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THE HERITAGE OF CREATION CONCEPTS

Selected Bibliography Showing the Continuity of The Creationist Viewpoint

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INTRODUCTION (*continued*)

1930-1939

A. H. Clark, (zoologist), *The New Evolution—Zoogenesis*, the Williams and Wilkins Company, Baltimore, Md., 1930.

Though not adopting creationism, a type of polyphyletic formulation is offered as an explanation for the total absence of animal forms intermediate between major groups or phyla.

D. Dewar, (ornithologist), *Difficulties of the Evolution Theory*, Edward Arnold and Co., London, 1931.

The book was prepared to present facts that are difficult, if not impossible, to reconcile with the Darwinian conception of evolution even in modified form of the 1930's.

D. Dewar, *Man: A Special Creation*, Thynne and Co., Ltd., London, 1936.

Excellent source of qualifying statements by scientists plus very interesting data. Mentions scientific critics of Darwinism and/or Transformism: Bateson, Vialleton, Fleischmann, O'Toole, McCready Price, Berg, Carazzi, Dehaut, and D'Arcy Thompson.

A. Lindsey, (zoologist), *The Problems of Evolution*, Macmillan Company, N. Y., 1931.

Though accepting the fact of the occurrence of evolution, the author presents some reasoned considerations of the problem of inheritance of acquired characteristics. Concerned with origin of variations, he explores the possibilities of the Lamarckian view. On p. 109 he speaks of an evolutionist's "articles of faith."

P. Lemoine, (naturalist), "What Are the Theories of Evolution Worth?" *Encyclopedia Française*, Vol. V, Librairie Larousse, Paris, 1937.

Evidence of skepticism about evolution is found in the concluding essay which contains a detailed analysis of the difficulty of reconciling evolution with paleontology and biogeography. He states that specialists had come to the conclusion that the then current theories of evolution are inadequate and that evolution is impossible.

E. A. Milne, (mathematician), "Some Points in the Philosophy of Physics: Time, Evolution, and Creation," *Annual Report of the Smithsonian Institution*, 1933, pp.m 219-238.

Author presents some interesting thoughts on creation and wonders if it is ever-present. Relates concepts in title to admitted increase in entropy and to thermodynamics plus problems of existence of an observer.

H. Nilsson, (geneticist), "The Problem of the Origin of Species Since Darwin," *Hereditas*, Vol. 20, 1936, pp. 227-237 .

In an address at Lund University, Nilsson reviews contributions of Francis Galton and Hugo DeVries in correcting Darwin's acceptance of a Lamarckian view on origin of characters. Touching on conflict between Mendelism and evolution because genes were taken to be constant at first, he brings in T. H. Morgan's and Muller's contributions on mutation of genes. According to Nilsson, most mutants have not acquired new characters, but lost a gene; therefore, he concludes, ". . . investigations of the last three decades into the problem of the origin of species have not been able to show that a variational material capable of competition in the struggle for existence is formed by mutation."

G. M. Price, (geologist), *Modern Discoveries Which Help Us Believe*, Fleming H. Revell, New York, 1934.

Using a question and answer format all through the book, Price offers a summary of scientific facts used in many previous books to support his acceptance of the Flood theory of geology.

L. F. Spath, (zoologist), "The Evolution of the Cephalopod," *Biological Reviews*, Vol. 8, October, 1933, pp. 418-461.

An evolutionist admits loss of earlier optimism; calls for patient sifting of better evidence; relates recognition of many unsolved problems.

W. R. Thompson, (biologist), *Science and Common Sense*, Longman's Green and Co., London, 1937.

The author, both scientist and very competent philosopher, is mainly concerned about use and abuse of physics, mathematics and philosophy. His last chapter is devoted to concentrated criticism of evolution with which he has dealt to varying degrees in other chapters. He sees the concept of evolution as "an object of genuinely religious devotion" for most biologists; and says, "This is probably the reason why the severe methodological criticism employed in other departments of biology has not been brought to bear against evolutionary speculation."

1940-1949

L. DuNouy, (biologist), *Human Destiny*, Longmans, Green and Co., New York, 1947.

Author presents view in support of telefinalism — some final goal of mankind. Discusses mathematical improbability of events happening according to evolution.

J. M. Gillete, (sociologist), "Ancestorless Man: The

Anthropological Dilemma," *Scientific Monthly*, Vol. 57, December, 1943, pp. 533-545.

Gillette decries evolutionary dogmatism which he feels is behind genealogical trees of man printed in sociological, anthropological and biological works of that day. He calls for needed criteria of man as man. He proposes use of mutational concepts to explain man-like apes, and transitional fossil forms to "correct" the ancestorless nature of man in genealogical diagrams.

R. Goldschmidt, (geneticist), *The Material Basis of Evolution*, Yale University Press, New Haven, 1940.

Author seems to accept evolution and discusses at length possible large step "macro-evolution" during embryonic development. He supposes new sudden changes can arise as a result of alteration of chromosomes. His view is an antithesis to slow, cumulative change of Darwin and Neo-Darwinists.

A. Lunn, (editor), *Is Evolution Proved?* (A Debate between Douglas Dewar and H. S. Shelton), Hollis and Carter, London, 1947.

Following an excellent introductory chapter by the editor defining the issue, arguments of two scientists are presented. Dewar and the editor quoted skeptical statements of scientists and show why evolution should not be presented as a proved and demonstrated fact.

