

Creation Research Society Quarterly

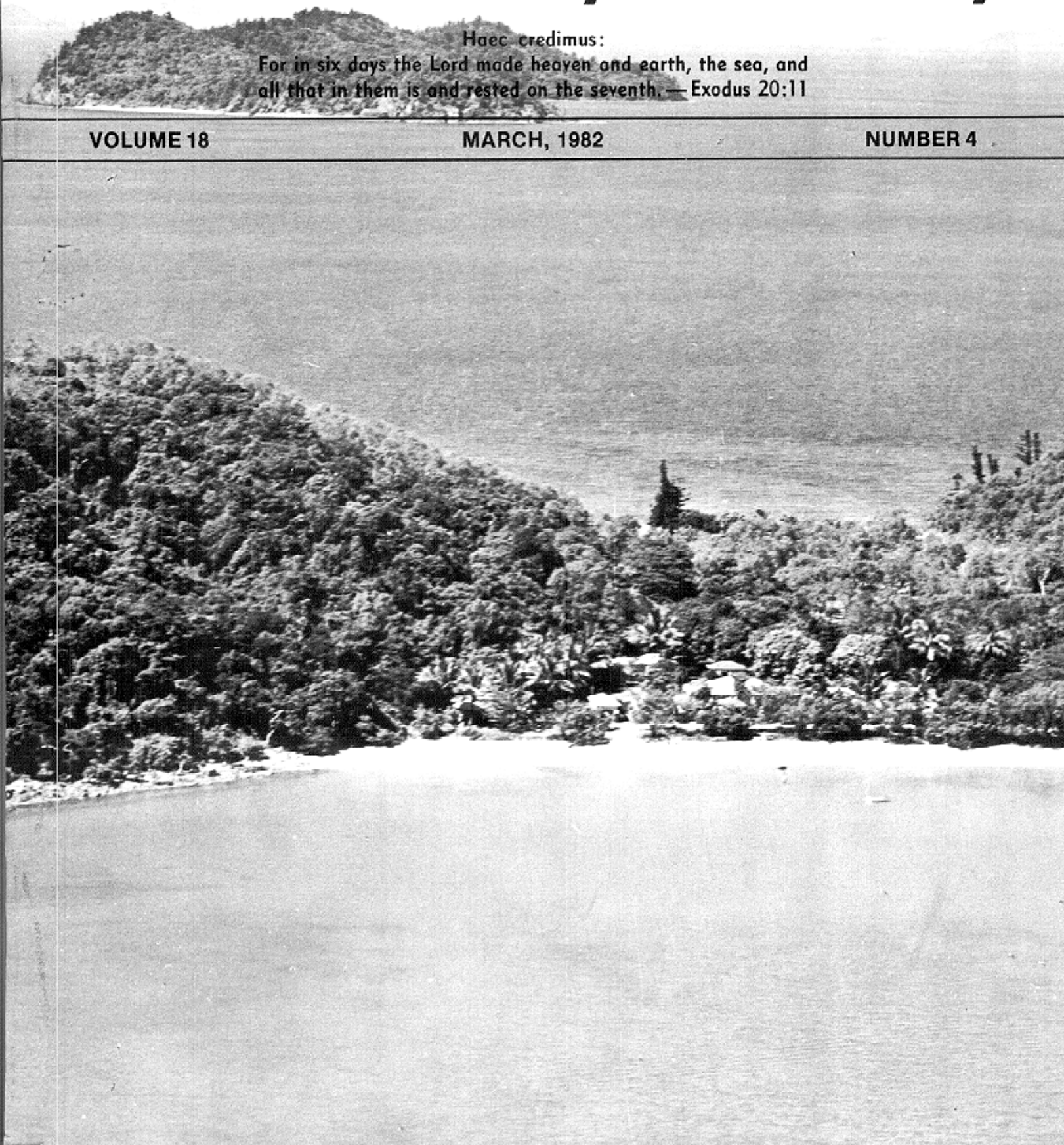
Haec credimus:

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

VOLUME 18

MARCH, 1982

NUMBER 4



CREATION RESEARCH SOCIETY QUARTERLY

Copyright 1982 © by Creation Research Society

VOLUME 18

MARCH, 1982

NUMBER 4

EDITORIAL BOARD

Harold L. Armstrong, Editor
4 Couper Street
Kingston, Ontario, Canada

Walter E. Lammerts, Research Editor

Thomas G. Barnes University of Texas at El Paso, Texas
Duane T. Gish Institute for Creation Research,
San Diego, Calif.
George F. Howe Los Angeles Baptist College,
Newhall, Calif.
John W. Klotz Concordia Seminary, St. Louis, MO.
John N. Moore Michigan State University
East Lansing, Michigan
Henry M. Morris Institute for Creation Research,
San Diego, Calif.
William J. Tinkle Anderson College (retired)
North Manchester, Indiana
John C. Whitcomb Grace Theological Seminary,
Winona Lake, Ind.
Emmett Williams Continental Telephone Laboratories,
Norcross, Georgia

Notices of change of address, and failure to receive this publication should be sent to Wilbert H. Rusch, Sr. 2717 Cranbrook Road, Ann Arbor, Michigan 48104.

Creation Research Society Quarterly is published by the Creation Research Society, 2717 Cranbrook Road, Ann Arbor, Michigan 48104. © by Creation Research Society.

Creation Research Society Quarterly is indexed in the *Christian Periodical Index*.

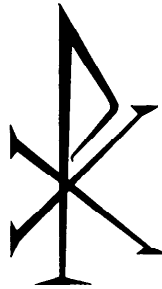


TABLE OF CONTENTS

	Page
The Monotremes Colin Brown	187
An Estimate of the Current Status of Evolutionary Thinking John N. Moore	189
Velocity Effects on Atomic Clocks and the Time Question Thomas G. Barnes and Francisco S. Ramirez IV	198
An Anthology of Matters Significant to Creationism and Diluviology: Report 2 John Woodmorappe	201
Creation, Why and How? Everett H. Peterson	223
Electromagnetics and the Appearance of Age Glenn R. Morton	227
Panorama of Science	232
Book Reviews (2)	236
Letters to the Editor (5)	236
Index to Volume 18	240

COVER ILLUSTRATION

On the front cover is a scene of part of the Great Barrier Reef, which lies off the north-east coast of Australia, as shown by the line of "x"'s, by the word "REEF", in the map to the right.

The photograph was supplied by the Australian High Commission, Ottawa, Ontario, Canada; and it is used here by permission.

It is often claimed that certain geological formations are the remains of reefs which existed formerly. However, there are difficulties in any such identification; the geological structures differ from modern reefs in many important ways. This matter, among others, is discussed in the article by Woodmorappe, elsewhere in this issue of the *Quarterly*.



THE MONOTREMES

COLIN BROWN*

Received 14 July, 1980

Some have tried to point to the monotremes as links between the mammals and reptiles. That notion is challenged here; it is shown that the monotremes are true mammals, albeit having certain peculiarities. They provide no support for evolutionary theories.

The monotremes, the egg-laying mammals which include the platypus, *Ornithorhynchus anatinus*; the echidna, the spiny anteater, *Tachyglossus aculeatus*; and the somewhat similar *Zaglossus*; are often said to be connecting links between the reptiles and the mammals; or at least to be living fossils, being much like connecting links which lived ages ago. But a closer look shows that the alleged resemblances to reptiles are superficial, and that the monotremes are wholly mammals, albeit differing in some respects from the placental mammals.

The brain and skull of the monotremes, for instance, are quite mammalian in nature. Other features, in which these animals are clearly mammals, include: the heart and the circulation of blood; the diaphragm; the fur and its arrangement; and the kidneys and their supply of blood.

About Milk

The unique thing about mammals, of course, is their provision of milk for their young. If they were primitive mammals, not evolved very far, the milk might be expected to be primitive. What are the facts? The truth is, that platypus milk is not much different from human milk. Moreover, the areola of the platypus is in structure very like the human nipple and areola.

It may be worth while to comment here on the statement, found so often in places where it ought not to be, that the *Tachyglossus*, for instance, licks up the milk from the areola. That notion is false; the *Tachyglossus*, like any other mammal, sucks.

While it does not concern the monotremes, I cannot resist reporting another curious fact about milk, which I found while preparing this article. The red kangaroo, *Megaleia rufa*, can make two kinds of milk simultaneously: milk suitable for the new-born young in one gland and in the other gland milk suitable for a young kangaroo at heel. The two kinds differ considerably: that for the new-born contains, for instance, 51% palmitic acid and 15.6% oleic; whereas the other contains about 25% palmitic and 53% oleic.

Reproductive and Other Organs

The reproductive organs of the female monotremes are sometimes said to be nothing like those of the placental mammals. I can not agree; it seems to me that, in essentials, they are quite like those of the marsupials and the placental mammals, and not at all like those of birds or reptiles.

May we perhaps appeal to the teleology here? When the Creator decided, for reasons which He saw to be

good, to have egg-laying mammals, He would naturally design their reproductive systems a little differently.

The monotremes do have a cloaca. So do the marsupials. Most placental mammals do not. But, as so often, there is an exception. The beaver has a cloaca.

An evolutionist would no doubt say that this cloaca is not a homologous organ, and so not related to that in the monotremes. In that case, according to the tenets of evolution, there must have been animals in the line of descent, between the ancient monotremes (or monotreme-like animals) which had no cloaca. Were these hypothetical ancestors, then, placental mammals, or marsupials, or did they lay eggs? Or are there any known facts at all about these supposed creatures? Let me summarize the argument:

(1A) Has the cloaca been passed down to the beaver by the reptilian ancestors which, according to evolution, it had? If so, it would be a homologous organ. But nobody maintains that it is.

(1B) Failing (1A), there must, according to evolution, have been a gap of millions of years, between the reptiles and the beaver, in which the cloaca was missing, and it must have been produced independently in the two cases. But then it shows nothing about relationship; nor, indeed, is it claimed to do so. But if it proves nothing in this case, why should it do so in the case of monotremes?

(2A) But if neither the presence nor the absence of the cloaca proves anything about descent, that is, about evolution, how can any other feature do so? Evolution is left as an hypothesis without any evidence. In that case, Creation is the more reasonable answer. The beaver may have been created with the cloaca, again for reasons which the Creator saw to be good.

(2B) Even if a Creationist should claim that the beaver was created without a cloaca, and acquired it later, an evolutionist could not consistently object. For he was claiming the same kind of thing. Here is another example of what I have called the fourth law of creation, on which I hope to publish more in due time.

(3) The beaver has a scaly tail. One often thinks of reptiles as scaly. But nobody maintains that the two provisions of scales are connected by descent. But if this similarity proves nothing, what reason is there to say that another similarity does?

(4) The beaver has a nictitating membrane; the so-called third eyelid. It shares this feature with reptiles, monotremes, rabbits, birds, some sharks, and the walrus. Nobody claims that any special relationship is thereby proved. But if this resemblance proves nothing, what right has anyone to seize on another as evidence of evolution?

(5) It may be of interest here to add a few general remarks about the beaver, which has been mentioned so

*Mr. Colin Brown's address is 61 Derby Road, Golborne, Gt. Manchester, England.

much. The gestation period is 81-98 days for the European beaver, about 120 for the Canadian. The young, at birth, weigh about 1½ pounds, and are about 15 inches long, about 4 of that being tail. They are born with eyes and ears open; and at about one month old begin looking for solid food, although they are not weaned until about six weeks. All in all, they are very much placental mammals.

Thermoregulation

It used to be said that thermoregulation was poor in the monotremes, and on that ground they were said to be close to the reptiles, which were supposed to have no thermoregulation at all. But, in the first place, it is becoming abundantly clear that the division of animals into warm-blooded and cold-blooded is a gross oversimplification. Reptiles, and, indeed, insects, are now known to have many strategies for keeping their temperatures within suitable limits.

As a matter of fact, in the second place, the monotremes are very similar, in body temperature and in standard metabolic rate, to many eutherian animals. Fur, or other insulating material, is useful in the control of temperature; and the platypus, for instance, has insulation which, in water (where it spends considerable of its time) is better than that of the polar bear or the beaver.

More on Reproductive Organs

In the platypus only one ovary and oviduct function, viz., the left. Both function in the echidna. Snakes and lizards likewise have only one functioning; whereas in crocodiles, turtles, marsupials, and placental mammals two function. Had the reptilian ancestor, from which the platypus is supposed to have evolved, two functioning? If so, why should one become non-functional in the platypus, especially when that did not happen to the echidna? Again, if some reptile, in the alleged evolutionary line, was functioning satisfactorily with one ovary and oviduct, why should it go to the trouble of completely re-arranging itself, along with the kidneys, bladder, etc., and then still later come back to having only one functional?

Longevity

Longevity, or its absence, is another matter of interest about animals—and to ourselves. And it is inherited to some extent, and thus has to do with genetics—and should have to do with evolution if it had ever happened. Is there any pattern there which would reveal the monotremes as especially primitive? Not really. The platypus is believed to live about 17 years, the echidna over 50. There is little relation here. It may be noted that the echidna lives longer than the dog, brown bear, Indian rhinoceros, Bactrian camel, South American tapir, common seal, chimpanzee, and gorilla among the mammals; and longer than the tuatara lizard, loggerhead turtle, and anaconda among the reptiles. The platypus, on the other hand, has a shorter life than many of the creatures mentioned, and even than the common toad, and the common and giant salamanders.

The young monotremes can not live very long without milk, which, of course, their alleged reptilian ancestors could not have provided. A major change in the whole nature of the young would have been needed. There is no evidence for any such change; in particular, the development of teeth, which might have been expected to be related somehow, give no hint of any such change. The embryo of the platypus, for instance, has a replacement premolar which, however, does not erupt but rather becomes reabsorbed. The platypus juvenile dentition is:

0 1 2 3

5 1 2 3

But of these all that remain are:

0 0 1 2

0 0 0 3

and those, of course, are replaced by horny plates otherwise unknown in the world of mammals. This evidence would suggest that the young platypus has always needed milk.

This may be a good place to comment on the so-called pre-lacteal teeth of marsupials. This notion was discussed during the last century, but strong evidence appeared to show that these teeth are normal milk teeth, the development of which, however, is suppressed owing to the peculiar development and suckling habits of the young marsupials.

Some evolutionists argue (but we know that the whole notion is false) that humans have suppressed gills, showing descent from fish. If this were so, how much more would suppressed milk teeth show descent from—(what it pleases us to call) higher mammals! The devastating effect of any such conclusion on evolution needs no pointing out.

Other Features

The monotremes, like other mammals, have seven cervical vertebrae. However, those vertebrae have ribs attached. Many evolutionists have seized upon this fact as evidence of a connection with reptiles. I can not agree. I have examined, for instance in the Liverpool Museum, the skeletons of many reptiles, monotremes, and other mammals. On one occasion, I remarked (concerning the reptiles and monotremes) to the person in charge: "They are not quite the same, are they?" She replied: "They are nothing like the same". In particular, I can not see that the ribs are really similar.

The discussion above has come back to homologous organs. It should be stressed that that notion is far from unambiguous. One can see this by comparing textbooks; some will call the monotremes reptile-like, others only like reptiles in certain aspects.

Recently there has been much work on molecular biology, with the thought of tracing relationships thereby. It is interesting, then, to note that the DNA content of monotremes is from 93% to 98% of that of placental mammals. The corresponding figures for such marsupials as I have been able to obtain information about are 81% to 94%. Is someone ready to say that the monotremes are more closely related to the placental mammals than the marsupials are? Also, it is my understanding that the monotremes, like most placental mammals, are authentic diploid species.

There is Really Nothing Reptile-Like About Monotremes

It has been claimed that some of the monotremes' cells, tissues, and organs are reptile-like; for instance the cortical tissue of the *Tachyglossus* and even more so of the *Zaglossus*. In comparison with the diploglossian reptiles, for instance, it has been stated that the type of cell, and arrangement into tissues is so similar that the one might pass for an illustration of the other.

Very strong words these—and they might lead one to think (maybe they were intended to do so) that these characteristics have been passed down by evolution from reptiles. Or, at least that the monotremes have some reptilian components, again explicable by evolution.

But what is the truth? It is that these animals have no real reptilian tissues, cells, or components. They are true mammals.

