in evolution we are headed in that direction.

INDEX FOR CREATION RESEARCH SOCIETY ANNUALS AND QUARTERLIES

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