F. L. Marsh, (biologist), *Evolution, Creation, and Science*, Second Rev. Edition, Review and Herald Publishing Association, Washington, D. C., 1947.

Dedicated to openmindedness, the author does an excellent job in defining special creation and evolution plus clarifying common equivocation of latter term with variation by majority of biologists.

A. C. Morrison, (natural scientist), *Man Does Not Stand Alone*, Rev. Edition, Fleming H. Revell Company, New York, 1947.

Morrison marshalls an amazing array of arguments and new scientific facts from biological and

physical areas of study. He uses these to demonstrate his belief that an effective intelligence is behind the infinite adjustments of the phenomena of nature. The book is a challenge to the conclusion of *Man Stands Alone* by Julian Huxley.

G. M. Price, (geologist), *Genesis Vindicated*, Review and Herald Publication Association, Takoma Park, Washington, D.C., 1941.

Price examines an extensive number of statements by scientists for and against evolution. He gives much attention to "The Case Against the Evolutionary Ages," and in another chapter asks, "Was There an Ice Age?"

G. G. Simpson, (paleontologist), "The Problem of Plan and Purpose in Nature," *Scientific Monthly*, Vol. 64, June 1947, pp. 491-492.

Extensive work treating on history, plea for accomplishments, and criticisms of Darwin's *The Origin of Species*. Mutations, nascent (?) variations, purpose are discussed before a summary of modern synthetic theory with "illustration" of creative natural selection. Illustration involved essentially recombination of truly "created" elements (origin of which is never explained). Admits possibility of a Purposer as still deeper problem on which scientists, *as scientists*, cannot speak.

F. B. Summer, (biologist), "Is Evolution Inscrutable?", *Science*, Vol. 93, May 30, 1941, pp. 521 and 522.

This short "Discussion" open with agreement by the author with a reviewer (Dobzhansky) of R. Goldschmidt's book, *The Material Basis of Evolution* (Yale University Press, 1940), that acceptance of Goldschmidt's central theory demands a "belief in miracles." He points out that St. George Mivart in 1871 referred to large "jumps" due to intervention of the Creator. He concludes that Goldschmidt has not shown that a new, complex, adaptive change has occurred in correlation with change in many other body parts of an organism.

(More coming)

SCIENCE IS NOW PROVING THE GENESIS CREATION ACCOUNT IS CORRECT

By JOHN J. GREBE, *Physical Chemist*
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The person who feel the need of remaining a child of God often faces the incompatible viewpoints of the evolutionists and creationists. In this age it is difficult for one to question an almost universally held theory like evolution when it is purported to come from the Book of Science, even if it does conflict with the Book of God. It is not surprising that many, including theologians who know little about natural science, find it expedient to attempt to resolve these contradictions by putting God into the picture through various interpretations using the term theistic evolution. To me this compromise fails. Man is still sinful and in need of grace. The closer one lives with Christ, the more thankful one is for grace. Surely it is not the fault of God's incomplete "evolution" that pride and depravity are rampant. The evidence of God's Law written in the conscience of each person, both before and after Moses, is clearer than we want to admit.

It is the thesis of this short paper that Christians need no longer make peace with science in regard to the Genesis story of God's creation; that, indeed, science is now proving the ancient account to be right. In support of this we offer some recent developments and are willing to predict that many more will come as soon as it is no longer nonsense to point out the impossible odds against chance evolution.

During the Twenty's, when the impact of the principle of indeterminism in physics became evident, when the great difference between our understanding of the action of the laws of chance variations and the survival of the fittest and what must be the Great Cause of the immensity of the creation task became clearer, the evolutionary view became more untenable by anyone who tried to be "scientific." This is well-developed by Dr. Pollard in his book *Chance and Providence*. Recent DNA studies show a factor of 10^{14} against it. Dr. J. T. Jukes (p. 227, June 1963, *American Scientist*) points out, "There can exist about 4×10^{87} different nucleic acids." The admission of this fact has become quite common in recent years, even among those who take the materialistic point of view.

The materialists feel safe in their position because they "know" that the age of the earth and the six days of creation are not likely to be the six thousand years, and the six- twenty-four-hour days that some people have ascribed to statements about the Bible. However, science does not "know" the age of the earth. This can be estimated only if one assumes a uniform rate of change of all the factors involved, which is now known to be a most unlikely situation. God specifically defined the period of

light as day, and the dark as night while darkness was on the face of the deep before the sun was evident. This was during the first night of any suitable length of time. Currently both the untenability of the idea of uniform rates of geologic changes and the impossible odds against chance evolution of the DNA code are becoming matters of known fact.

Conditions of cosmic radiation alone are constantly changing. Even man has been able to affect the earth's magnetic, electrostatic, and radioactive surroundings with high altitude H bombs. So much so that evolutionistic scientists around the world are advocating stopping all tests in and above the atmosphere. *Their fear of increased mutation due to radioactivity belies their faith in evolution by mutation better than any other argument.*

In the days when the single cell of protoplasm was considered as the elementary item, evolution might conceivably have occurred in the two billion years postulated as the age of the earth, granting the assumption that adaptive mutations can be accumulated by natural selection. Now the cell has been found to be so complex that the longest time that anybody wants to ascribe to the age of the universe or the Earth is just plain trivial compared to the time that it would take to make one living cell from exactly the right raw materials under the most ideal conditions and with a frequency of, say, one per second for assembly and test and evaluation by the survival of the fittest.