Again, it might be argued that the peculiarities of the monotremes have descended from mammal-like reptiles of the past. But one can reply:

1. If the mammal-like reptiles which are invoked were real reptiles having reptile-like tissues which, however, formed mammal-like structures; then in the monotremes, which were supposed to be closely related, the opposite occurs: mammal-like tissues form reptile-like structures. Such a state of affairs would be strange, to say the least!

2. Again, if it should be said that the cells, tissues, and organs of the monotremes are the same as those found in the so-called mammal-like reptiles, then those reptiles must really have been mammals; for the monotremes are without doubt a type of mammal.

3. The only way, then, to argue for a connection with reptiles would be to maintain that the characteristics of the monotremes are really reptilian. But that, as already noticed, would be false. The monotremes have no real reptilian tissues. So the alleged connection with reptiles is completely cut.

In conclusion, then, there is no reason to doubt that these animals were created more or less as we find them, to fill their peculiar niche. If, however, some changes have taken place over the centuries, those changes were not such as to move the monotremes from one kind into another. Again, what I have called the fourth law of creation is seen.

References

- Griffiths, Mervyn, 1979. The biology of the monotremes. Academic Press.
 Renfree, Marilyn B., 1981. Marsupials: alternative mammals. *Nature* 293(5828):100-101.
 Gish, Duane T., 1981. The mammal-like reptiles. *Acts and Facts* 10(12):Impact section. Institute for Creation Research, San Diego.

AN ESTIMATE OF THE CURRENT STATUS OF EVOLUTIONARY THINKING

JOHN N. MOORE*

Received 13 February, 1981

This article is a critical examination of current evolutionary thinking, as exemplified in statements by prominent evolutionists. Six points especially noticeable in this thinking are (1) disregard of the grounds of and limiting principles of scientific methodology; (2) equivocations of the word "evolution"; (3) primary reliance on circumstantial evidence; (4) extensive extrapolation; (5) dependence on error; and (6) use of "cover words" as practiced by evolutionists.

Introduction

An estimate of the current status of evolutionary thinking¹ could be implemented by a critical review of the book, *Evolution*,² a 1977 composite publication of statements by four important evolutionists. Another approach to the task of appraisal and judgment of evolutionary thinking could be offered in an article-by-article critique of the September 1978 issue of *Scientific American* (entitled "Evolution") in which nine evolutionists present *their* statements of the current status of evolutionary thought.

In the latter publication the authors are very candid when they admit several problem areas that evolutionists face. With regard to the earliest cells, J. William

Schopf states, "Although much remains uncertain . . ." (p. 137). Then James W. Valentine admits, "The details of the diversity and abundance of plant species through Paleozoic and Mesozoic eras are largely unknown." (p. 158) With regard to ecological systems, Robert M. May recognizes that there is a "lack of convincing explanation". (p. 175) And Sherwood L. Washburn is most candid in his statement that the origins of human speech remain a mystery. (p. 206)

As further introduction I provide a specific list (with page references of current problems (explicit and implicit) contained in expressions by the *Scientific American* issue authors:

1. What is the role of chance? (p. 53)
2. What specifies the sequence of nucleotide bases? (p. 56) Which might be transcribed into the question, What is the "code" of the code?
3. How is supposed evolutionary progress to be explained by errors due to mutations? (p. 58)

*John N. Moore, M.S. (Plant Pathology), Ed.D. (Higher Education), is Full Professor of Natural Science at Michigan State University. For thirty-four years he has taught general science courses for non-science majors; and he gives a critical examination of origins a prominent place in the subject-matter.

4. What is the empirical evidence of gradual accumulation of minor mutations? (p. 59)

5. What is the explanation of the fact that no new physical traits result from mutation, but only modifications of existing traits result from mutations? Which might be transcribed into the question: If an allele arises by mutation from a preexisting gene, what is the source of any new physical trait? (p. 60)

6. How do species arise? (p. 66)

7. How did living substance arise by non-biological means? (p. 70ff)

8. Which came first: metabolism or duplicating molecule?, protobiont or naked gene? (p. 73), amino acid matching or changing enzyme? (p. 86)

9. What is the cellular source of prokaryotes? (p. 140)

10. Which came first, the ecological niche or organismal adaptation? (p. 216)

Of course the greatest problem of all: How did "evolution" start?, involves sub-problems, such as: How were raw materials formed? How are monomers formed? How did polymerization occur? How did segregation of living matter from the environment occur? How did reproductive machinery occur? (p. 73)

With statement of these problems as background, the following material is presented as a broad, wide-ranging analysis.³ My appraisal of the current status of evolutionary thinking is provided in six sections dealing with (1) disregard for the grounds of and limiting principles of scientific methodology, (2) equivocations of the word "evolution", (3) primary reliance on circumstantial evidence, (4) extensive extrapolation, (5) dependence on error, and (6) use of "cover words" as practiced by evolutionists.

(1)

Evolutionist thinking is based upon a "reaction in grand scope" to the philosophical ground of the scientific discipline and, in turn, upon actual disregard for scientific methodology.

Modern science started in the 1600's when the earliest scientists began to use mathematics and experience as "guiding rules" for their explanations of physical phenomena. Their emphasis on quantitative measurements was in specific contrast to Aristotelian metaphysics and Scholastic philosophy, which emphasized a qualitative approach through deductive reasoning primarily. The founders of modern science developed a logico-mathematical and empirical approach in their studies of the physical environment; the expression, "experimental science", was first used by Roger Bacon.⁴

Though the point is not generally discussed in this twentieth century, modern science began because the "founders" believed⁵ that the universe was contingent upon the creative acts of a Supreme Being. Early modern scientists acknowledged that no human being had observed the beginning of the universe, or of life on the earth, or of the first human beings. They knew that no ordinary human beings had observed first origins of their natural environment. They were particular inheritors of a written tradition about origins that is now considered by some specialists as recorded in the Ebla

tablets of around 2300 B.C., which was approximately 1000 years before Moses who is properly credited with the editorship of Genesis 1.

Many of the earliest modern scientists, who began the studies of astronomy, mechanics and physics, were first-hand students of Genesis 1. It can be shown that Kepler, Newton, Boyle, Pascal, Faraday, Clerk-Maxwell, Ray, Linnaeus, Pasteur and many, many other leading scientists who came after the early work of Bacon, Descartes and Galileo, accepted the position of Genesis 1 on first origins. Thus, modern science was begun by men who accepted Theism as the grounds for their presuppositional positions about first origins. It is possible to document⁶ quite positively the compound assertion that scientists until mid-nineteenth century formulated their ideas and methodologies consistent with presuppositional statements of "founding" physical and biological scientists who accepted Christian Theism as a "world view".

Since the founders and developers of modern science knew that they had not created themselves, and had not created the surrounding natural environment (including the celestial as well as the terrestrial), it is possible to identify certain *limiting principles* in their thinking and procedures. Their scientific work was:

1. *empirical*, that is, observational. They studied things in their natural environment and used tools and measurements to extend their ability to observe. The empirical principles of science were special means for defining the nature of scientific beliefs; that is, beliefs were not regarded as scientific unless they could be tested by scientific methods.

2. *quantitative*, that is, based upon measurements of changes of objects in their natural environment. They were concerned with physical reality, and restricted their investigating actions to the kind of reality that is measureable. Many of them deliberately altered or moved real objects so as to measure changes or aspects of relationships of those objects. Physical scientists especially set the style, so to speak, in always seeking to gain quantitative measurements, in terms such as length, weight, volume, and density. Just because values, morals, and spiritual aspects of human beings were intangible and immeasurable did not mean that they were unreal, but that they were outside the scope of scientific investigation.

3. *mechanical*, that is, these scientists sought to represent the order and patterns of things they found around them. They took the view that natural phenomena can and should be studied, described and explained by reference to matter and motion and identified physical laws. Science, then, was restricted to the direct or indirect study of the behavior of objects and/or events in the natural environment which were involved in cause and effect series. In some cases they set up physical models of what they were studying; in other instances they were able only to prepare orderly lists and stated divisions and subdivisions of classifications of objects and events.

4. *correctable*, that is, under repeated examination and re-examination errors could be detected, and the same results under similar conditions could be gained

and compared time after time. Through such steps they were able to arrive at certain lawful relationships of objects and/or events.

Because of the Industrial Revolution, and accelerated by other factors, more and more scientists applied, in extreme manner, the logico-mathematical and experiential approach to their natural environment. As a result more and more scientists turned from Theism to Deism, and next to Naturalism, and even to Atheism in search of "grounds" for their increasing success in applying a quantitative, physico-mathematical approach to all that they studied—even including themselves as objects of study. The ever increasing success of scientists who quantified and "materialized" their natural environment resulted in a "reaction in grand scope" against the supernatural outlook of Theism.

Hence many scientists accepted and adopted the evolutionary outlook so successfully popularized by Charles Darwin and his followers since 1859. Many, many scientists in the nineteenth century became almost complete *reactionaries* against Theism. (Note: A reactionary is one who seeks to check, undo, or reverse an adopted position.) Evolutionists have applied their reactionary approach widely, as is fully evident in the quotation cited by John N. Deely in his study⁷ of the philosophical repercussions of evolutionary science:

The triumph of the theory of evolution as a concept, however ambiguous, metaphorical, or equivocal, is that it provides a means of synthesizing knowledge about the cosmos within a natural continuum of explanation. The order of nature cannot be described except in natural terms, the theory asserts; there is a natural bond connecting cosmic entities in their space-time continuum. As long as there is hope of joining prehistories of cosmic species in a natural sequence by a natural explanation, cosmic problems remain in the province of natural science. No preternatural, miraculous, or special Divine Intrusion need be postulated until the possibility of these natural causal relationships be ruled out. This frame of mind is largely due to the achievement of evolutionary theory in underscoring the continuity of natural events in time and space and in insisting on searching for natural relationships among all natural events to make them intelligible in terms of natural causes. This is excellent natural science; this is the premise of realistic natural philosophy; this is axiomatic to the natural theologian.

As a result of such reactionary thinking many astrophysicists, cosmogonists, reductionist biochemists, and megaevolutionists comprise a *cadre* of scientists who regularly disregard the philosophical ground of the scientific discipline, and also disregard the limiting principles recognized and followed by the founders of the scientific discipline. But the search by this cadre of scientists for "*natural relationships among all natural events to make them intelligible in terms of natural causes*" (Emphases added) has broken down, since no real "continuity of natural events in time and space" has been found. This cadre of evolutionists has let their thinking transcend normal limits of naturalism. This cadre of scientists has let their thinking go beyond the

limits of proper and orderly scientific work, which for centuries has been based upon the direct or indirect study of objects and/or events occurring in the natural environment.

"Natural" commonly refers to all objects and/or events that exist or occur in the physical environment (including the terrestrial and the celestial). In the logico-mathematical and experience tradition, within which modern science has developed so successfully, scientific hypotheses have been formulated about natural objects and/or events in the physical environment. Scientific hypotheses are necessarily those ideas of modern scientists that are empirically testable. As Ayala writes, "A hypothesis that is not subject to the possibility of rejection by observation and experiment cannot be regarded as scientific."⁸

But no evolutionist can accept or reject the Big Bang "hypothesis", the Autotrophic "hypothesis", the Heterotrophic "hypothesis", and any "hypotheses" about human origin on the basis of observation and experiment dealing with those events of origin. First origin questions do *not* involve naturally occurring events. Rather evolutionists practice extended extrapolation far beyond the dimensions and magnitudes of naturally occurring objects and events, as will be itemized in the fourth section of this paper.

Proponents of the evolutionary outlook desire to be "free" of the mathematical mode of Newton, that is, free of cause-effect relationships. Clearly the leaders of this nucleus of scientists need to be brought up short regarding their proclivity to transcend the natural and normal limiting principles of proper and orderly scientific procedure. However the evolutionist leader Mayr considers that "one of the most important contributions to *philosophy* made by the evolutionary theory is that it has demonstrated the independence of explanation and prediction."⁹ (Emphasis added) About this conclusion Deely remarks,

If, however, by contrast, Mayr and Scriven are right in contending that the organization of evolutionary research has demonstrated the independence of explanation and prediction, then, in the light of the essential considerations bound up with such a demonstration, it becomes necessary to acknowledge that the significance of Darwin consists less in any particular discovery than in a *return* to the ancient conception of sciences as *reasoned facts*.¹⁰ (Emphases added)

In other words, fundamentally, evolutionists are attempting to re-establish a philosophy of nature whereby reality is conceived in terms of accident, in terms of qualities, of imagined and "reasoned causes". Protagonists of the evolutionary outlook, as a sufficient and necessary explanation of *all* reality, push for an "evolutionist mentality" that rests upon fragile towers of "hypothesis" built upon "hypothesis", with much emphasis upon scenarios of what might have occurred in the past and much "at least in principle" reasoning.

Evolutionists go beyond fruitful, scientific research for normal, natural events when they write scenarios, that is, imaginative narratives, about supposed origins of observed objects and/or events in the present natural

environment. Evolutionists invent "hypotheses" which they believe are testable "at least in principle" about supposed origin of the universe, origin of life on the earth, origin of human beings. They think that if a "hypothesis" is testable "at least in principle" that such an idea is within normal, natural scientific processes.¹¹

Put another way, modern scientists conduct empirical tests of an idea about presumed past events, and then suggest, suppose, imagine that possible similar events did occur in the distant past. Such thinking entails the belief that simulated conditions in the present experience of research scientists were the actual conditions that occurred in the distant past. Yet scientists who think in such patterns do not establish unequivocally that simulated events, as tested, ever did in fact occur in the distant past.

Thus evolutionists have reacted against the ground of proper and orderly natural science to the extreme degree that they let their thought patterns transcend normal, natural objects and/or events. Actually evolutionist reactionaries employ a significant number of *supra*-natural concepts, that is, concepts beyond the natural. Violations of the logico-mathematical and experience "guidelines" of experimental science are multiple and repeated by evolutionists who search for *supra*-natural events which they try to make intelligible in terms of *supra*-natural causes.

(2)

Evolutionist thinking is based squarely upon *equivocation of the term "evolution."* Proponents and opponents, of course, agree that the term "evolution" can be understood to mean change. But what kind of change is intended?

Quite often proponents of evolutionist thinking will assert that "evolution" means *any* change. Thus some evolutionists actually hold that an individual "evolves" as embryological changes occur, resulting in more and more specific manifestation of the complexity of structure and function that was set essentially at the time of fertilization (that is, at the time of conception, as the term might be applied to human beings). To consider embryological changes in this way means that "evolution" and embryological development may be too easily accepted as synonyms.

But during embryological development the only changes that occur are manifestations of complexity already contained in the code in zygote, say, of each vertebrate—just to give attention to one large group of organisms as evolutionists do with regard to evidence of comparative anatomy and comparative embryology. Thus embryological development *cannot* be the same as complex structural and functional changes of physical traits (such as, feathers for scales, or wings for forelimbs, or netted venation for parallel venation), as are necessarily entailed when evolutionists claim that all kinds of animals have a common origin, or that all kinds of plants have a common origin.

Thus a real ambiguity exists with regard to the referent of the term "change" involved in the use of the term "evolution". And evolutionists do not eliminate the ambiguity in any significant manner when some maintain

that "evolution" is any change in the genetic composition of a population of organisms over successive generations.

Creationists insist upon rigorous resolution of the identified ambiguity with regard to actual referent for the term "evolution". The ambiguity about the meaning of "evolution", and hence the possible equivocation of embryological development and "evolution", must be resolved by evolutionists.

(1) On the one hand, do they mean genetic variational changes that are known to occur *within* all easily recognized kinds of organisms? (These readily documented and demonstrated changes might be labelled *microevolution*. But many well qualified scientists insist that the term is unnecessary since *limited genetic variation* is all that is involved.)

(2) On the other hand, do they mean that, over great extensions of time, genetic variational changes have occurred so that totally new kinds of organisms have come into existence from existing kinds of organisms? (That is, have present kinds of organisms come presumably from previously existing organisms which came from other organisms with the beginning of life on the earth in some unicellular organization of living matter? This magnitude of change *between* kinds of organisms might be labelled *megaevolution*.)