If somebody thinks that evolution worked that fast, I would say "fine." "Now how far do you think you might get by that process?" He could not even show the most trivial chance of producing one single DNA molecule with 10^{87} varieties possible that would be able to match the RNA at the same time by any kind of a process even conceding stable planes as proven substratas assumed to be available at all times. After all, 10^{17} second is all that the maximum age of the earth provides and what is that against 10^{87} ?

Nothing could show and ridicule present advanced concepts of evolution any better than an article by George Gaylord Simpson, February 21, 1964, in *Science*. It honestly presents the problems of life on other planets even though Calvin and others have agreed there could well be one hundred million planets with exactly the right conditions such as found on our earth for such evolution to occur. The last column on page 771 starts pointing out the improbabilities in a qualitative way. Anyone willing to put even the most benign and condescending quantities into the picture and still insisting on evolution would merely have to infer

as Simpson does, that somehow the impossible must have occurred on earth because we're here.

All this neglects the many additional facts and details such as the replacement of 37 of the amino acids in our DNA with others after birth being built into the "memory" of the original DNA; nor, does it in any way even infer a mechanism by which the feedback on page 773 at the bottom of the middle column can possibly occur the first time when there is nothing to do the feeding into the new animate matter at the correct composition.

The Mossbauer effect, electron spin resonance, and the nuclear magnetic resonance phenomena all show that living organisms are not only a grand organ with billions of stops, but that organ is playing new and original music continually in the form of detectable electromagnetic waves. When I say original music, it is like no other music as generated anywhere else before; not even in your parents. It is very distinct and different.

One can ask any evolutionist to specify his time interval for evolutionary production and elimination by the process of the survival of the fittest, multiply by all the carbon on the earth available to the biosphere and divided into the greatest age that they're willing to stretch their imagination to, and reach the non-sensical result that so-called scientists accept. All of their thinking was based on single cells being a unit. Going back beyond this one point changes all concepts of complexity as pointed out by inference (not by numbers) in the Simpson article. Combining this with the relatively short-sighted article on the 28th of February, 1962, *Science* article by Gordon McDonald on the Deep Structure of Continents, from a uniformitarian point of view leaves one with even more confidence.

However, the H bombs are trivial in proportion to natural energy sources. Even the increase in the combustion of fossil fuels makes the carbon dioxide in the air a major influence for nonuniformity. Well' reasoned arguments indicate enough warming up due to the greenhouse effect to melt the polar ice caps and flood the earth 250 feet above sea level. The photosynthetic processes of plant growth were optimized at seven times the present CO₂ concentration. What would a still bigger change in the amount of water vapor in the air, or ice in orbit do to all this?

Man's lack of knowledge of the natural sciences has kept him from being able to comprehend the

meaning of much of what was written in the Bible, particularly the difficult passages in the Revelations of St. John. Successive new scientific facts are still refuting the so-called proofs of errors in the Bible based on evolutionary science. Even the *fall of man*, the *most crucial point at issue*, can now be understood as a purely physical phenomena exactly as recounted. Since Adam and Eve were "one flesh" in the fullest sense of the word, having exactly identical chromosomes, they felt and thought "at one" with one another," possibly until chemically "poisoned" by the forbidden fruit. The delicate balance of sensory structure that makes possible the mutual sharing of one another's senses, feelings, and emotions, known to exist between identical twins, might be diminished or destroyed by many naturally grown poisons. Perhaps this is why Adam and Eve felt separate, naked, and different from one another after eating the forbidden fruit. No wonder we find it hard to grasp the significance of and the awesome loneliness experienced by Christ on the cross, saying: "My God, My God, why hast Thou forsaken me?"

Since then only the most fortunate and unusual circumstances have produced genetically optimum progeny at any one place or time by normal processes. Virgin birth, with its attendant perfection of structure, perfect coordination and elimination of inner stresses, observed repeatedly under positive control during the breeding of laboratory animals, must have occurred also for humans. Why should God not have granted this help to Christ to help Him bear the enormous grief of our blindness?

The lack of scales for weighing spiritual force does not leave the spiritual life out as a fact of nature. The most potent evidences, however, are the fruits of the spirit. The unselfish love for God and all His creation by redeemed sinners, who have been privileged to serve Him throughout human history, have left a heritage impressive to all who want to study history. Is there a compromise that does not deny human experience and the facts of history? Can faith in God the Creator prevail? Could it all have been a mistake, and should we be reduced to living with and on the level of achievements of the materialists? Could the evolutionists be so right that we may look forward to the survival of the strongest, fittest, and most cunning materialists?

GENESIS ONE : ONE

By DAVID K. BLAKE
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"IN (THE) BEGINNING CREATED GOD THE HEAVENS AND THE EARTH" is a simple declarative sentence. In the Hebrew text the first word is "in the beginning." It is used here as an adverb to modify the next word "created." ordinarily the verb "create" would appear first in the Hebrew sentence but in this case it is the author's desire to emphasize "within the scope of the beginning." The duration of this time span one must determine from the remainder of the verse and the context which follows this first sentence. The second word is the verb "create" and is in the perfect tense which in Hebrew has nothing whatsoever to do with the time tense of "past, present, or future." The Hebrew perfect tense means a complete state or condition. The act of creating is said to have occurred "within the scope of the beginning" and so was in the past at the time the author wrote the sentence.

Following the verb is the subject "God" who performed the creative act. Following the subject are seen two objects . . . The Heavens . . . The Earth." My three dots indicate an omission of the Hebrew sign of the definite "wau" used as a conjunction. All of the Hebrew letters are consonants, though two of them are used as vowels. The little dots and dashes indicate the vowels, but they were not a part of the original Hebrew text. They were added by the Hebrews some centuries after Christ. They are not inspired so smart students will feel free to reappraise these vowel markings in some contexts and perhaps find such reappraisals more meaningful. Each of the objects has its one letter definite article attached to it. The first object — The Heavens — is a plurality of items distributed overhead and the second object — The Earth — is a single item upon which the author and the reader stand. So by the perfect tense we understand the two objects were created in a complete state or condition and by the adverbial expression we understand to mean the time span within which creation occurred. I have presented and discussed the verse as an abstraction which leaves ambiguity with respect to the order of creation. Does the perfect tense mean that both objects were created simultaneously? Or Heaven first and then Earth? Or Earth first and then Heaven? The language as it stands is suitable for either view. The ambiguity can be removed only by the succeeding context of Genesis and if that does not suffice then the entire context of the scripture. My reader will understand my assertions are qualified as expressing my understanding of what I have studied. I have no professional qualifications to make authoritative statements with respect to Hebrew grammar. All of my views are submitted for the students appraisal of their merit (or lack of it).

Being an electrical engineer I find it quite helpful in my understanding of Genesis to draw upon relevant physical concepts to enhance my interest in certain particulars of the scripture testimony. Take the expression "created within the scope of the beginning" and apply to it the smallest of particles — the electron — and say "In the beginning God created an electron." This can be very meaningful if we view an electron in terms of the modern concept of the equivalence of matter and energy — the now familiar Energy = mass times the velocity of light squared. This serves to get rid of that annoying concept of "create out of nothing" by thinking of the creative act as transforming directly the energy of The Spirit into an electron. In this case it is self-evident that the time rate or velocity of the change-of-state is instantaneous or next to zero time. In one instant we have only energy and the next instant there is an electron. So here it is in the nature of the case that the Hebrew perfect is punctiliar and the adverbial expression "in the beginning" is compressed to a point. If we use a proton instead of an electron the velocity of the change-of-state is the same, thereby indicating the creative power is 1800 times as great as that of the electron because the proton mass is 1800 times as great as that of the electrons.

Now if we imitate the scripture and substitute proton for The Heavens and electron for the earth we would have the same ambiguity with respect to the order of the events as we had with the scripture terms "Heavens and Earth." We do have, however, the advantage that we can speak of the proton and the electron as an atom of Hydrogen and say "In the beginning God created a Hydrogen Atom." The perfect tense would then specify it was a complete atom in one act and the adverbial expression would indicate the beginning as a point of time.

Some readers may be a bit "rusty" on the use of numbers with exponents so a brief explanation is in order. The number 10 is used as a base. Ten raised to the first power is 10^1 , and 10 raised to the second power is 10^2 and 10 raised to the third power is 10^3 . 10^3 then means $10 \times 10 \times 10 = 1000$. Now, 10^3 takes less writing space than 1000 but not enough to bother with the awkwardness of writing 10^3 on a typewriter. 10^6 , however, begins to pay off instead of writing 1,000,000 and 10^9 much more so than 1,000,000,000. In the case of the fraction $1/10$ we can write 10^{-1} and for $1/100$ write 10^{-2} and $1/1,000$ write 10^{-3} . Obviously we can express these as decimals 0.1, 0.01, 0.001. The student can readily see that 10^6 means six zeros after one and 10^{-6} also means six zeros after one but is located in the denominator of a fraction. So all one needs to remember is that the number occurring as an

exponent indicates the number of zeros after "1" whether it is in the numerator or denominator of a fraction or an equation and the minus sign before the number always indicates its location in the denominator or below the line in an equation. If, however, he thinks in the decimal system then the number of zeros between the decimal point and "1" is just one less than the minus or negative exponent as can be seen from $10^{-6} = 0.000001$. Obviously then 10^{-23} means 23 zeros after "1" in the denominator or 22 zeros before "1" in the decimal expression. Now, just take a number like 10^{81} and write out the 81 zeros. In addition to this advantage it is so easy to express multiplication of $10^7 \times 10^3$ by just adding the exponents to obtain 10^{10} . Likewise, to divide $10^5 \div 10^3$ just subtract $5 - 3$ and get 10^2 . Also, keep in mind that a 1000 has three zeros, a million has six and a billion has nine. So a thousand times a million times a billion = $3 + 6 + 9 = 10^{18}$. Now then, see that $10^{18} = 10^3 \times 10^6 = 10^6 \times 10^6 \times 10^6$.

Since we have arrived at the creation of one atom it will be helpful to quantify the velocity of the change-of-state from energy to matter. Yang (Elementary Particles—Princeton) mentions 10^{-23} seconds as the collision time of particles approaching one another near the velocity of light. Such collisions transform energy into particles and Yang considers 10^{-23} seconds — "in many senses a unit of the time scale of the phenomena." This is many billions times faster than the "batting of an eye," "snapping the fingers," or saying "scat." So, if energy generated from matter can produce matter at the velocity of 10^{-23} seconds then so can The Spirit at the same or faster rate. This transformation has to be thought of in terms of each individual particle however small, however large, or however numerous. So now let's increase our scale of magnitude and go in one leap from a hydrogen atom to a drop of water. The Hughes Aircraft Company circulated a pamphlet giving a calculation of 1.4×10^{21} electrons in a rain drop of 2 millimeters in diameter. Associated with each electron there would be the same number of protons. Since Hydrogen has no neutrons every H_2O molecule would mean 8 neutrons for every 10 electrons or protons, so $1.4 \times 0.8 \times 10^{21}$ neutrons. So the total number of particles could be $1.4 + 1.4 + 1.12 = 3.92 \times 10^{21}$ particles. Or if you prefer to express it in terms of molecules there would be 10 electrons for each molecule so we would have 1.4×10^{20} molecules. The perfect tense then might mean one complete rain drop in 10^{-23} seconds or 1.4×10^{20} molecules $\times 10^{-23} = 1.4 \times 10^{-3}$ seconds total time for transformation of each molecule in succession. If the author meant this successive creation and used the perfect tense — "In the beginning God created a rain drop" his use of the perfect tense for create would mean he "does not desire to lay any special stress on the