Which of the above two distinct magnitudes of "change" do evolutionists mean by their use of the term "evolution"? Their thinking and writing seems often so confused that it is impossible to be certain. Perpetuation of ambiguity about the meaning of the term "change" causes evolutionists to commit repeatedly the fallacy of equivocation.

Too often some evolutionist thinkers show disregard for actual and distinct magnitudes of change involved in their written and spoken expressions. The title of the second article, "The Mechanism of Evolution", in the September 1978 *Scientific American* by Dr. Francisco J. Ayala is a case in point. Primary discussion by Dr. Ayala is about genetic variations *within* separate, easily recognized populations of organisms (even *within* a single species). Thus Dr. Ayala writes primarily about limited genetic variation. Time and time again evolutionist thinkers refer to empirically demonstrated genetic variation *within* a population, and then they extrapolate to supposed changes in lineages of kinds of organisms that would involve presumably genetic changes of *all* populations. (The problem of extensive extrapolation by megaevolutionists is discussed in the fourth section of this paper.)

In this day of heightened emphasis upon precision and exactness in technical and legal fields it would seem most fitting and proper to this writer that specialists and non-specialists alike could expect that all evolutionist thinkers would practice the highest degree of care regarding their use of words and terminology in their specialty. Regrettably leading proponents of "evolution", and some editors of scientific journals and authors of scientific textbooks, seem willing to perpetuate confusion and maintain ambiguity of meaning when they do not make explicit efforts to give clear and definitive attention to recognizable meanings of the

term "change". Empirically demonstrated genetic changes *within* a single population of organisms should be adopted as the commonly understood referent of limited genetic variation. Supposed genetic changes *between* all populations of organisms should be adopted as the commonly understood referent of *megaevolution*.

(3)

Megaevolutionists make multiple use of *circumstantial evidence of similarities* detected among living things, or similarities among extinct, fossil things, or similarities among living and dead things. They emphasize the circumstances of similarities of genic materials, anatomy, embryology, cell biology, geographic distribution, protein components, and behavior. Then megaevolutionists use such comparative studies to "reconstruct evolutionary history" of past and present organisms, they claim that those organisms that are more similar to each other must have been more closely related than organisms less similar to each other. Of course all such comparative reasoning from detected circumstances is built upon one *basic assumption*: *The degree of relationship depends upon the degree of similarity.*

Rarely do megaevolutionists state this basic assumption so clearly as does Dr. Francisco J. Ayala in the second article in the *Scientific American* (September 1978) wherein on page 68 he admits that this "simple assumption is the logical basis of efforts to reconstruct evolutionary history" by means of comparative studies involving circumstances of similarities. Notice that Dr. Ayala mentions "logical" basis, and he does not write "biological" basis. It is well that he writes as he does, because all such efforts to "reconstruct evolutionary history" are just so much recitation of circumstantial evidence for a pattern of comparative reasoning that may be plausible to a megaevolutionist, yet is not at all biological. No actual lineages of different kinds of organisms are established by means of the circumstantial evidence of similarities. No breeding tests establish any actual biological affinities in the sense of lineages of different kinds of organisms.

Ideas of relationship by megaevolutionists based upon circumstantial evidence of similarities cannot be submitted to the very test of limits of variation recommended and called for by megaevolutionists themselves. In their definition of species megaevolutionists hold that interbreeding may be a test of relationship. As author E. Peter Volpe states, "Only through breeding tests can the basis of the variation be firmly established."¹²

Thus many, many variations or diagrammatic representation by megaevolutionists of supposed relationships or lineages among kinds of living and extinct things may seem plausible, but they are merely circumstantial, and do not represent scientifically established kind-to-kind lineages. Following are ten such examples (with page references) which megaevolutionists include in the *Scientific American* issue in which authors make statements on the current status of evolutionary thinking:

1. Time chart and organismal changes, pp. 54-55.
2. Amino acid sequence of cytochrome c, p. 69.

3. Chart of eukaryotes from prokaryotes, pp. 132-133.

4. Chart of kingdoms of organisms, p. 140.

5. Chart of supposed fish changes, p. 146.

6. Chart of supposed reptilian changes, p. 148.

7. Chart of supposed mammalian changes, p. 152-153.

8. Chart of supposed plant changes, p. 156.

9. Chart of immunological distances, p. 195.

10. Chart of supposed human evolution, pp. 196-197.

Actually these seemingly erudite representations of presumed lineages are based solely upon arguments from homology. The reader is reminded that the term "homology" means essentially that similar structures have the same (common) gene origin. In point of application, then, megaevolutionists are confident that detected similarities of the forelimb bone pattern of vertebrates are a *bona fide* basis for claiming relationship, close or distant; for all vertebrates with the same basic forelimb bone pattern *must* have come from the same gene pool. Ergo, all vertebrates are presumed by megaevolutionists to be related in some degree (depending upon the degree of similarity, over all). The megaevolutionist argument can be extended and represented:

- A. Similarities of bones—same gene source assumed
- B. Similarities of embryos—same gene source assumed
- C. Similarities of proteins, amino acids—same gene source assumed
- D. Similarities of brain form—same gene source assumed

However, Sir Gavin de Beer remarks as follows:

It is now clear that the pride with which it was assumed that the inheritance of homologous structures from a common ancestor explained homology is misplaced; for such inheritance cannot be ascribed to identity of genes. The attempt to find "homologous" genes, except in closely related species, has been given up as hopeless What mechanism can it be that results in the production of homologous organs, the same "patterns", in spite of their *not* being controlled by the same gene? I asked this question in 1938, and it has not been answered.¹³ (Emphasis in the original)

Thus the supposed lineages of different kinds of organisms that megaevolutionists present to the reader public as supported by the homological argument are nothing but circumstantial similarities that are completely non-nucleogenic, for two very specific reasons: (1) denial of the presumed common gene source, and (2) the clear lack of any interbreeding fertility of the distinct kinds which megaevolutionists claim are related. Any *ad hoc* "hypothesis" about suppressor gene mutations does not alter the complete genetic gap between major kinds of organisms, or the fully recognizable discreteness of all major kinds of organisms. Paleontologists more or less readily assign all fossils to one kind of organism or another; and all researchers, in the field or in the laboratory, always conclude their research with the very same recognizable kind of organism with which they began.

(4)

Megaevolutionist thinking is based upon *extensive extrapolation*. To identify the broad scope of the multiple facets of conceptualization involved in the extensive extrapolations of megaevolutionists I use the rubric, "Total Evolutionism".

From the excellently well documented meaning of the term "change" that is so demonstrably shown to occur *within* easily recognized kinds of organisms (which most properly should be labelled "genetic variation"), megaevolutionists extrapolate backward through immense time. The lead article by Dr. Ernst Mayr in the *Scientific American* (September 1978) affords a clear indication of the grand magnitude of megaevolutionary extrapolations. Presumably biological (organic) evolution was preceded by chemical (molecular) evolution, which was supposedly preceded by atomic (cosmic) evolution. (And specialists in social studies have extended evolutionist thinking to propose societal (social) evolution as a type of postlude to "biological evolution".)

But a most candid appraisal of this type of grand scale extrapolation brings out that megaevolutionists go far beyond the bounds of the viewpoint or world view of naturalism. Megaevolutionists do not restrict themselves to study or consideration of only naturally occurring objects and/or events. Fully integral to megaevolutionist thinking is the repeated inclusion of catastrophic, *unnatural* objects and events of truly colossal magnitude in comparison to any known naturally occurring aspects of the physical environment.

Actually megaevolutionists (that is, total evolutionists) begin their universe with a supposed explosion of some dense substance; then accretion of celestial objects, including the terrestrial globe called the earth; followed by spontaneous appearance of some living substance as progenitor of all present life on this earth; and then presumed gradual accumulation of errors due to minor mutations resulting in totally new organisms, including human beings.

However each one of these supposed changes is essentially *supra-natural*; that is, each one is beyond the scope of the natural. (Again, the term "natural" can commonly be understood to refer to those objects and/or events that occur and exist in the physical environment.) In no way does the total evolutionist possess any "key" in the present to help document the unnatural changes of catastrophic magnitude which are entailed in the full range of extrapolation from "cosmic evolution" to "chemical evolution" to "biological evolution" to "societal evolution". Following is an itemization of some of the missing "keys":

1. Megaevolutionists cannot find any "key" in the present of some naturally occurring explosion of a dense substance comparable to the major concept of the Big Bang "hypothesis". (Robert Jastrow admits that no cosmologists can scientifically study the events involved in the formation of the present circumstances of the universe.)

2. Megaevolutionists cannot find any "key" in the present of some naturally occurring combination of sub-molecular parts of matter that form into any living

substance. (J.D. Bernal admits that no biochemist can apply experimental research methods to the events involved in the formation of the circumstances of existing living substance.)

3. Megaevolutionists cannot find any "key" in the present of any naturally occurring events involving movement of dry rock masses that result in new mountains, nor the erosion to sea level of any mountain ranges.

4. Megaevolutionists cannot find any "key" in the present of any naturally occurring single land mass breaking into smaller land masses that move apart.

5. Megaevolutionists cannot find any "key" in the present of any naturally occurring mutational changes that result in any *new* physical traits. (Stephen Gould and David Kitts admit that there is no indisputable fossil evidence for gradual, megaevolutionary change of organisms in the past.)

As a corollary to these missing "keys" I call attention to the weaknesses of "historical reconstruction" of past objects and/or events that are so freely included in written and spoken expressions of megaevolutionists. Most properly "reconstruction" follows particular "construction" work by human beings. But megaevolutionists practice their "art" of developing reconstructions by plausible sounding explanations, such as: (a) human beings are here so they *must* have come from some "lower" source; (b) life already exists on the earth so there *must* have been prior conditions where there was no life; and (c) the universe is here and seems to be "expanding" so it *must* have come from a state of greater density.¹⁴ Megaevolutionists, then, do not, in any rigorous sense, "reconstruct"; rather they generate extensive imaginative scenarios about possible animal "ancestors" of human beings, imaginative explanations about previous conditions of rocks and land features (hence presumed environments of living things), or imaginative narratives about the origin of the solar system and the universe.

Dr. Richard E. Dickerson provides an extensive example of scenario "reconstruction" in his article, "Chemical Evolution and the Origin of Life", in the *Scientific American* (September 1978). He clearly writes about a five-part scenario (one of his own words) regarding raw materials, monomers, polymers, isolation of living substance, and reproductive continuity as he considers "the problem of the evolution of living cells". Of course Dickerson admits early in his article (on page 73) that it is one thing to propose *scenarios* of the origin of life that *might* have been, and another thing to demonstrate that such scenarios are either possible or probable. (The reader of the September issue finds that Dickerson states that he provides a "story" of beginning life on the earth. Another author in the same issue writes of the "story" of presumed evolution of animal behavior (p. 191), which follows mention (p. 161) of a book entitled, *The Ecological Theater and the Evolutionary Play*. Are these stories fully credible examples of "scientific writing?")

In sum, megaevolutionists use "reconstruction" as a cover word for their extensive extrapolations, as is pointed out in the final section of this appraisal of the state of affairs concerning evolutionist thinking.

(5)

Megaevolutionist thinking is based squarely upon *multiple errors*; that is, upon supposed fortuitous mistakes. I refer, of course, to the control position of the concept of mutation in megaevolutionist thought patterns. Megaevolutionists always turn to mutations as the ultimate source of all genetic variation. Just such a statement is made by Dr. Francisco J. Ayala on page 58 of his contribution to the *Scientific American* (September 1978). On the same page Ayala recognizes that a mutation can only be considered an *error* in replication of DNA.

Since a gene mutation, then, is equivalent to a mistake, megaevolutionists have based their entire position upon some supposed gradual accumulation of minor mutations; that is, minor errors of the genic components of living things. Presumably the genetic message has been altered over time by slow accumulation of errors. Yet where is there any citation of actual empirical evidence of accumulation of mutational changes in genic materials resulting in the appearance of totally *new* physical traits?

In my assessment of the current status of evolutionist thinking, I find that "disciples" of the late Theodosius Dobzhansky are proponents of a fallacious, deceitful position when they commonly state that mutations are raw materials upon which natural selection acts. Since "natural selection" is no more than a cover expression for the fact that differential elimination occurs, and not any actual selection, as animals and plants interact with the natural environment, stability of kinds is *the* fully empirical datum of modern biologists. Conservation of kinds of animals and plants obtains as a result of the genetic aspects of the reproductive processes, sans any consideration of extinction of some kinds in recent decades (and evidently in years past according to interpretations of certain fossil materials).

Setting aside the oft repeated claim that some mutations can be beneficial, the fact remains that mutations are regularly identified as deleterious, debilitating and degenerative. Mutations, then, are representative of a type of biological entropy. Mutations commonly result in reduced viability and/or lethal conditions for affected individuals.

But most critical to the full dependence of megaevolutionists upon mutations is the very significant point that no *new* physical traits result from mutations. Gene mutations are no more than aberrations of already existing genes. Gene mutations result only in modifications of already existing physical traits.

Modifications of bacterial metabolism may be due to gene mutations. Modifications in wing condition or eye color, as demonstrated in *Drosophila*, may be due to gene mutations. But gene mutations result in no more than aberrations of already existing genes for wingedness or for eye color, and hence no more than aberrations in *existing* physical traits occur—*no new* physical traits come into existence. Even homeotic mutations do not result in new physical traits.

Megaevolutionists exhibit an incredible dependence upon demonstrated mistakes in gene duplication (mutations) and presumed accumulation of such mistakes to

"explain" their imagined transmutational scenarios about plants and animals. Such scenarios may seem plausible to persons with prior commitment to the megaevolutionist point of view, but the scenarios have no biological basis.

Gene mutations do not result in any new physical traits. Yet explanation of the origin of highly unique physical traits (such as, upright-bipedal locomotion, hair, mammary glands, wingedness, feathers, internal skeletons, hollow bones, dicotyledons, pollination resulting in enclosed seeds, vascular bundles, life cycles, photosynthetic processes dependent upon chlorophyll) *must* be provided by megaevolutionists, if their scenarios are to be taken at all seriously. Gene mutations, as errors, are totally lacking in any explanatory value, since no new physical traits result from gene mutations.

(6)

Lastly, megaevolutionist thinking is based upon an *almost indiscriminant use of words*; that is, (a) words which might be called "cover words", and (b) extensive use of qualifying words about presumed objects and/or events of the past.

(a) "Cover Words"

By "cover words" I mean terms that are often used in misleading ways in written and spoken expressions about presumed megaevolution. Consideration of at least a dozen commonly used "cover words" should make this point quite clear.

1. *Adaptation, adapted*: These words merely refer to observed circumstances or conditions that exist; no substantive explanation is gained as to how the recognized conditions came into existence. To write that an organism is "adapted" seems to explain something, but no real knowledge is gained as to how fish came to live and swim in water, or for that matter how birds came to fly in the air.

2. *Date, dating*: These terms are used with respect to rocks or events of the past to convey the connotation of the degree of accuracy gained from specific measurements by man-made chronometers, or the known time of beginning of some man-made product. The time of commencement of a trip can be checked against a watch. The first cotton gin can be dated, as the first automobile can be dated, since some records of such man-made objects are available. "Dates" of rocks are *only* estimates. The age of a rock can only be *estimated*.

3. *Historical, history*: Proper use of such terms involves activities of human beings; so misleading use by megaevolutionists with respect to imagined geologic events conveys the connotation that real objects and events were involved in presumed past eras of time. Most properly all imaginative narratives of geologists are *pre-historical*.

4. *Hypothesis*: In careful, proper, orderly scientific practice this term should be applied only to concepts that are testable by empirical procedures. Megaevolutionists make indiscriminant use of this term and hence give the impression that many of their ideas are in the same status as actually testable generalized statements

formulated by empirical scientists.

5. *Measurement*: Too, too often this word is used when the term "estimate" would be more accurate, as was stated above with emphasis in comments on the term "date".

6. *Natural, Nature*: Megaevolutionists grossly misuse this term, as if they have knowledge of or have studied natural objects and/or events of the past. Too often megaevolutionists, and students who study their books, consider that if some event or process can be thought of; that is, if an idea is "thinkable", then, the event or process involved is "natural". Such is not the case, for example, for tectonic or orogeny concepts regarding mountain building, since such concepts are supranatural in the degree or magnitude imagined by megaevolutionists.