frequency or continuance of an event" — Driver. *Hebrew Tenses*, Clarendon Press.

Look now at the Creator's manipulation of water he had made "in the beginning." In John 2:3-11 "having nearly run out of wine (husteresantos oinou) . . . 'there kept being in that place (esan de ekei) six water pots, each having room (choroustar aria) for two or three 'metretas (9 gallons = Hebrew bath says A and G Lexicon). Lenski's commentary says "Rabbinist make the bath to be less than $4\frac{1}{2}$ gallons," Let's use 9 gallons per pot $\times 6 = 54$ gallons of water to start with. That's a lot of particles to manipulate in a short time. "He says to them fill at once (gemisate) the water pots with water (hurdatos), and they filled them up to the brim" (eos ano). "and then (kai) he says . . . dip out now (antlesate nun) and go on carrying (kai pherete) to the ruler of the feast. And as he tasted (hos de egeusato) . . . the water having been made and remaining wine . . . he says . . . you have kept the excellent (ton kalon) wine until now." Students think of the 4,000 billion billion particles in each drop of water and visualize, if you can, the disassociation and recombination of the particles to form the more complex Carbon, Hydrogen and Oxygen molecules. Also, if in this case the good wine had a specific gravity of 97.5%, then He annihilated about $(1.4 + 1.2) \times 0.15 = 39$ billion billion particles per rain drop before their eyes. The Spirit absorbs directly the energy of the annihilated particle and it in no way reacts with the other particles. Or on the other hand you may prefer to think in the two steps of total annihilation in 10^{-23} seconds and total creation of new wine in the next 10^{-23} seconds. Either way suits me. It's fast work.

Return to the analogy of the Hydrogen atom created punctiliarly and substitute the words "The Universe." Driver in his *Hebrew Tenses* (p. 13) classifies the perfect "create" in Genesis 1:1 as "an equivalent to the Greek Aorist, to denote an action completed and finished at a definite moment in the past, fixed by the narrative." In his commentary on Genesis (Westminster), page 3, he says "the heaven and the earth, i.e. the universe, as it was known to the Hebrews, in its complete state." Leupold's commentary (Wartburg Press) also suggests "the universe." Watts, in his *Survey of Syntax in the Hebrew Old Testament* (Broadman Press), says the perfect tense focuses attention on the "conclusion and perfected character." Since the creative power displayed resides principally in "matter and its properties" we can as a matter of convenience omit consideration of the precise structures in which it is organized and do some "doodling" with numbers. I will make use of some numbers I find in Appendix 4, page 654, of Hardin's *Biology*, Freeman Pub.). He gives the total mass in the Universe as 10^{75} g which I am converting to 10^{72} kg. His data assumes 10^{90} as the number of

fundamental particles. I have seen values up to 10^{100} for this so he is on the low side. His data pertaining to the solar system I am totalizing and rounding off to 2×10^{30} kg. This means the Universe has $10^{72} \div 2 \times 10^{30} = 5 \times 10^{41}$ as much mass as does our Solar System. Now since Ex. 10:11 uses "six days" adverbially (in the same manner with "made" in the perfect tense) we could equate "six days" to "in the beginning" in our verse without grammatical concern. So $5 \times 10^{41} \div 6 = 8.33 \times 10^{40}$ Solar System per day as far as mass itself is concerned.

I find it meaningful to view space as the region, realm or field of *The Spirit* who is the source of all energy we observe in matter in terms of its mass, motions and forces (gravitational, magnetic and electro-static). Wherever we find matter and its properties we find properties of energy and therefore a demonstration of the imminence and transcendence of *the Spirit of God* "because (gar) *in him* (en autoi) *we go on living* (zomen) *and go*

on being moved (Kai Kainoumetha) *and keep on being* (Kai esmen). So *wherever we find matter and its properties we find such only in-connection-with-him* (en autoi). There is, therefore, no such thing as "laws of nature" for such an expression can designate only the descriptions of the properties of the matter-energy system and can in no way suggest *prescriptions* residing in the matter-energy system. The *prescribing intelligence* and *will* reside in *the spirit* energy source. Since God is Spirit and God is Light, there is no difficulty in viewing what we call space as the region and realm of The Spirits Energy. Consequently, creation or the transformation of energy into an Energy-Matter system can be viewed as a simultaneous event occurring within the scope of the Spirit-Energy field. The extent, magnitude, and complexity of the Matter-Energy System therefore serves to develop awe and reverence in those spirit beings who have derived their being *in-connection-with him* (en autoi).