When the term "nature" is capitalized, as "Nature", then reification and deification of part of the natural environment ensues. Such anthropomorphic usage is inappropriate for scientists who claim to be operating from a naturalistic position.¹⁵

7. *Natural selection*: This expression is a cover for differential elimination (or differential survival). Commonly the term "selection" conveys the connotation of volitional (willful) choice by human beings, and usually according to certain criteria (as in artificial selection); yet no criteria of selection exist in the natural environment. Volitional choice of the type practiced by human beings in artificial selection *does not occur* as organisms interact with each other and with the natural environment.

8. *Reconstruction*: Megaevolutionists use this cover word to gain connotative meaning for imagined scenarios about supposed past geologic features and/or events (or about exterior appearances of organisms when only articulated skeletons are known). The word is properly associated with such work as the reconstruction of Williamsburg, Virginia, of the colonial time period. In the latter reconstructive work, actual records and eye-witness reports of previously existing constructions are available, whereas no such records or reports of participants are available to megaevolutionists. "Reconstructions" by megaevolutionists are no more than imagined narratives or imagined appearances.

9. *Record*: This term usually is associated with activities of human beings; so when megaevolutionists use the term as in "geologic record", or the "fossil record", they improperly convey the connotation of actually witnessed occurrences. Megaevolutionists can write and speak accurately only about the *existence* and *description* of rock layers or fossil materials.

10. *Related, relationship*: When megaevolutionists employ these terms with regard to different kinds of organisms they convey the connotation of observable, reproducible lineage relationships. Actually, megaevolutionists can write or speak accurately, in rigorous discourse, only of mere *similarities*, since "relationship" is discernable only by means of breeding practices to set the limit of variation.

11. *Sequence*: When megaevolutionists use the term in connection with discussions of rock layers they convey the connotation of some known cause-effect rela-

tionship. Megaevolutionists are not able to discern such relationships between fossil materials in the rocks, and hence go beyond exactness of observable conditions. When megaevolutionists write or speak about rock layers or fossils as in "sequences", they regularly commit the fallacy of *post hoc ergo propter hoc*, which is the logical error of reasoning that something is the cause of something else merely because the former is presumed to be earlier in time.

12. *Trace*: Megaevolutionists use this word for presumed detection of lineages of plants and animals; but such activities can only be deemed plausible, yet they are not at all biological. Such use of this term "covers over" the proper distinction between speculated lineages, and actual events "traced" by careful analysis conducted by human beings, often employing technical detection equipment.

(b) Qualifying Words

An explanatory comment is in order regarding use of qualifying words by megaevolutionists about presumed objects and/or events of the past. It is true that empirical scientists make use of such terms as "might", "assumed", "possible", "could" or "should"—but such usage is proper just because empirical scientists actually submit their qualified phrases (usually parts of hypotheses) to direct and indirect test, and even to re-test. Megaevolutionists, however, who use such qualifying words about the past, wherein no human experiences are possible, give the impression that their statements are in a similar testable status as the qualified phrases of empirical scientists.

I have analyzed the September 1978 issue of *Scientific American* for author use of qualifying words. Authors of the nine articles contained in that issue were summarizing what is understood by the majority about the current status of evolutionist thinking about the so-called "history" of life on the earth. Of a total of 36 qualifying words counted in the cited articles, the most repeatedly used words (with frequency counts) were:

may, might (79)	probably (18)
could (53)	must (17)
would (51)	perhaps (15)
suggested, suggestion (32)	argued (10)
seem (28)	suppose (9)
appears, apparent (21)	assume, assuming (8)

Other words used were: conceived, believed, surely, expect, should, plausible, thought, presumably, guess, and proposed.

One author acknowledges his "qualifying statements" about chemistry of life and another writes, "Setting aside these caveats . . .", which are refreshing indications of candidness on the part of megaevolutionists. Nevertheless the reader of article after article by megaevolutionists, and book after book by megaevolutionists, is kept very busy noting the exceedingly high usage of qualifying words. In contradistinction to the practices of empirical scientists, megaevolutionists are quite incapable of testing, let alone re-testing, their qualified statements about objects and/or events of the past where human experience is totally impossible.

Conclusions

A wide-ranging appraisal of the current status of evolutionary thinking has been provided. Leading evolutionists are most pointedly identified as reactionaries against the world view of Theism, which was the ground for presuppositional positions of early scientists who were "founders" of the scientific discipline. Because of a steady disregard for the limiting principle so well practiced by founders of scientific methodology, modern evolutionists are violators of logico-mathematical, experience-oriented scientific endeavor. Modern evolutionists are really attempting to return to a philosophy of science by which they stress qualities and accidents in their dependence upon plausible arrangements of concepts that are not at all natural, that are not at all biological.

And because of their disregard for limiting principles recognized by founders of the scientific discipline and their continued generation of merely imagined scenarios, evolutionists practice equivocations of the word "evolution". They fail to distinguish between limited genetic variation and *megaevolution*. Further, when evolutionists fail to make clear distinctions between genetic variation *within* easily recognized kinds of organisms and presumed change *between* easily recognized kinds of organisms (megaevolution), they hide from their readers the fact that megaevolution is based primarily upon circumstantial evidence. Megaevolution may be plausible to someone with prior commitment to the evolutionary outlook, but the changes necessarily entailed are not biological.

Because of their prior commitment to a non-theistic viewpoint, a wide variety of reactionary evolutionists have been proponents of Total Evolutionism as *the* explanatory belief system that is both necessary and sufficient to encompass *all* of reality. The several subparts of Total Evolutionism were identified as Atomic (Cosmic) Evolution, Chemical (Molecular) Evolution, Biological (Organic) Evolution, and Societal (Social) Evolution. Thus evolutionists are quite guilty of over-extrapolation.

Evidently, again, because of their prior commitment to a non-theistic viewpoint, reactionary evolutionists are forced to rely heavily upon *error*, that is, mistakes of gene replication, called mutations. Yet megaevolutionists are completely unable to afford an empirical evidence for appearance of a single new physical trait as a result of mutational changes. Evolutionists regularly employ "cover words" that potentially convey quite inaccurate and inappropriate meanings when compared to proper and orderly scientific methodological procedures.

In summary, megaevolutionist thinking is a bankrupt world view that has been consciously developed as a *reaction* to the original Theism that was accepted and adopted by founders of the scientific discipline. The "evolutionist mentality" allows for statement subject to "all the dangers of extrapolation, all the limits of an in-

complete fossil record, all the weaknesses of indirect evidence and inference."¹⁶

Notes and References

¹The word "thinking" is used in this paper to avoid the ambiguous term "theory", which is used much too indiscriminantly by non-scientists, and not at all rigorously by evolutionists. Non-scientists may express some "theory" about almost any current problem or inquiry when actually the person really offers only a speculation or conjecture. Evolutionists do not usually differentiate between their "theories", which are merely speculations or conjectures about unrepeatable past events, and other scientific theories associated with repeatable aspects of the contemporary environment of laboratory or field scientists.

²Dobzhansky, Th., F. J. Ayala, G. L. Stebbins, and J. W. Valentine, 1977, *Evolution*. San Francisco: W. F. Freeman and Company.

³Other "tests" or analyses that I have published are: 1972 Chromosomes, mutations, and phylogeny, *Creation Research Society Quarterly*, 9 (3):159-171; and 1973 Retrieval system problems with articles in *Evolution*, *Creation Research Society Quarterly*, 10 (2):110-117.

⁴Maritain, Jacques, 1941, The conflict of methods at the end of the Middle Ages, *The Thomist* III (4):527-538.

⁵Butterfield, H. 1949 (Rev. Ed.), *The origin of modern science*. London: Macmillan & Co.; Hooykaas, R. 1972, *Religion and the rise of modern science*. Grand Rapids, Michigan: William B. Eerdmans Publishing Company; Jaki, Stanley L., 1974, *Science and culture (From eternal cycles to oscillating universe)*. New York: Science History Publications; Jaki, Stanley L., 1978, *The origin of science and the science of its origin*. South Bend: Regnery/Gateway, Inc.; Klaaren, Eugene M., 1977, *Religious origins of modern science (Belief in creation in seventeenth-century thought)*. Grand Rapids, Michigan: William B. Eerdmans Publishing Company.

Further corroboration of the fact that modern science is based upon the Christian world view has been stressed by both Whitehead, Alfred North, 1926, *Science and the modern world*. New York: Macmillan and J. Robert Oppenheimer; *On science and culture Encounter*, October 1962.

⁶See documentation in footnote 5.

⁷Deely, John M., and Raymond J. Nogar, 1973, *The problem of evolution*. New York: Appleton-Century-Crofts, p. 22.

⁸Ayala, Francisco J., 1977, Philosophical issues (Chapter 16) (in) *Evolution*, Theodosius Dobzhansky, Ayala, G. Ledyard Stebbins, and James W. Valentine. San Francisco: W. H. Freeman and Company, p. 476.

⁹Mayr, Ernst, 1961, Cause and effect in biology, *Science*, 134 (3489):1501-1506. See especially p. 1504.

¹⁰Deely, *Op. cit.*, p. 62.

¹¹Ayala, *Op. cit.*, p. 479, and also pp. 503 and 511.

¹²See *Understanding evolution*, 1977, Third Edition. Dubuque, Iowa: W. C. Brown Company Publishers, p. 4.

¹³de Beer, Gavin, 1971, *Homology, the unsolved problem*. London: Oxford University Press, p. 16. (Also No. 11 pamphlet in Oxford Reader Series distributed by Carolina Biological Supply Company, Burlington, North Carolina 27215.)

¹⁴See Dickerson, Richard E., 1978, Chemical evolution and the origin of life, *Scientific American*, 239 (3):70-86. He affords two more examples of "must" thinking because on page 73 he explains that nucleic acids and enzymes *must* have "evolved" together, and on page 86 he "explains" that the entire apparatus of the genetic machinery *must* have "evolved" in concert.

¹⁵Further examples of anthropomorphic expressions used by evolutionist authors are listed as excerpts from *Scientific American* (September 1978), and page references are provided:

(a) "... decisions of natural selection ..." (p. 51)

(b) "... living cell has two central talents ..." (p. 73)

(c) "... higher plants have mastered the technique ..." (p. 79)

(d) "... from which evolution re-created large animals ..." (p. 157)

(e) "... success of evolution in adapting organisms ..." (p. 158)

¹⁶Deely, *Op. cit.*, p. 23.

VELOCITY EFFECTS ON ATOMIC CLOCKS AND THE TIME QUESTION

THOMAS G. BARNES* and FRANCISCO S. RAMIREZ IV**

Received 27 January, 1981.

The experimental and theoretical work of Herbert Ives is presented as a logical alternative to Einstein's special theory of relativity. Rotational experiments are shown to indicate a light-bearing medium, refuting the foundations of special relativity. The relativity concept of time dilation is replaced by physically produced clock rate reduction when clocks move through the reference medium. The common sense concept of time is upheld as a fundamental quantity of science. The philosophy of relativism is shown to be detrimental to science.

1. Introduction

Although Einstein's relativity is defended vigorously in the halls of science, it rests on very shaky ground. What is worse, it has led science away from logical attacks upon important problems. The philosophy of relativism has diverted science, all too often, from common sense and rigorous logic to whimsical concepts that lead to paradoxes. That is particularly true for the concept of relative time. Many scientists have shown that Einstein's concept of time dilation is self-contradictory and have advocated logical alternatives.

Some scientists suggest that instead of time being altered by motion it is the measuring device that is altered, not time. For example, if an atomic clock is in high speed motion physical causes may make the clock run slow. A systematic error is introduced into the measurement of time, but time itself is not altered. To make this physical interpretation one must abandon Einstein's concepts. Fortunately a great Bell Telephone scientist and Rumford medalist, Herbert Ives, has done the ground work in setting up a logical alternative to Einstein's special relativity.¹ It is worthwhile to review some of his work.

2. Is There an Ether?

In his electromagnetic theory of light James Clerk Maxwell postulated a luminiferous ether, a medium that fills all space. He assumed that ether is a medium in which light waves are propagated. The famous Michelson-Morley experiment was designed to detect the motion of the earth through that medium and to measure its velocity with respect to that medium. In that experiment a light beam was split into two beams. One of those beams was directed out to a mirror and back in a direction transverse to the direction of the earth's motion. The other beam went straight ahead to a mirror and back. Both paths were the same length. It was expected that, due to the earth's motion through the ether, it would take longer for the round trip upstream and back than for the trip across stream and back. The difference in time would be due to the slow progress of the light when traveling against the ether stream. The result was that there seemed to be no time difference. This required some rethinking about Maxwell's theory.

Einstein abandoned the ether concept and introduced two postulates: 1) The absence of an absolute standard

of rest, no ether. 2) The velocity of light in space is constant, whatever the motion of its source.

Ives showed that Einstein's treatment is inconsistent and leads to real paradoxes. He developed an alternative theory based on more experimental evidence and made a consistent case for ether as the light bearing medium. He refuted the Einstein conclusion that time is relative. He retained the common sense concept of absolute time.

Einstein claimed that time runs slower in a moving system. Ives contended there is a physical retardation in the frequency of a moving light source. This might be classified as a retardation in the clock rate, not a retardation of time itself. Both used the same equation, with source velocity v and light velocity c :

$$t = t_0(1 - v^2/c^2)^{1/2} \quad (1)$$

Einstein interpreted t as the time. Ives interpreted t as the clock reading, not a precise measure of the actual time t_0 . Equation (1) gives a measure of the clock dilation, not time dilation.

3. Ives-Stillwell Experiment

Ives studied all of the famous experiments related to the relativity question. He deduced a theory that is presumably consistent with those experiments and with the ether concept. He showed that the famous Sagnac experiment (Fig. 1) and the Michelson-Gale experiment support an ether concept. Those two experiments employed rotating systems in which light beams were sent around a circuit in opposite directions. The phase difference observed when the two beams came together support the concept of light having been propagated in a medium that did not rotate with the system. Ives assumed that this nonrotating reference medium is the ether. These experiments refute the Einstein concept of constancy of the speed of light. Some claimed that accelerations involved in those experiments provide a way out for Einstein, but Ives refuted that claim by showing that these arguments lead to contradictory results.

In order to complete the case Ives and Stillwell, his colleague at the Bell Telephone Laboratories, carried out an experiment with canal rays. These canal rays consist of a beam of positively charged hydrogen molecules that emit light containing various frequencies.^{2,3} It was shown that the frequencies in this light source decrease with increase in speed of the hydrogen molecules. One would expect an observer to see a Doppler shift in the light from a moving source. However Ives contends that his experiment shows that there is a lowering of the frequency in the light source itself, as well as the expected Doppler shift. His observed lower-

*Thomas G. Barnes, D.Sc., is Professor of Physics at the University of Texas, El Paso, Texas 79968.

**Francisco S. Ramirez IV, B.S., is a graduate student in physics at the University of Texas, El Paso, Texas 79968.

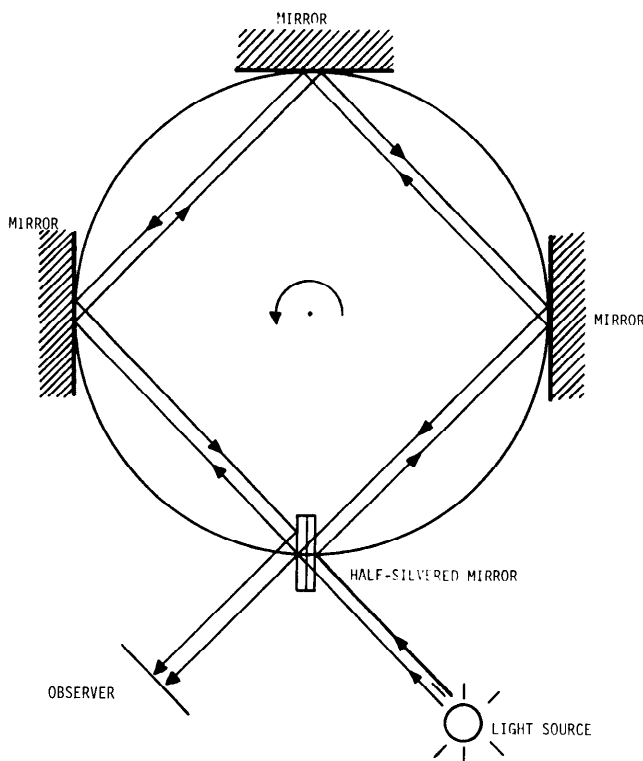


Figure 1. Sagnac's experiment. The whole system, including the source of light and the observer (which is a photographic plate, not a human) is mounted on a rapidly rotating platform.

The experiment by Michelson and Gale, mentioned in the text, was similar in principle; but the apparatus was set on the Earth, which, in its rotation, served as a rotating platform. Because the Earth's rotation is slower, Michelson and Gale's experiment had to be much greater in physical extent.

ing of frequency in the source is given by the equation

$$f = f_0(1 - v^2/c^2)^{1/2} \quad (2)$$

where f_0 is the frequency of the source at rest. This amounts to a red shift of the center of "gravity" of the original frequencies in the light source.

The Doppler effect is the classical Doppler effect. It has a blue shift when the source is moving toward the observer. The net shift is the product of the frequency shift given by the equation (2) and the classical Doppler frequency shift. Ives interprets this as a physical effect on the light source plus the Doppler effect. Einstein gives no physical reason.

Ives' equations are similar to those of H.A. Lorentz. Einstein adopted Lorentz's equations but put a different interpretation on them. They are called the Lorentz-Einstein transformations. Lorentz never accepted Einstein's concept of time dilation nor his corollary concept of space contraction. Lorentz considered his equation to represent real physical effects, namely a change in clock rate and a contraction of rod length. That is also the view held by Ives. Ives' equation for length contraction is the same as the Fitzgerald contraction, a real physical shortening of the rod. Fitzgerald was contemporary with Lorentz and made the original suggestion of length contraction. (Or according to Dingle, originally transverse expansion.) Ives was able to explain the Michelson-Morley experiment in the same way that

Lorentz and Fitzgerald explained it, with altered clock rate and altered lengths of the arms in the instrument. The clock rate change and contractions yield the null effect observed by Michelson and Morley.

4. The Clock Paradox

Einstein's theory leads to a well known clock paradox. He claimed that one clock moving at great speed would run slower than a clock at rest. However according to Einstein's other postulate one can not tell which clock is at rest. The result is that, in his illustration, the clock he claimed to run fast could equally be the one to run slow, an obvious absurdity. Ives evades that contradiction by having a standard of rest, the ether. All motion is with respect to that fixed reference.

Ives used the same reduction ratio for both clock retardation and length contraction. That ratio is

$$(1 - v^2/c^2)^{-1/2}; 1 \quad (3)$$

This is the same as the ratio proposed by Fitzgerald. Ives did not claim to be able to detect the absolute value of motion with respect to ether. He was not able to measure the total rate at which the earth is moving through space. However all of his results are consistent with an ether. The clock reduction and length contraction prevent him from detecting the value of *linear* motion with respect to the ether. That is what prevented Michelson and Morley from detecting the rate of motion through ether. However in the rotation experiments of Sagnac and Michelson-Gale the rotational motion with respect to the ether was measured. That is sufficient to refute Einstein's rejection of any standard of reference.

What this amounts to is that Ives has a valid theory that does not have self-contradictions, such as those in Einstein's theory. His theory deduces, in a straightforward way, a fundamental foundation for electrodynamics and checks with the basic experiments. He acknowledges the debt he owes to the early scientists by stating that his "views will be recognized as those of earlier students of the subject—Fitzgerald, Larmor, and Lorentz—but not of those who would shift the burden from variant measuring instruments to the nature of space and time."⁴ This last remark shows his rejection of the Einstein philosophy.

5. Another Contradiction

V. Vergon points out the following contradictions between Einstein's special theory of relativity and the results of the Ives-Stillwell experiment.⁵ In his original paper Einstein considered the case of an observer moving with velocity v at an angle ϕ with respect to light rays from a distant star, a source considered to be at rest.⁶ He derived the equation for the "observed" frequency f in terms of source frequency f_0 , namely

$$f = \gamma f_0(1 - \beta \cos \phi) \quad (4)$$

where $\beta = v/c$ and $\gamma = (1 - \beta^2)^{-1/2}$

In the Ives-Stillwell experiment the source of light was moving and the observer was at rest. For simplicity, the comparison will be made for the orthogonal condition, that is to say the condition in which the angle ϕ between source or observer velocity and light rays is 90° . Einstein's equation (4) reduces to

$$f = \gamma f_0 \quad (5)$$

The comparable Ives-Stillwell result is given by equation (2) which is recast in the form

$$f = f_0/\gamma \quad (6)$$

The Ives-Stillwell experiment was done with a moving source and the Einstein equation applies to a moving observer. Einstein's first postulate demands that the result for both cases be the same. That postulate states that there is no standard of rest, all motion is relative. This relative motion is equal; relativity can not distinguish which one is at rest. Einstein's relativity demands that the results of these two cases be the same. Quite obviously equations (5) and (6) are not the same. Equation (5) is an increased frequency and (6) is a decreased frequency. Hence the experiment contradicts Einstein's theory.

6. Speed-altered Spectral Characteristics

Our particular interest in Ives' work is his experimental and theoretical evidence that there is a decrease in the "standard" frequencies associated with a hydrogen ion, H_2^+ , when it is in high speed motion. Our explanation is:

- 1) That the electromagnetic fields are induced within the hydrogen as its charge components move through the reference medium.
- 2) That there is an interaction between the electromagnetic fields and the hydrogen's electrical components which reduces the frequency of its spectral lines.

This is consistent with the paper entitled *A Classical Foundation for Electrodynamics*⁷ which shows that movement of an elementary charge through a reference medium will, through a feedback process, develop an electromagnetic field. That field is expressed by the same equation as the relativistic field in a "preferred" frame of reference. This presumably checks with experiment. No time dilation nor space contradiction is involved. That development was based on classical physics plus a reference medium and a feedback concept.

Each electrical component of the hydrogen is in the field of the other electrical components. Since those fields are altered by the movement of their associated charges through the reference medium, the interaction forces between the various charges is altered by this translational motion. The direction of these altered forces is governed by whether or not the two interacting charges are of like sign or of unlike sign. As a consequence of the two charges moving in the *same* direction, if the two charges are of like sign, the altered force (a magnetic force) is a pinch effect, an attraction. If the two charges are of unlike sign the altered force is a repulsion effect. This is analogous to the attraction between two parallel currents flowing in the same direction or the repulsion force between two parallel currents flowing in opposite directions.

To explain the lowering of the spectral frequencies in the Ives-Stillwell canal ray experiment, first consider radiation of the spectral lines to be the result of vibration of the oppositely charged electrical components in the hydrogen. Motion of these charges induces a repul-

sion force between those components. This repulsion force is not as large as the coulomb attraction force binding the charges together, but it does cause a weakening of that binding force. This weakening of the net force holding these components together explains the lowering of the vibrational frequency. It is well known that a weaker spring in a vibrating system yields a lower frequency of vibration. In this case it means a lowering of the spectral frequencies, the effect that has been observed experimentally.

7. Consequences of False Notions About Time

Science has its fads and foibles, but false notions about time have been in vogue too long. Even though top scientists have questioned both the logical consistency and the experimental validity of Einstein's relativity ever since it was first proposed, it still dominates the philosophy of science. Unfortunately the philosophy of relativism has spilled over into other "disciplines". The fruits of that distorted philosophy are evident in the ills of society today.

When one rejects such a fundamental entity as time, it is not surprising how far afield his logic may drift. The concept of relative time has led science into all sorts of nonsense. An illustration of the kind of nonsense inherited from Einstein's relativity can be found in the following quote from one of the leading textbooks in astrophysics: "If we first fall down the steps and then hurt ourselves, the universe is expanding, time flows 'forward', and physical systems tend toward randomness. If we first hurt ourselves and then tumble upstairs time is actually running 'backward', and the universe is contracting and physical systems are becoming more and more ordered. It may be just a matter of definition."⁸

With that kind of "logic" one can accept anything by changing the definition: after all everything is relative; there is no standard; make of it what you will. Needless to say that kind of relativism has been disastrous in science. That is one reason why cosmology has become less and less distinguishable from astrology.

Fortunately there is beginning to be an increase in the number of scientists who challenge Einstein's relativity. The works of Ives and Lorentz makes sense to them. They will be producers in science because they are on the right track.

8. Conclusion

From his two postulates Einstein developed his special theory of relativity which introduces the concept of time dilation. This theory contains logical inconsistencies. Furthermore it is not in accord with the experimental evidence from certain rotational experiments such as the Sagnac experiment. Those experiments imply a light bearing medium which Einstein rejected.

Ives suggested a logically consistent alternative: a light bearing medium and atomic clocks that run slower with speed; time itself is an independent entity that is unaltered by motion.

A qualitative explanation for this lowering of spectral
(Continued on page 235)

AN ANTHOLOGY OF MATTERS SIGNIFICANT TO CREATIONISM AND DILUVIOLOGY: REPORT 2

JOHN WOODMORAPPE*

Received 20 February, 1981

This report is not about one specific topic, but is a collection of miscellaneous findings conveying a diverse body of information of interest to Creationists and Diluvialists. It is thus a natural sequel to the author's first anthology.¹

Highlights of points concerning biological evolution include: 1) fallacies in claims of life from non-life, 2) lack of a proven driving mechanism; 3) the problem of "living fossils, 4) fundamental biologic phenomena not explained by evolution.

The section on "ancient reefs" further shows that: 1) ancient "reefs" lack a reef network, 2) these deposits were cemented inorganically, 3) growth orientation is no proof of growth in situ over immense periods of time.

Previous Creationists' observations about "overthrusts", such as lack of gouge, and perfectly conformable "thrust" contacts, are confirmed. Over two hundred cases of anomalous fossils are tabulated; and it is shown that such fossils typically do not show morphological evidence of the "reworking" which has been invoked to explain them.

A final section on uniformitarianism notes evidence to show that thick igneous and metamorphic rocks have formed and cooled quickly; and illustrates the blinding influence of uniformitarianism.

Plan of this Article

- I. BIOLOGICAL EVOLUTION: SCIENTIFIC AND PHILOSOPHICAL CONSIDERATIONS.
- II. FALLACIOUS CLAIMS OF "ANCIENT REEFS" IN THE GEOLOGIC RECORD.
- III. UNIFORMITARIAN CONFIRMATIONS OF CREATIONISTS' OBSERVATIONS CONCERNING (ALLEGED) OVERTHRUSTS.
- IV. SOME EXAMPLES OF "REWORKING" RATIONALIZATIONS FOR ANOMALOUS FOSSILS
- V. RATES OF GEOLOGIC PROCESSES AND UNIFORMITARIANISM: SCIENTIFIC AND PHILOSOPHICAL CONSIDERATIONS.

I. BIOLOGICAL EVOLUTION: SCIENTIFIC AND PHILOSOPHICAL CONSIDERATIONS

1. Incongruity of Claiming Evolution to be a Fact.

In a recent comprehensive work on evolution, Darlington, a zoologist based at Harvard, wrote: "Different minds will require different 'degrees of cogency', but I think that most persons who look at the evidence for themselves, and are not prevented by religious or political prejudices (i.e., by judgements before the evidence) will accept evolution as a fact".³

Publishing in 1969 (long before the Creationist movement had become widely known and many evolutionists had resorted, in retaliation, to dogmatic proclamations of evolution as fact) Savage⁵¹ wrote: "No serious biologist today doubts the fact of evolution, the development of all living organisms from previously existing types under the control of evolutionary processes . . . We do not need to list evidences demonstrating the fact of evolution any more than we need to demonstrate the existence of mountain ranges", (sic).

By contrast, Davies⁴ wrote: "No hypothesis is ever proven, only mathematicians prove things. In science, we can only ask whether or not a hypothesis seems to correspond with the real world, as best we perceive it . . . To take another hoary, but still politically active example, the debate about the theory of evolution would generate less heat if some of its proponents did not claim that the theory is a proven fact."

Comment: Even if evolution was very strongly supported by evidence, evolutionists should still have no right to proclaim evolution to be fact or attempt to

browbeat students and readers of their works to accept evolution as fact.

As is, all the premises of evolution completely break down under close examination, so "... most persons who look at the evidence for themselves and are not prevented by religious or political prejudices" should agree that evolution does not "correspond to the real world."

2. Utter Baselessness of all Evolutionistic Origin-of-Life Hypotheses

Brownlow² wrote: "Special conditions *may have* been required for the next step, the combination of biomonomers into the structurally complicated biopolymers, such as proteins. Only relatively simple biopolymers have been formed in laboratory experiments, and none of the extremely complex polymers of living organisms has been synthesized. It *seems* probable that fairly special (but not necessarily unusual) conditions were required for the evolution of biopolymers. For instance, this evolution *may have* taken place in isolated ponds where the necessary biomonomers were concentrated by evaporation and a chemical catalyst was present to make certain reactions occur efficiently. On the other hand, this evolution *may have* occurred in the oceans, where the clay minerals *could have* served as concentrators and as catalysts. We know that clay minerals have chemically active surfaces and interact with organic molecules. Laboratory research has shown that clay minerals can bring together different organic molecules and can stabilize amino acids. All this is, however, *pure speculation*. We know very little about the formation of biopolymers on the earth by non-

*John Woodmorappe has an M.S. in Geology, and a B.A. in both Geology and Biology.

biological processes. The next step, the formation of a living thing, is also *not understood* in terms of chemical processes. This step marks the actual origin of life and was followed by biological evolution." (italics added)

Comment: These statements demonstrate once again all evolutionistic claims of abiogenesis are sheer fantasy.

3. Origin of Metazoans Entirely Conjectural

Valentine⁵² wrote: "Just which of the many possible early metazoan forms was the actual primitive metazoan may never be known; all metazoan lineages of this grade are extinct. Fossils are unlikely to occur and would not be conclusive if found. There is no shortage of *speculative* reconstructions, however, the most famous being the blastaea-gastrea pathway envisioned to Haeckel (1874)." (italics added)

Comment: After the (supposed) origin of life from nonlife, the next evolutionary step imagined is the origin of metazoans and increase of biotal complexity and diversity prior to the origin of the phyla. It has been even said the 80% of molecules-to-man evolution had already been completed before the origin of the phyla. But just as the evolutionary origin of life from nonlife is fantasy and wishful thinking, so also is the evolution of metazoans.

4. Lack of Proven Driving Mechanism for Evolution

Ruse⁵³ wrote: "Evolution is, to put it simply, the result of natural selection working on *random* mutations." (italics added)

In speaking of famous modern examples of supposed evolution at work (drug-resistant viruses, the peppered moth *Biston betularia*, etc.), Ruse⁵⁴ wrote: "The experiments are designed to tell one about the theory—this they do. They are not aimed primarily at the actual reconstruction of the history of life, and for this reason should not be blamed when they do not tell us about it."

Hallam⁵⁵ said: "Certainly, elucidation of evolutionary *mechanisms* must remain the province of geneticists and ecologists, but these scientists are denied the invaluable time dimension which allows us to investigate evolutionary *patterns* in a comprehensive and meaningful way. Such topics as crucial to a full understanding of evolution as the nature of diversity, change through time, rates of origination and extinction, progressive colonization of and adaptation to ecological niches, convergence and parallelism, paedomorphosis, size change, *the temporal aspect of speciation and origination of new higher taxa*, and radiation and extinction in relation to changing macro-environments, are decidedly the realm of the paleontologist." (italics added for phrase: "... the temporal aspect of speciation and origination of new higher taxa ...". Other italics his)

Ruse⁵⁶ wrote: "However, although geneticists know of some mutations which cause fairly drastic changes, they have entirely failed to discover the kind of macromutations required by the saltation theory—the kind of mutation which would take a group of organisms from one order to another. Moreover, the

large-effect mutations which are known are usually just those mutations which are the most crippling to their carrier . . . Of course, one might argue that the failure to find the right kind of macromutations does not necessarily prove their non-existence, but, like unicorns, there is a difference between saying that *logically* they might exist and that it is *reasonable* to suppose that they exist." (italics his)

Comment: The first statements (ref. 53, 54) of Ruse and the statements of Hallam concern evolution by gradual accumulation of selected micromutations, whereas the final statement of Ruse (ref. 56) concerns evolution via drastic mutations in relatively short periods of time.