ON THE ORIGIN OF THE UNIVERSE

By DONALD O. ACREY
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Most scientists interested in the problem of the origin of the universe fall into two classifications: those who believe in the Evolutionary Theory and those who are proponents of the Steady-State Theory. The Evolutionary Theory school of thought is generally divided into three subdivisions:

- (1) Those who conceive a universe starting at a point origin at a finite time in the past and expanding continuously to become infinitely large after an infinite time.
- (2) Those who conceive a universe whose radius has a certain finite value at the initial moment of time, and thence expands to become infinite after an infinite time.
- (3) Those who conceive a universe which expands from zero radius to a certain maximum and then collapses to zero again, this process of oscillation being capable of indefinite repetition.

The Steady-State Theory school of thought holds that the creation of matter is taking place continuously, and that although the stars and galaxies evolve from their basic material, the universe, when considered as a large-scale structure, is in a steady state. This group of scientists further holds that individual galaxies change but the average spatial density remains the same, because matter is always in creation in space.

One of the areas for controversy lies in the determination of that "point of origin at a finite time in the past" described above in (1) under the Evolutionary Theory. The effort to date the universe by dividing the distance to the furthest star by the speed of light is full of errors and pitfalls.

A review of basic physics involving light is in order at this point. We know that studies in light are most effective through the forms of photons (small amounts) and light waves (large amounts). Photons are quanta of matter, or wave-packets. Light waves, as discussed by Huygens and Young, travel at a velocity of 3×10^{10} cm./sec., or 186,000 miles/sec. The velocity of light is independent of intensity, and color variations do not affect the velocity of light. In working with photons, we know that their energy (e) is the product of the frequency (f) times the universal constant (h) of 6.56×10^{-27} ergs X sec or $e = hf$. Planck attacked the problem of determining theoretically the experimentally known law for radiation of a perfect radiator and in 1900 ascertained that the energy of the atomic radiators could not be very infinitesimal amounts but only in certain steps or units, the size of each unit depending on the frequency of the radiator.

Planck proposed that the radiation itself was emitted in small but definite bundles of energy. These units varied in size with the frequency of the radiation in accordance with the relation:

$$\text{Energy} = E = h\nu = h \frac{\text{velocity of light in free space}}{\text{wavelength of radiation}}$$

wherein " ν " is frequency of radiation emitted (or absorbed) and " h " is the *Planck Quantum Constant* which is equal to 6.56×10^{-27} erg-sec. The frequency, of course, can be ascertained by dividing the speed of light (c) by the wavelength (L), thus

$$e = \frac{hc}{L}$$

The tools for studying light are photometers, which indicate the brightness of light; radiometers, which denote the heat emitted by celestial bodies; and spectrographs, the equipment which disperses radiation into its constituent wave lengths (spectrum). In recent years, we have seen the promising use of new space physics tools such as the satellite and the space probe.

Of great importance, and to the detriment of all observational data, are the many problems encountered that negate the value of the observed data. The earth's atmosphere has an absorbing and distorting effect on astronomical observations. Even in the space vehicle observations we note the bothersome Doppler shifts produced by orbital velocities and the back-scattered light produced in disturbing amounts by the means of the atmosphere. The observed 'red shifts' might possibly be distortion due to matter in the atmosphere or even true velocities of recession. Rapidly receding nebulae appear fainter than a stationary object at the same distance and a negative correction increasing with distance must be applied to the observed apparent magnitudes. When the correction is applied, the simple linear relationship between velocity and distance no longer holds. The determination that the system of radiation belts and clouds of ionized plasma enveloping our planet and filling a volume in space many thousands times greater than the solid Earth introduces further interference phenomena in the optical, as well as radio astronomy, observational techniques.

When one considers the distances involved when measuring star locations by the methods of parallax displacement, by apparent brightness comparisons, and the pulsating stars (Cepheid variables), it is little wonder that distance measurement techniques have been questioned by many scientists. In the apparent brightness criteria alone we observe variables among supergiant stars, super-

novae, nebulae, and nebulae clusters. What of the multitude of nebulae numbering thousands, that could be placed in our system?

Current research is dependent upon the tool of radio astronomy to reach out beyond the present limits that optical tools give us. Even now, some researchers are convinced that radio astronomy has enabled them to detect hydrogen gas 'lining the spiral arms of the universe' with strange radio 'noises' coming from the central regions of the universe. These conclusions are based on certain similarities with the size, structure, and composition like Andromeda Nebula. But with the various problems affecting the reception of the data, especially the distortion of light by the atmosphere and the radio interferences, one wonders at the various approaches to the problem.

The writer has long been a proponent of the idea that light is scattered by gas molecules in the atmosphere. In refraction of light studies, we know that the relative index of refraction (n_r) is a function of absolute indices (n_a) of refraction for the media penetrated, or:

$$n_r = \frac{n_a}{n_1}$$

The fact that the velocities of stars are small compared with the velocity of light indicates that the nature of the universe as a whole is at rest. Some will ask is our own galaxy an outrider in a super-galaxy? Are clusters distributed irregularly Or are they scattered at random more or less uniformly through space? I am quite convinced that we are seeing only a small part of the universe, especially when we note that the sun is 8 light-minutes from our earth, 5 light-hours from Pluto, and 4 light-years from the next nearest star.

The invalidity of present-day age determinations of the universe can be summarized rather conclusively as follows:

- (1) Satellite investigations of the stars, the nebulae, the interstellar medium, and external galaxies are hampered by the (a) faintness of the sources and (b) the stringent requirements for accurate guidance and control.
- (2) The work of Friedman (Naval Research Laboratory) shows that the entire night sky is

aglow with diffuse Lyman-a emissions which appear to be solar radiation back-scattered by cold neutral hydrogen either in the interplanetary medium or in a cloud surrounding the earth. Radiation at about 1300 A was detected with a high intensity from several sources, some of which coincide with visible nebulae and others which do not.