Ruse (ref. 54) claims that such examples as the peppered moth are *bona fide* examples of and proofs of evolution, yet acknowledges that they in no way demonstrate that actual evolution of new living forms occurs. The statements of Hallam make it clear that all claims of real evolution (origin of new forms) appeal to paleontology. Knowledge from genetics, population biology, ecology, etc. in no way proves that macro-evolution is taking place. The claim that there *is* such a process as macroevolution must always appeal to the fossil record to imagine that it *did* happen. One can never prove from modern living things that macroevolution is happening or even *exists*.

Some newer concepts of evolution as "saltatory evolution," "hopeful monsters," "punctuated equilibria," etc., rely to a large extent on supposed macromutations. The final statement of Ruse (ref. 56) makes it clear that there is not one iota of evidence for these macromutations as sources for evolution.

5. Non-Preservation of Hard Parts of Ancestral Forms No Excuse for the "Cambrian Explosion"

Frey⁵ wrote: "A popular theme in organic evolution holds, in essence, that the 'sudden' appearance of fossils in Cambrian rocks reflects the acquisition by animals of hard parts capable of being preserved, not the rapid diversification of organisms themselves during earliest Cambrian time. If true, one should expect to find diverse assemblages of trace fossils in Precambrian rocks, which is not the case. Studies . . . show that trace fossils reflect an explosion in diversity and complexity in Cambrian rocks that is comparable to that of body fossils . . . thus ruling out the above theme as a simple explanation for impoverished Precambrian biotas."

Comment: Any ancestors of the phyla appearing suddenly at the basal Cambrian would leave a record of traces even if the ancestors lacked hard parts to be preserved as body fossils. The fact that traces also have a "Cambrian explosion" means that the only rationalization that evolutionism can invoke for the abrupt appearance of the phyla (and many lower taxonomic categories) in the Cambrian is the convenient claim that evolution was so rapid that it left no fossil record at that point.

6. Illogical Reasoning in Appeal to the Incompleteness of the Fossil Record as a Rationalization for Absent Transitions

Darlington⁶ wrote: "Many gaps and ambiguities occur in the fossil record and are stressed by critics, but (as Darwin noted) they are expected. Fossilization is and must be rare and chancy . . . The fossil record *must* be fragmentary. It would almost be more logical to criticize the record, not because it is incomplete, but because it is better than it ought to be." (italics his)

144 pages later, Darlington⁷ wrote: "Nevertheless, in spite of being fragmentary and biased, the fossil record gives us a surprisingly good view—almost a magical one—of the course of evolution at least of higher plants and animals."

Comment: Evolutionists can appeal to an incomplete fossil record as a rationalization for absent transitions and then turn around, contradict themselves, and point out that the fossil record is actually very rich.

Creationists Anderson and Coffin⁸ noted that further collecting of fossils sharpens, not closes, the gaps in supposed evolutionary fossil sequences. More and more evolutionists are recognizing this, and the "punctuated equilibrium" concept has been invented for this purpose (see below).

7. Incompleteness of Fossil Record No Excuse for Absent Transitions

Waterhouse⁹ wrote: "Darwin set aside most of the fossil evidence for evolution with the proposal that it was massively incomplete. But there were polemic rather than scientific reasons for this attitude because he insisted on gradualistic evolution which most fossils did not substantiate. But the fossil record can no longer be set aside as woefully incomplete. More than 100 years of study demand instead that the gradualistic concept be reassessed."

Comment: Because many evolutionists no longer believe that missing transitions can be explained away by appeals to non-preservation, they have proposed the "punctuated equilibrium" concept, where it is conveniently supposed that evolution of new taxonomic categories was so rapid that it left no fossil record at that point."

8. "Missing Links" Substantiating (Alleged) Human Evolution No Longer Expected to be Ever Discovered

Laporte⁵⁷ recently wrote: "Ironically, as the hominid fossil record improves, arguments for phyletic gradualism lose their force, particularly the old chestnut that 'if the record were better, we'd see transitional change occurring'."

Comment: The "punctuated equilibrium" concept is applied to human evolution. How often human evolution is presented as fact to the gullible public, yet now some evolutionists not only admit the lack of transitions in human evolution, but do not even pretend a hope that they will ever be found!

9. Human Evolution: Welter of Contradictions, Imaginations, and Ill-Defined Taxons

In an excellent up-to-date review article on human evolution, Cronin *et al.*¹³⁸ wrote: "However, not all palaeoanthropologists are convinced that *H. erectus* is

ancestral to *H. sapiens*." They then described 4 mutually-contradictory widely-held views of human evolution. The *H. habilis*-*H. erectus*-*H. sapiens* lineage was accepted and held common to the 4 views. One view held *Australopithecus africanus* and *A. afarensis* both ancestral to the aforementioned *Homo* line, another held the former but not the latter to be ancestral, another held the latter but not the former to be ancestral, and still another view held neither form to be ancestral to genus *Homo*.

Cronin *et al.*¹³⁹ also said: "Specimens often quoted as displaying 'intermediate' or 'mosaic' characters between *H. erectus* and *H. sapiens* include Broken Hill and Omo (Kibish) in Africa, Ngandong in Java, and Arago, Vertesszollos and Petralona in Europe. Other recently discovered fossils which may belong to this intermediate category are the . . ." ". . . present concepts of variation within the species *H. erectus* and *H. sapiens* need to be re-examined."

Cronin *et al.*¹⁴⁰ wrote: "Second, while the K-Ar dating of tuffs at Laetoli and Hadar remain to be confirmed by other dating techniques, such as palaeomagnetism, there are preliminary faunal indications that Hadar and Laetoli may be closer in time than the absolute dates would suggest."

Comment: The highly imaginative character of presumed human evolution is once again demonstrated by the highly contradictory views of how this supposed evolution took place (Cronin *et al.*, ref. 138).

The claims of Cronin *et al.* that the *H. habilis*-*H. erectus*-*H. sapiens* lineage is transition-filled (gradual cranial-size and body-weight increase, p. 118) is betrayed by the fact that these "species" of *Homo* are quite amorphous. The fact that many forms are "mosaic" and "intermediate" (ref. 139 cited above) between *H. erectus* and *H. sapiens* need not be evolutionary but simply indicative of the ill-definition, amorphousness, and artificiality of these "species." My article on cephalopods⁴¹ described similar phony transition-filled evolution in artificial genera. Cronin's statement (ref. 140) shows once again the selective acceptance of age-dating results.

10. "Living Fossils" Admittedly are not Explained by Evolution

Paul⁵⁸ wrote: "Nevertheless, examples are known among vertebrates (*Sphenodon*, *Latimeria*), invertebrates (*Neopilina*, *Platystrophia*), and plants (*Ginkgo*, *Araucaria*) and are thus too widespread to be ignored. Clearly there is some pervasive effect which allows the survival of small groups for long periods, but what it is remains unknown. The occurrence of 'living fossils' is partly due to our better understanding of the living world compared with the fossil record. Small groups have a relatively low preservation potential, but this only explains why small groups are not preserved, not why they manage to survive for long periods."

Comment: Creationists have long been calling attention to "living fossils" such as the coelacanth *Latimeria* and the maiden-hair tree *Ginkgo*. *Platystrophia* is an extant echinoderm that has persisted unchanged since the Ordovician, with last fossil appearance in the Devo-

nian. Paul admits that there is no evolutionary explanation as to why some forms persist for hundreds of millions of years after allied forms either evolved into something else or became extinct. It is easily explained by the discarding of evolution and geologic time via the Creationist-Diluvialist Paradigm.

11. Many Fundamental Biologic Phenomena Not Easily Reducible to Evolutionistic Explanations

Van Heyningen⁵⁹ said: "Why the tetanus and botulinus bacilli should produce these immensely potent toxins is a problem of great philosophical and practical interest. Diphtheria toxin and most other bacterial toxins attach and break down the tissues of the animal infected by the parent organism. In doing so, they assist the bacteria in the invasion because the bacteria grow well in disintegrating tissues. The tetanus and botulinus toxins, however, do not attack animal tissues generally. It does not appear to be of any survival value to the tetanus and botulinus bacilli to produce toxins that not only confine their action to nerve tissue but also, as far as can be seen, cause no damage even in this tissue. Yet on evolutionary ground it is hardly conceivable that the bacilli should produce the toxins unless they have some survival value."

Comment: This is yet another example of biologic phenomena that do not appear to have any survival value to the organism and hence do not support evolution and its "survival of the fittest" dictum.

12. Persistence of Belief in the Biogenic Law among Evolutionists

Darlington¹⁰ wrote: "In simple principle ontogeny does recapitulate phylogeny, but the recapitulation is at best incomplete and often also imprecise and complexly modified by omission of stages, distortion of sequences, or premature termination . . ."

Comment: Because of the inconsistencies noted above, the claim that ontogeny recapitulates (supposed) phylogeny is superficial at best.

13. Fallacies of Evolutionistic Attempts to Circumvent Probabalistic Arguments

Darlington¹¹ wrote: "To apply this concept to, for example, man: it was probably inevitable that an intelligent organism in some ways like man would evolve on earth. The probability that this organism would be man as he is, in all details, approaches zero. But the possibilities approach infinity, and one of these possibilities was (practically) sure to occur, and man is in fact the one."

In responding to the classic Monkeys-Typing argument, Darlington¹² said: "This is the kind of situation that obtains in evolution: the source of energy (analogous to the monkey) is the molecular and chemical energy of atoms and molecules, the 'living letters' are genes and their components, mutants, and combinations; and the additions have in fact been greater than the erasures, for otherwise evolution would not have occurred. Under these conditions, the probability that evolution will produce any pre-designated organism ap-

proaches zero, but the probability that some organism comparable to, say, man, in organization, complexity, and intelligence may approach certainty."

Comment: First of all, this argument begs the question. It is known that something *had* to evolve because evolution does take place, and evolution is known to take place because something *had* to evolve.

It has not been demonstrated (much less proved) that any living system *could* evolve, let alone that *some* sort of living system *had* to evolve. To say that complex living things are here because *some* complex living system *had* to appear is folly and presumption.

14. Evolutionistic View of the Basic Nature of Man: An Animal

Heinlein¹³ wrote: "Man is an unspecialized animal. His body, except for his enormous brain case, is primitive. He can't dig; he can't run very fast; he can't fly. But he can eat anything and he can stay alive where a goat would starve, a lizard would fry, a bird freeze. Instead of special adaptations, he has general adaptability."

Clebsch¹⁴ wrote: "Then Darwin's epoch making *Origin of the Species by Means of Natural Selection* (of 1859) and *The Descent of Man* (of 1871) made fables of the notion of human uniqueness and the story of the animals in Noah's ark. Put crudely, humanity bore the image of the ape-*creatio in imago simii*." (italics his)

Comment: Despite efforts by many evolutionists to downplay it, evolution clearly teaches that man is mere animal. It is fallacious for "theistic evolutionists" to imagine that man became the image and likeness of God (Gen. 1:27) at a certain point in his (alleged) evolution, for the simple reason that evolution does not recognize any qualitative difference between animals and man.

15. Evolutionistic Advocacy of a Cruel and Violent Nature

Darlington¹⁵ wrote: "The first point is that selfishness and violence are inherent in us, inherited from our remotest animal ancestors. They are not peculiar to man. Some biologists have tried to persuade themselves that cooperation rather than competition is the rule in nature, and that violence (a form of competition) is unnatural or secondary, but they are mistaken. Nature is, conspicuously, red in tooth and claw, and I do not see how naturalists who look carefully around them can doubt it. . . Violence is, then, natural to man, a product of evolution."

Comment: Evolution is therefore not only scientifically fallacious but also immoral. It reinforces the delusion that violence, etc. are natural and inevitable rather than the products of man's fallen sinful nature of his own responsibility. The fact that most evolutionists do not practice nor advocate violence is of no importance; reinforcing sinful delusions on a matter of such profound implication as the fundamental nature of man can do only harm, as spawning evil socio-political philosophies (see below).

16. Evolution and the Origin of Evil Socio-Political Philosophies

Concerning Darwin, Littell¹⁶ wrote: "He proposed that natural selection governs the evolution of forms of life; with the fittest surviving. The latter proposition became the basis of several schools of politics and social philosophy, including both laissez-faire economics and Nazism. The former displaced the view of man as a fallen angel and replaced it with man conceived as risen animal."

Hoffman¹⁷ wrote: "Hitler believed in struggle as a Darwinian principle of human life that forced every people to try to dominate all others; without struggle they would rot and perish . . . Even in his own defeat in April 1945 Hitler expressed his faith in the survival of the stronger and declared the Slavic peoples to have proven themselves the stronger."

Comment: These statements illustrate once again that many evil socio-political philosophies were and are based on evolution. It is interesting to note that Hitler's commitment to evolution was stronger than his commitment to Pan-Germanism.

While evolutionists deny any legitimate association with, or responsibility for, Nazi ideology and practice, their position reinforces delusions (see no. 15 above). Since the evolution tree is evil, it can only, sooner or later, in one form or another, give rise to evil fruit (Matt. 7:17-18). Some other evil fruits are discussed in sections below.

17. Evolution and Nihilism

Darlington¹⁸ wrote: "For example, we may say 'wings are to fly with', and this seems to imply purpose, but to most evolutionists it means only that the function of wings is flight and that flight gives wings the selective advantage that results in their evolution. This implies cause but not purpose. *Most evolutionists see no purpose in evolution even when they use language that seems to imply it.* I shall try not to use teleological language and (if I use it inadvertently) shall never intend to imply purpose by it." (italics added)

Comment: The strongly anti-teleological position of evolution is in diametric contrast to the Creationist position and its recognition of purposeful Divine design in nature (Psalm 139:14, Romans 1:20). Evolution could not possibly have been "God's method of Creation" as "theistic evolutionists" imagine because evolution vehemently rejects all notions of purposeful design. Evolution is thus nihilistic, as there truly is no purpose in anything other than simply that combination of matter which has survived.

18. Evolution and Monistic Principles

Clebsch¹⁹ said: "Most of the century's scientists, including Darwin, sensed the tension between the conclusions their data implied and their personal attachments to the traditional sense of human uniqueness. Even Haeckel wrote a book (in 1892) reconciling religion and science under monistic philosophy."

Comment: Theism and evolution are not "reconciled" under monism for the simple reason that monism is irreconcilable with theism. The growing popularity of Eastern mysticism among western universities may be partly the result of evolutionary concepts.

19. Impossibility of Reconciling Theistic Religion with Evolution

Darlington²⁰ wrote: "Holism and emergent evolution are only parts of a continuing and, I think, *continually unsuccessful* effort of some evolutionists to reconcile evolution, mystic ideas, and religions. Teilhard de Chardin was perhaps the best-known evolutionist who was still trying to reconcile them until his death a few years ago-after which the Vatican condemned his works." (italics added)

Comment: Any "reconciliation" of theism and evolution is doomed to utter failure because, while attempting to satisfy both, it inevitably ends up satisfying neither. Evolution and theism can't be combined because evolution is thoroughly and decisively atheistic. (see below)

20. Evolution: Atheism and Materialism

Darlington²¹ wrote: "The outstanding evolutionary mystery now is how matter has originated and evolved, why it has taken its present form in the universe and on the earth, and why it is capable of forming itself into complex living sets of molecules. This capability is *inherent in matter as we know it*, in its organization and energy.

"It is a fundamental evolutionary generalization that no external agent imposes life on matter. Matter takes the forms it does because it has the *inherent* capacity to do so . . . This is one of the most remarkable and mysterious facts about our universe: that matter exists that has the capacity to form *itself* into the most complex patterns of life. By this I do *not* mean to suggest the existence of a vital force or entelechy or universal intelligence, but just to state an *attribute of matter* as represented by the atoms and molecules we know . . . We do not solve the mystery by using our inadequate brains to invent mystic explanations." (italics added, except for *not*)

Comment: Evolution is clearly atheistic and materialistic. "Theistic evolution" is totally fallacious because: 1) evolution does not tolerate the notion of God having either started the process, nor directed it, nor intervened in any part of it. Nor could God have "used" evolution because evolution does not require Divine consent. There is no place for God in evolution *whatsoever*, while *everything* in evolution is purely the result of matter in motion. Nor could God have even created the natural laws that supposedly make evolution happen because even natural laws are inherent in matter. It is high time that believers stop attempting to compromise with evolution through fallacies such as "theistic evolution", recognize that evolution is unabashedly atheistic, and reject evolution *in toto* because it has no scientific basis.

How interesting that Darlington can simultaneously maintain that evolution is fact (see No. 1, this section) and at the same time acknowledge that how and why things (supposedly) evolve at all are an "outstanding mystery." How interesting also that how and why evolution (supposedly) occurs is an "outstanding mystery" yet it is something asserted to be demonstrably "inherent in matter." "Professing to be wise, they became fools . . ." (Romans 1:22)

II. FALLACIOUS CLAIMS OF "ANCIENT REEFS" IN THE GEOLOGIC RECORD

1. Introduction: Varying Uniformitarian Opinions Concerning "Ancient Reefs"

Shaver²² wrote: "Perhaps as many of these (studies) have directly or indirectly cast doubt on the existence of true reefs of Silurian age in the Midwest as have supported the idea . . . Indeed, the graduate students at Indiana University who have joined with me to present the information for . . . (this guidebook) do not all agree that 'reef' is wisely applied to the Silurian structures so often called 'reefs.'"

Comment: Even within uniformitarianism there is controversy as to whether or not certain carbonate lithologies are "ancient reefs." This entire section is a sequel to a similar section in the author's first Anthology,²³ where evidence was presented that "ancient reefs" were not reefs and could be understood in terms of the Creationist-Diluvialist paradigm.

2. Conjectural and Imaginative Character of Uniformitarian Reef Models Ascribed to Ancient Rock

Mountjoy⁴³ wrote: "The Alberta Basin is one of the best known Paleozoic reef provinces in the world, especially in terms of the amount of geological data available particularly in the subsurface. It has been extensively studied and various depositional and diagenetic models have been published . . . The models are based on conjecture, unproven ideas, and the interpretations of limited factual observations germinated and enhanced by imagination."

Comment: Mountjoy recommends that further studies be done to strengthen reef interpretations, but, in view of the fact that these lithologies have already been extensively studied, one might realize that the conjecture actually reflects the fallacious uniformitarian ancient-reef premises.

3. Some "Ancient Reefs" Merely Artifacts of Erosion

After describing effects of subaerial erosion in modern carbonates of the Persian Gulf, Shinn²⁴ wrote: "Subaerial sculpturing might explain the steep-sided 'cores' and flank beds seen in some ancient 'reefs' and 'bioherms'."

In an ancient example, Squires²⁵ wrote: "The pseudo-reefs do resemble true reefs in that they seem to lack clearly defined bedding in certain cliff-face exposures."

In another ancient example (this one from a classic locality) Twenhofel³⁰ wrote: "The Schlern dolomitic limestones of South Tyrol were originally interpreted as a great barrier reef system . . . with bordering strata dipping steeply from the margins. Ogilvie-Gordon questioned this origin of the steep dips and considered these features as due to faulting and erosion."

Comment: Much "reef geometry" may be apparent rather than real. That which is real is not proof of reef (see No. 12 below)

4. Capriciously-Dipping "Reef Flank" Strata

Carozzi and Hunt²⁶ wrote: "This reversal of dip is not an uncommon phenomenon for Niagaran reefs and is

believed by Cummings and Shrock (1926, 1928) to result from the settling of the heavy reef masses into the underlying sediments."

Comment: Frequently, the "reef flank" strata fail to dip away from the "reef core." The real reason is that these are not ancient reefs but Flood deposits, and the capricious dip reflects variability in Flood currents. This is especially realized because of the fact that ascriptions of "reef core" and "reef flank" are themselves quite arbitrary (see below).

5. Vague Facies Distinction Between "Reef Core" and "Reef Flank"

In describing the Silurian Thornton Reef of Chicago, McGovney²⁷ reinterpreted much "reef core" as being truly "reef flank" when bedding was discovered in it. He concluded: "The reef flank facies is about 95% of the preserved reef." Even this he considered an arbitrary distinction, contended that there is really no "reef core" as such, and suggested that the deposit was not a shoal-water wave-battered reef but a carbonate mound.

In speaking of the Silurian "reefs" of Iowa, Hinman²⁸ wrote: "The core and flanks are petrographically nearly identical, but structurally and paleontologically dissimilar . . . The material of the flank beds is lithologically quite similar to that of the core and can be distinguished from it solely on the basis of the stratification of the flank material. The flank beds are also fossiliferous . . ."

In reporting on the Silurian "reefs" of Ohio, Kahle²⁹ wrote: "Although fossils tend to be concentrated within bioherms, they are locally equally abundant in rocks between bioherms."

Comment: It is clear that there is, at best, tenuous justification for attributing rock to the "reef core" and "reef flank" facies. Once again, reefs have been read into the rock record instead of out of it.

6. Conspicuous Absence of Framework in "Ancient Reefs"

Twenhofel³¹ wrote: "Walther's definition may hold for some reefs, but few reefs known in the geologic column known to the writer contain many branching corals."

Kahle²⁹ wrote: "Except for bryozoa, fossils within bioherms typically *do not touch one another* and do not appear to have formed a rigid framework." (italics added)

Lane³² wrote: "A variety of sedimentary deposits that contain abundant crinoid ossicles, at places completely disarticulated or coherent in the form of calyces and crowns, are widespread in Paleozoic rocks. A number of such deposits have been called reefs or bioherms even though commonly there is little evidence that they were raised above the surrounding sea floor at the time they were being formed, that they had rigid organic framework, or that they were wave-resistant."

Concerning the Carboniferous "reefs" of England, Anderton *et al.*⁴⁴ wrote: "Problems still remain concerning the origin of the mudbanks, due to the rarity of framebuilders."

Stanley⁴⁵ said: "Unlike modern reefs, the North American examples were all small biostromal buildups that never developed in the high-energy surf zones . . . These findings acquire special significance when compared with thick Triassic sequences in Germany, Austria, and Italy which have long been regarded as classic reefs. Studies in the Northern and Southern Alps have shown that extensive coral framework is absent." "Although Middle Triassic sequences in the Dolomites have been referred to as reefs, they have little reef framework and corals are minor constituents."⁴⁶

Klovan³³ wrote: "The dearth of three-dimensional framework in many ancient reefs has led to a gradual change in the conceptual model of the organic reef from that of a 'reef wall' to that of a thin, discontinuous rim."

Comment: These statements provide further confirmation of the lack of framework in "ancient reefs." This lack is precisely because these were not reefs and consequently organisms did not intergrow and bind lime muds accumulating over immense periods of time. These are Flood deposits, with material and organisms washed in. Even fossils appearing in growth position are not proof of *in situ* reef development (see Nos. 9 and 10 below). Furthermore, the lime muds could have been cemented inorganically and not by organisms over immense periods of time (see No. 11 below).

The Triassic deposits discussed by Stanley provide an interesting sidelight. They are probably the deposits cited by Giordano Bruno (1548?-1600) who insisted that there could have been no Flood. Instead of reacting with dogmatic appeals and with censure, churchmen should have examined these rocks and thereby refuted Bruno's claims of reef origin for these deposits.

7. Evidence Against Reef Origins from Dearth of Predation

Twenhofel³⁴ pointed out that ancient reefs are well preserved in contrast of modern reefs.

Comment: This lack of predation in "ancient reefs" is because there are Flood deposits and not reefs. Consequently, there was insufficient time for appreciable predation to occur on these deposits.

8. Major differences in Scale between Modern and Ancient "Reefs"

Twenhofel³⁴ pointed out that the Great Barrier Reef is 1000 miles long and (with the exception of the Silurian reefs of the Michigan Basin): "Few ancient reefs approach this dimension . . ." He noted that the modern reef in Marathea is 1400 ft. thick and (except for some Permian algal reefs): "No ancient reef made by coral as an important contributor is known to have anything like a comparable thickness."

By contrast, in speaking of relatively minor differences between modern and ancient "reefs", Klovan³⁵ wrote: "Therefore, although similar controls are likely to affect recent and ancient reefs, precise analogues between the two can seldom be drawn."

Comment: This major scale difference between modern and ancient "reefs" can be understood in terms of the ancient deposits not being reefs but (much thinner)

Flood deposits. Lack of precise analogies is another consequence.

9. Many claims of In-Situ Reef Organisms based upon Conjecture

Philcox³⁶ wrote: "The corals in the thickets *appear* to be *more or less* in their position of growth, as they are self-supporting." (italics added)

Ager³⁷ claimed that 87.5%-97.5% of corals and stromatoporoids in the Chicago-area Silurian reefs are in growth position. In a review of Ager's book, Manten³⁸ disagreed, writing: "In reefs, comparable to those in the English Wenlock, around 81% of the coral colonies are found in position of growth, this percentage decreasing to only 46-58 for reefs formed in relatively shallow water."

Comment: The statement of Philcox has an air of vagueness about it. Indeed, many claims in the literature about reef organisms occurring in growth position are based on conjecture rather than careful investigation. Furthermore, the contradictory opinions of Ager and Manten reveal a subjectivity in judging what is and what isn't in growth position. Even those reef organisms found definitely in growth position do not prove *in situ* reef growth over immense periods of time (see below).

10. Reef Organisms in Growth Position No Proof for Reef Growth

Ager³⁷ wrote: "A more serious objection, even when the subjectivity of such observations has been reduced by counting, is that the same effect could be brought about by mechanical means. It may be argued that a hemispherical body such as shown in Figure 5.5. would tend to come to rest in this position of greatest stability. Clearly, we need to consider other evidence as well, such as the nature of enclosing sediments."

Concerning the Silurian "reefs" of Iowa, USA, Philcox⁴⁷ wrote: The majority of flat-based favositid colonies lie upright, but since this is their most stable orientation, they may have rolled into this position. In the absence of other evidence they should be regarded as ambiguously situated. It is frequently claimed in the literature that a given upright colony is in its growth position, implying *location*, when the evidence really only shows the colony to be in its growth *orientation*." Furthermore: "... rolled conical or cylindrical colonies could come to rest in an upright position if supported by projections in the substrate or by other colonies." Philcox then suggested that *in situ* growth could be substantiated if the contact of the colony with the substrate could be seen, but then acknowledged that a transported colony could bring the contact along with it (as an uprooted tree can bring undisturbed soil layers among its roots). Even after suggesting that relatively rare instances of intergrown, branched colonies crossing different horizons demonstrate *in situ* growth, he would only say the the situation offers: "... a greater chance that they have been buried where they grew."⁴⁷

In speaking of how to recognize *in situ* fossil forms as a whole, Fursich⁴⁸ recently wrote: "Recognition of epifaunal species preserved in life position is difficult

where the life position is a hydrodynamically stable position and thus could also have resulted from transport."

The Soviet paleoecologist Hekker³⁹ cited: "... the occasionally preserved life groups."

Comment: Clearly *in situ* ancient reefs are not proven by the existence of reef organisms in growth position. Since organisms occurring in growth position are very rare overall (statement of Hekker) it may be a matter of chance that the Flood currents sometimes deposited a large percentage of fossils in growth position locally. Such occurrences were facilitated by the stability tendencies pointed out. Usually, the Flood would deposit organisms and lime mud with low concentration of fossils and very few of them in growth position, and this would be attributed to a non-reef carbonate shelf environment. Occasionally, however, the Flood deposited a high concentration of fossils and these turned out in growth position; such deposits being attributed to ancient reefs by uniformitarians.

11. Inorganic Cementation of "Ancient Reef" Deposits

In speaking of the Chicago-area Silurian "reefs", Pray⁴⁰ wrote: "I believe that submarine cementation played a role of equal or greater importance than organic binding in the construction of the Thornton Reef Complex."

Neumann⁴⁹ said: "Ancient mounds, in contrast to the modern lithoherms, appear to have accumulated largely from submarine cementation of products of *in situ* origin."

Comment: Lime muds need not have been bound by reef organisms over immense periods of time. Just as in clastic sedimentary rocks, inorganic cementation can account for the cementation of these deposits. Even a mound-shaped geometry of the "reef" deposit is not proof that it was a reef and consequently the organisms in it had bound it. (see below)

12. "Reef" Geometry No Proof for a Deposit Being a Reef

Keith⁴¹ wrote: "This reef and others in the region, together with their associated carbonate-shelf deposits, fit into a well-expressed orthogonal tectonic pattern controlled by larger-scale basement features."

Lane³² wrote: "The specific geometry developed in a deposit that contains abundant crinoid debris is thought to be most importantly controlled by two factors—the rate of sedimentation and the strength of bottom currents."

Comment: Many forms of geometry of "reef" deposits can be explained by tectonics during sedimentation. The statement of Lane indicates that geometry may be purely the result of sedimentological factors. "Ancient reefs" may be dune-type Flood deposits. (see below)

13. "Ancient Reefs" Actually Dune Deposits

Anstey and Pachut⁴² wrote: "Longitudinal Ophiurids (star dunes) result from radially converging longitudinal vortices forming a collective updraft on the dune apex."

Many "ancient reefs" (especially of the Lower

Paleozoic) are composed mainly of crinoids and crinoidal debris. Jenkyns⁵⁰ proposed that crinoidal lenses are a type of sand wave deposited in a pelagic sea-mount: a giant ripple mark of tidal origin oriented perpendicular to current direction.

Comment: During the Flood, the waters deposited organisms and sediment into variously-shaped dunes, accounting for the "mound"-shaped "reef" geometry of these deposits.

III. UNIFORMITARIAN CONFIRMATIONS OF CREATIONISTS' OBSERVATIONS CONCERNING (ALLEGED) OVERTHRUSTS

1. Introduction to "Overthrusts"

Gretener⁶⁰ wrote: "The following observations seem to have universal validity: 1. The contact is usually sharp and unimpressive in view of the great amount of displacement. 2. Structures which have been named 'tongues' appear to be common. They are features where material from the overridden sequence is seemingly injected as a tongue into the base of the overthrust plate. 3. Secondary (splay) thrusts are common. 4. Coalescence of tongues may produce pseudo-boudins. 5. Minor folding and faulting can usually be observed in both the thrust plate and the underlying rocks. The intensity of such deformations is normally comparatively weak, at least in view of the large displacements these thrust plates have undergone . . .⁶ Late deformations, particularly by normal faulting, are present in many thrust plates. They should be recognized for what they are: post-thrusting features completely unrelated to the emplacement of the thrust plates."

Comment: Creationists and Diluvialists have long noted instances of strata resting in "wrong" order, and how overthrusts have been claimed because of this inverse order. The works of Burdick,⁶¹ Burdick and Slusher,⁶² and many others have all pointed out that: 1) the contact between "overriding" and "overridden" plate is faint and lacks slickensides, gouge material, etc., 2) the "overriding" plate shows little deformation, and 3) there is an overall paucity of evidences pointing to extensive tectonic motion supportive of such alleged thrusting.

The statements of the uniformitarian Gretener confirm these points. Such confirmation is especially useful because a uniformitarian could not be accused of making observations partial to Creationism. The following entries elaborate upon the major points and provide an example from the Soviet Union.

2. Lack of Evidences of Motion Along "Thrust" Contacts

Gretener⁶³ wrote: "However, modern mapping has led to many places where the thrusts themselves can be observed. Invariably the descriptions use such words as: 'knife sharp', 'drawn with a knife edge', etc. Figure 6 shows the McConnell thrust as exposed in Mount Yamnuská (detail, middle of Figure 1). It is indeed possible to place one's hand on the surface separating the Middle Cambrian Eldon Formation from the Upper Cretaceous Belly River Formation . . . The fact that this boundary is so sharp becomes more impressive when one considers that each point above the fault surface in Figure

6 has moved a minimum distance of 15 km. (10 mi)."