- (3) The question is raised as to whether the interstellar absorption of neutral hydrogen is not so great as to screen effectively not only Lyman-a from even the near-by stars, but also all radiation for several hundred angstrom units below the Lyman series limit at 912 A.
- (4) The absorption of the interstellar medium thwarts abundance studies of the elements of space.
- (5) The investigation of galactic and extragalactic sources in radio astronomy techniques below 20 Mc/sec. are turned back by the ionosphere.
- (6) Cosmic radio noise, observed on the ground at low frequencies, interferes in radio astronomy studies and are thought to come from thermal and non-thermal processes, as well as from galactic and non-galactic sources.

short. errors in observations through the atmosphere are caused by imperfect transparency, atmospheric dispersion, and night-sky emissions in the red and infrared regions of the spectrum. Errors in observations above the atmosphere, where smaller images are obtained and fainter stars reached, are caused by absorption of the interstellar medium, back-scattered solar emissions, and cosmic radio noise.

I visualize the creation of the universe, as recorded in Genesis, with light waves moving at the instant of the creation of the heavens and the earth. Such an idea should be readily acceptable, since the transformation of the proton (the raw power of the universe) to an atom takes only minutes, and from atom to molecule additional minutes, thence to all matter a few hours. The accurate determination of the age of the universe is dependent upon ascertaining the refraction, diffraction, and diffusion characteristics of light through measured intervals of space. The proper tools and techniques are yet to be found to do this.

DUCKWEEDS, PALMS AND ORCHIDS

By DR. GEORGE F. HOWE
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Frequently in the writings of contemporary evolutionists, one finds some amazingly frank statements about the problems facing evolution theory. Dr. Corner, who himself seems to believe in an orthogenic evolution, makes the following statement:

Much evidence can be adduced in favour of the theory of evolution — from biology, biogeography and paleontology, but I still think that, to the unprejudiced, the fossil record of plants is in favour of special creation. If, however, another explanation could be found for this hierarchy of classification, it would be the knell; can you imagine how an orchid, a duckweed and a palm have come from the same ancestry, and have we any evidence for this assumption? The evolutionist must be prepared with an answer, but I think that most would break down before an inquisition.¹

Upon clear scrutiny, it can be seen why Dr. Corner winces at the very idea of palms, duckweeds, and orchids being related to some common ancestor of all monocotyledonous plants.

The duckweed is a minute herbaceous plant which floats upon the surface of ponds. Having no clear-cut stem or distinct leaves, its flat little body may

have threadlike roots. The flowers are without any sepals or petals and they bear only 1-2 stamens. Palms, on the other hand, are generally large columnar trees which may approach 100 feet in height. They bear a persistent tuft of leaves which are sometimes mistakenly called "branches." Palm flowers generally have a regular and symmetrical arrangement of three petals and three sepals. The sepals and petals join the stem below the insertion of the ovary (hypogynous flower parts). Finally, the orchid flower is quite different than the regular flowers of palm or the extremely simple ones of duckweed. Orchids bear strikingly irregular flower parts with one of the petals frequently forming a beautiful cup-like structure. Flower parts are borne on top of the ovary (epigynous flower parts).

It is not easy to imagine that these three diverse plant kinds have descended from a common ancestor. I agree with Dr. Corner that such a proposition stretches one's scientific imagination to the breaking point! I further propose that this problem facing evolution is simply another evidence demonstrating the superiority of Biblical creationism as a working hypothesis in botanical science.

¹MacLeod, Anna M. and L. S. Copley. 1961. *Contemporary Botanical Thought*, (Chapter by E. J. H. Corner, Botany School, University of Cambridge) page 97. Quadrangle Books, Chicago.

ESKIMOS AND ALEUTS; THEIR ORIGINS AND EVOLUTION

By WILLIAM S. LAUGHLIN
 Science, Vol. 142, No. 3593,
 8 November 1963, p. 633

Reviewed by

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Science for the 8th of November, 1963, contains a fascinating and interestingly written article entitled *Eskimos and Aleuts: Their Origins and Evolution* by William S. Laughlin. The article proposes a picture of Mongoloid peoples migrating across the Bering Platform, then withdrawing from the main migration route as the Bering Sea advanced and settling in the Aleutian area. Here, over a relatively short time, significant differences developed between these Mongoloids and others who settled in Alaska and Greenland. As a professor of anthropology at the University of Wisconsin, the author is at home in the area and well qualified, judging from the number of references in the bibliography to other literature on the subject, which he has contributed.

The article begins by dating the first contact between Eskimos and Europeans at about 1,000 A. D., when they were discovered by Leif Erickson. Although this was the first historical contact, at that time Greenlandic Eskimos, Alaskan Eskimos and Aleuts had already been in North America for over 4,000 years. Laughlin then points out that the Eskimos and Aleuts are Mongoloids, with various adaptations having developed to suit the wide range of environments encountered. One might bear in mind that the climatic range is from Marine West Coast to tundra and ice-cap in this part of the world.

The variations encountered through their distribution over a long coastal area make these people uniquely suited for studies of population genetics as well as microevolution. There have been a number of stratified village sites that, after excavation, revealed many animal remains as well as human artifacts and skeletons. A further source of information is the result of studies of blood group distribution as found among the current Aleuts, Greenlandic Eskimos and Indian tribes of North America.

Laughlin reports some of the findings of R. F. Black which pertain to the geological past of the Alaskan area. It is proposed that about 12,000 years ago, dry land extended out to Umnak Island. The Bering platform up to 8,000 years ago was dry land and offered an easy path for migrations of animals and human beings from what is now Siberia across to Alaska and points east and south from there. As the water level rose, the passageway was narrowed, and future migrants may have passed without necessarily making contact with established groups such as the Aleuts, who possibly migrated around to the south of the passage. Hill remnants

of the presently submerged platform are such islands as the Pribilofs, Umnak, Anangula, Nunivak, St. Lawrence Island, etc.

In the vicinity of Umnak there is at present a village of some fifty-five Aleuts, called Nikolski. On the south margin of this community is an old stratified village site called Chaluka. Excavations have revealed 4,000 years of continuous record. Laughlin lists possible food sites and useful drift products which might have, been available to the inhabitants here to increase the comfort of living at this site. Geological evidence would seem to indicate this village could not be older than 5,000 B.C. It would also seem to indicate a constant water level during this period. A sample taken from the lowest inhabited level and dated by radio-carbon resulted in a proposed age of 4,000 years for the site.

The most fascinating and valuable part of the whole article to me is a series of photographs on page 637 which compare the skulls of a paleo-Aleut with those of the neo-Aleut. A study of this series of photographs indicates that the paleo-Aleut appears to have the more modern cranium whereas the neo-Aleut looks more primitive, being broader, having accessory infraorbital foramina as well as a much shortened cranium and other differences. Another fascinating picture is on page 639 showing the mandible of a man of Japan of about 1,000 A.D. This looks somewhat reminiscent of that of the Heidelberg jaw except for the chin. It is mentioned that the breadth of the ramus exceeds that of *Homo neanderthalis*. On the same page is a statement that Eskimos probably have more sweat glands than members of other races.

On page 641 there is discussion of blood group data with respect to Eskimo and Aleut groups. This data shows that the members of this stock are clearly distinguished from American Indians and more similar to Asiatic Mongoloids on the basis of this distribution. Blood type B apparently occurs in the Eskimo Aleut groups and ranges from 2 to 26% whereas in American Indians it is zero.

Another photograph on page 641 is the photographic view of the top of a neo-Aleut cranium showing an extra horizontal suture-which separates the upper portion of the occipital into a triangular region. This feature must be uncommon enough in the modern European and American white race to account for its never being mentioned in the average general or vertebrate biology text. Incidentally, the statement is made that this feature is also found

in *Sinanthropus pekinensis*, Mongoloids, and American Indians in varying but often high frequencies. The next page 642 shows the palate of a paleo-Aleut showing some similarities between that and current Mongoloids, American Indians, Polynesians, and *Sinanthropus pekinensis*.

On page 643 is probably, from our point of view, the most important paragraph of the article which is headed *Sinanthropus and Modern Mongoloids*. Laughlin proposes a time limit for contemporary Mongoloid type existence of the order of magnitude of 10-15,000 years. Apparently there have been considerable changes within the last several hundred years. He also points out the importance of the finding that Middle Pleistocene *Sinanthropus* displays traits that are also found in current Mongoloid populations as well as among the related American Indians.

Reference is made to the three skulls from the Upper Cave of Chou Kou Tien in North China, "They are thought to be Late Pleistocene, but they are probably no older than the early American Indian remains such as the 'Midlands Woman,' to which a date earlier than 8,000 B.C. and possibly as early as 18,500 B.C. has been assigned." (Page 643). The statement is further made that the three skulls from Chou Kou Tien resemble "unmigrated American Indians," which is apparently a quote from W. Howell's *Mankind in the Making*, Doubleday, New York, 1959, p. 300. A further statement, "The evidence from China indicates that modern mongoloids are relatively recent development." The

reference given for this is K. Chang, *Science* 136, 149 (1962) .

The final interesting statement on this page reads, "In discussing the nomenclature and classification of *Sinanthropus pekinensis*, Weidenrich remarked, 'It would be best to call it *Homo sapiens erectus pekinensis*. Otherwise it would appear as a proper species, different from *Homo Sapiens*, which remains doubtful, to say the least.' " Page 643 This last is taken from F. Weidenreich, *Paleontology Sinica*, 1943, No. 10, 127, 246, 256 ,1943) .

Laughlin summarizes by holding that Mongoloids represent a recent development in humanity, possibly occurring as a distinctive type within the past 15,000 years. Although recognizing the differences between *Sinanthropus* and current Mongoloid, it still holds that there are more shared traits than with members of any other of the living races today. The small number of fossil remains, the great time lapses, all go to make proposed inferences tentative. In further summing up, Laughlin finds that significant differences are present between the related Aleuts, Eskimos and American Indians; and that apparently this has occurred over a demonstrated short time lapse. When this is coupled with the large differences found among various living human groups, e.g. Bushmen and Eskimos, one is justified in concluding that *Sinanthropus*, and by inference I would also say *Pithecanthropus*, also belong to the same species, *Homo sapiens*.

Wilbert H. Rusch, Sr.
March 5, 1964.

Our Society of research scientists representing various fields of successful scientific accomplishment is committed to full belief in the Biblical record of creation and early history, and thus to a concept of dynamic special creation (as opposed to evolution), both of the universe and the earth with its complexity of living forms.

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