In generalizing on all "overthrusts", Gretener⁶⁰ added: "gouge material is essentially absent or, if present, is very thin (Brock, 1973; Engelder, 1974). Be it as it may, the idea of easy gliding, so persistent in the geological literature, is certainly supported by even a cursory examination of any thrust belt."

Gretener⁶⁴ said: "Different lithological units, usually with stratigraphic separation measured in kilometers, are in juxtaposition along a sharp contact, *often no more impressive than a mere bedding plane.*" (italics added)

Rezvoy⁶⁵ said: "*Fully conformable* with the general structure of the Silurian deposits is the underlying complete section of Devonian or Carboniferous terrigenous Totubay suite." "... the thrust plates, where they can actually be observed, show no traces of large displacements along them."⁶⁶ (italics added)

Comment: The descriptions of Rezvoy (refs 65, 66) concern a situation in the Tien Shan Mountains (located near the USSR/northwest-China border) where Silurian rests upon Devonian and Carboniferous. He claims that the inversion is not from a true overthrust but from the Silurian strata having been tectonically squeezed out of position and re-implaced upon the presumably younger strata. The example of Gretener (ref. 63) refers to Mount Yamnuska (located near Calgary, Alberta, Canada) where Cambrian rests on top of Cretaceous.

It is credulous to believe that thrust contacts involving miles of rock layers would result in a contact lacking gouge and capable of being straddled with one's hand. The real reason why these "thrust" contacts are "knifesharp", "conformable," and "no more impressive than a mere bedding plane" is precisely because they *are* bedding planes. The contacts are thus sedimentary and not tectonic; strata have been deposited in "wrong" order and the entire evolutionary-uniformitarian geologic column is shown to be false.

Incidentally, the situation described by Rezvoy illustrates once again the circular reasoning of using index fossils. The age of Silurian was attributed to the lithology on top of Devonian and Carboniferous as a result of a single graptolite occurrence. Certain such graptolites are known to be Silurian because they only occur in Silurian rock, and rocks are dated as Silurian solely because they contain such graptolites.

3. Paucity of Overall Deformation in Strata Involved in "Thrusting"

Gretener⁶³ wrote: "While the sharp nature of the faults has been emphasized by many authors . . . , one should not forget that the rocks above and below a thrust may show considerable deformation for distances of some hundreds of feet. *Still the thrust plates as a whole have remained intact and are in no way comparable to the jumbled masses of landslides.* Thus, the presumption underlying this paper—that we are dealing with *virtually undistorted plates* moving over the undisturbed sequence along sharp planes—is basically correct." (italics added)

Comment: It is credulous to believe that lithologies involved in thrusting would not at least show massive

disruption and deformation. The fact that there is so little evidence of that is another evidence that these are not overthrusts but sedimentary contacts.

Even features such as "tongues," "false boudins", etc., (see item 1, Gretener⁶⁰) can be explained by sedimentary instead of tectonic processes. It is common for submarine erosion to result in tongues of material from underlying beds being dragged into the overlying beds, according to Ager.⁶⁷

4. Associated Tectonism No Proof for Overthrust

Gretener⁶⁸ wrote: "Most thrust plates have been subjected to post-thrusting deformation of one kind or another. One must beware of and separate such observations and not falsely ascribe them to the thrusting movement."

Comment: Evidences of tectonism are to be expected in tectonically complex regions. One wonders if the tectonic evidences associated with the alleged overthrusts are not also prevalent in regions where no overthrusts are claimed. Presumed evidences for overthrust can easily be claimed because of the uniformitarian preconception of a thrust being present where strata occurs in "wrong" order.

IV. SOME EXAMPLES OF "REWORKING" RATIONALIZATIONS FOR ANOMALOUS FOSSILS

1. Introduction to "Reworking"

Fossils frequently occur where they are not "supposed" to. It is then claimed that either the fauna or flora have lived longer than previously known (simple extension of stratigraphic range) or that the fossil has been reworked. In "reworking," it is claimed that the fossil has been eroded away from a much older host rock and has thus been incorporated into a rock of more recent age. The reciprocal situation is "downwash," where it is claimed that an organism has been washed down into rock much older than the time it lived and has become fossilized there.

Table 1 is a compilation of both situations. The entries are examples only and do not represent a comprehensive literature search. Nor does the table include examples previously discussed by the author in his first anthology⁶⁹ or the Creationist-Diluvialist and evolutionary-uniformitarian references cited therein.

As later items of this section will demonstrate, "reworking" is very often (if not usually) not justified by any independent lines of evidence such as state of preservation of the fossil. Claims of "reworking" are thus invoked solely because of the "improper" stratigraphic occurrence of the fossil. The numerous instances of fossils occurring in "wrong" strata is thus yet another line of evidence against the validity of the evolutionary-uniformitarian geologic age system.

Comment: Some of the entries in Table 1 have special significance.

The entries under references 84 and 96 involve the presence of Phanerozoic pollen in the Precambrian. The occurrence of Jurassic pollen in the Precambrian Ukrainian Shield was explained away by Krassilov⁸⁴ through claiming that a Jurassic weathering episode in the Shield caused a contamination with the pollen of that

Table 1. This table is a compilation of over 200 published instances of anomalously-occurring fossils. At left is the kind of fossil(s) involved followed by the accepted age of occurrence, the instance of anomalous occurrence, its locality, and the reference.

Instances were tabulated as separate entries when they involved: 1) different fossils (usually), 2) different "proper" ages, 3) different anomalous ages, or 4) different geographical locations (different nations, provinces, sedimentary basins, etc.)

The instances entered under references 70, 73, 77, 78, 88, 100, and 150 are subaqueous occurrences (deep marine) offshore marine, or lacustrine); most others involve sedimentary lithologies on land. References 70, 17, 72, 82, 84, 89, 96, 147, 148, 153, and 160 are "downwash," "infiltration," or supposed "contamination." Most other entries are "reworking" of fossils into younger-age beds.

A few of the entries in this table are claimed by the cited authors to be possible stratigraphic-range extensions rather than necessarily "reworking". This table does not include fossils of clearly secondary position (such as fossils within constituents of conglomerates and the very many instances of Phanerozoic fossils in Pleistocene glacial till).

For further discussion of the entries in Table 1, see section VI, No. 1.

Type of Fossil:	"Proper" Age:	Found In:	Location	Reference
Foraminifers	Pleistocene	Tertiary	Atlantic Ocean	70
Pollen	Tertiary	Quaternary	Bolkow, Poland	146
Pollen	Tertiary	Cretaceous	East Netherlands	147
Mammal bones	Tertiary (late)	Tertiary (early)	Kazakhstan, USSR	148
Algae (?)	Tertiary	Cretaceous	France	71
Foraminifers	Tertiary	Cretaceous	Nigeria	72
Nannoplankton	Tertiary (lower)	Tertiary (higher)	Tabqa, Syria	164
Spores	Tertiary (recent)	Permian	Southland, New Zealand	165
Spores	Tertiary	Pleistocene	North Caspia, USSR	166
Foraminifers	Tertiary	Cretaceous	North Italy	167
Pollen	Tertiary	Pleistocene	Yenisei, USSR	168
Palm wood	Tertiary	Jurassic	Utah, USA	169
Foraminifers	Tertiary (early)	Tertiary (medial)	Trinidad, West Indies	206
Foraminifers	Tertiary (early)	Tertiary (medial)	Victoria, Australia	207
Foraminifers	Tertiary (early)	Tertiary (medial)	Hungary	208
Nannoplankton	Tertiary (early)	Tertiary (medial)	Romania	209
Spores	Tertiary (recent)	Jurassic	Louisiana-Texas, USA	210
Mammal bones	Tertiary (early)	Tertiary (medial)	Northeast Siberia, USSR	211
Foraminifers	Cretaceous	Tertiary	Ionian Sea	212
Foraminifers	Cretaceous	Tertiary	West Israel	213
Coccoliths	Cretaceous	Tertiary	Crimea, USSR	214
Spores	Cretaceous	Tertiary	Kazan, USSR	215
Pollen	Cretaceous	Tertiary	British Columbia, Canada	216
Pollen	Cretaceous	Tertiary	Arctic Canada	216
Pollen	Cretaceous	Tertiary	Fushun, China	216
Pollen	Cretaceous	Tertiary	Shandong, China	216
Pollen	Cretaceous	Tertiary	South Coastal China	216
Pollen	Cretaceous	Tertiary	Spitzbergen, Norway	217
Pollen	Cretaceous	Tertiary	Ural Mts., USSR	217
Pollen	Cretaceous	Tertiary	West Siberia, USSR	217
Dinoflagellate	Cretaceous	Tertiary	Australia	170
Nannoplankton	Cretaceous	Tertiary	Glogow, Poland	171
Foraminifers	Cretaceous	Tertiary	Alabama, USA	172
Nannoflora	Cretaceous	Tertiary	Zinda Pir, W. Pakistan	173
Pollen	Cretaceous	Pleistocene	Yenisei, USSR	168
Nannoflora	Cretaceous	Tertiary	Tang-E-Bijar, Iran	174

Type of Fossil:	"Proper" Age:	Found In:	Location	Reference
Foraminifers	Cretaceous	Jurassic	Scania, Sweden	175
Pollen	Cretaceous	Cambrian	Holy Cross Mts., Poland	176
Nannoplankton	Cretaceous	Tertiary	Ukraine, USSR	177
Pollen	Cretaceous	Tertiary	Utah, USA	149
Spores	Cretaceous	Pleistocene	Newfoundland, Canada	150
Spores	Cretaceous	Tertiary	Newfoundland, Canada	150
Pollen	Cretaceous	Tertiary	West Germany (?)	151
Spores	Cretaceous	Tertiary	Czechoslovakia	152
Foraminifers	cretaceous	Quaternary	Adelie Coast, Antarctica	73
Foraminifers	Cretaceous	Tertiary	Austria	74
Foraminifers	Cretaceous	Tertiary	Sweden	75
Nannoplankton	Cretaceous	Tertiary	Alps. Carpathians, Europe	76
Nannofossils	Cretaceous	Tertiary	west, southwest Pacific	77
Foraminifers	Cretaceous	Pleistocene	Louisiana, USA	78
Pollen	Cretaceous	Tertiary	Venezuela	79
Pollen	Cretaceous	Tertiary	Wyoming, USA	79
Foraminifers	Cretaceous	Tertiary	California, USA	80
Foraminifers	Cretaceous	Pleistocene	Netherlands	81
Foraminifers	Cretaceous	Pleistocene	Utah, USA	81
Foraminifers	Cretaceous	Tertiary	England	75
Pollen	Jurassic	Permian	Sariz, Antalya, Turkey	82
Spores	Jurassic	Tertiary	Isle of Mull, Scotland	83
Spores	Jurassic	Precambrian	Ukraine, USSR	84
Coccoliths	Jurassic	Silurian	North Africa	153
Pollen	Jurassic	Tertiary	Utah, USA	149
Spores	Jurassic	Cretaceous	Newfoundland, Canada	150
Pollen	Jurassic	Tertiary	Newfoundland, Canada	150
Dinoflagellate	Jurassic	Cretaceous	California, USA	154
Dinoflagellate	Jurassic	Tertiary	California, USA	154
Spores	Jurassic	Cretaceous	Perth Basin, Australia	89
Spores	Jurassic	Triassic	Northeast Siberia, USSR	218
Pollen	Jurassic	Pleistocene	Yenisei, USSR	168
Spores	"Mesozoic"	Pleistocene	North Caspia, USSR	166
Spores	Jurassic	Permian	Northeast Siberia, USSR	218
Spores	Jurassic	Cambrian	Northeast Siberia, USSR	218
Spores	Triassic	Cretaceous	British Columbia, Canada	238
Spores	Triassic (and/or older)	Jurassic	Yukon, Canada	178
Spores	Triassic Cretaceous	Alberta, Canada	219	
Ostracodes	Triassic	Tertiary	Hungary	85
Spores	Triassic	Jurassic	Andoya, Norway	86
Conodonts	Triassic	Cretaceous	Cameroons	87
Conodonts	Triassic	Jurassic	Japan	87
Spores	Triassic	Tertiary	Kutch, India	155
Pollen	Triassic	Tertiary	Newfoundland, Canada	150
Pollen	Triassic	Tertiary	Utah, USA	149
Spores	Triassic	Cretaceous	Perth Basin, Australia	89
Pollen	"Mesozoic"	Tertiary	Atlantic Ocean	88
Spores	"Mesozoic"	Tertiary	Hungary	83
Brachiopods	Permian	Triassic	Salt Range, Pakistan	142
Conodonts	Permian	Triassic	Salt Range, Pakistan	142
Pollen	Permian	Triassic	Utah, USA	149
Spores	Permian	Cretaceous	Kutch, India	156
Conodonts	Permian	Triassic	Akasaka, Japan	157
Spores	Permian	Tertiary	Kerala, India	155
Spores	Permian	Tertiary	Kutch, India	155
Spores	Permian	Cretaceous	Madhya Pradesh, India	155
Pollen	Permian	Tertiary	Nagaland, India	158
Spores	Permian	Cretaceous	Alberta, Canada	219

Type of Fossil:	"Proper" Age:	Found In:	Location	Reference
Spores	Permian	Cretaceous	British Columbia, Canada	238
Fusulinids	Permian	Triassic	Mine, Japan	180
Pollen	Permian	Triassic	Southeast Siberia, USSR	220
Pollen	Permian	Tertiary	Assam, India	158
Pollen	Permian	Tertiary	Maghalaya, India	159
Spores	Permian	Triassic	Somerset, England	90
Pollen	Permian	Jurassic	Kutch, India	91
Pollen	Permian	Tertiary	South Australia	91
Pollen	Permian	Cretaceous	Victoria, Australia	91
Ammonoids	Permian	Triassic	KapStosch, Greenland	92
Spores	Permian	Tertiary	Hungary	83
Spores	Permian	Cretaceous	Perth Basin, Australia	89
Spores	Permian	Devonian	Canning Basin, Australia	89
Spores	Carboniferous	Jurassic	Poland	93
Spores	Carboniferous	Jurassic	Sweden	93
Spores	Carboniferous	Jurassic	England	93
Spores	Carboniferous	Jurassic	Scotland	93
Spores	Carboniferous	Jurassic	Latvia, USSR	93
Spores	Carboniferous	Jurassic	Denmark	93
Spores	Carboniferous	Jurassic	Baltic Russia	93
Spores	Carboniferous	Tertiary	Arkansas, USA	94
Spores	Carboniferous	Cretaceous	Perth Basin, Australia	89
Fusulinids	Carboniferous	Pleistocene	Utah, USA	81
Pollen	Carboniferous	Triassic	Devon, England	95
Spores	Carboniferous	Precambrian	Onega, USSR	96
Spores	Carboniferous	Cretaceous	Limburg, Netherlands	91
Spores	Carboniferous	Cretaceous	Krakow, Poland	97
Pollen	Carboniferous	Tertiary	Hungary	84
Pollen	Carboniferous	Tertiary	Alabama, USA	84
Pollen	Carboniferous	Triassic	Donets Basin, USSR	84
Pollen	Carboniferous	Jurassic	Donets Basin, USSR	84
Spores	Carboniferous	Jurassic	Germany	93
Spores	Carboniferous	Permian	Pakistan	93
Acrutarchs	Carboniferous	Tertiary	Newfoundland, Canada	150
Pollen	Carboniferous	Devonian	Missouri-Iowa, USA	160
Pollen	Carboniferous	Cretaceous	Montana, USA	221
Pollen	Carboniferous	Tertiary	Montana, USA	221
Conodonts	Carboniferous	Devonian	Graz/Styria, Austria	222
Pollen	Carboniferous	Triassic	Southeast Siberia, USSR	220
Spores	Carboniferous	Cretaceous	Alberta, Canada	219
Conodonts	Carboniferous (lower)	Carboniferous (medial)	New Mexico, USA	223
Spores	Carboniferous	Cretaceous	British Columbia, Canada	238
Spores	Carboniferous	Permian	Devonshire, England	179
Spores	Carboniferous	Triassic	Devonshire, England	179
Fusulinids	Carboniferous	Triassic	Mine, Japan	180
Spores	Carboniferous	Pleistocene	Ohio, USA	181
Spores	Carboniferous	Permian	Yukon, Canada	182
Brachiopod	Carboniferous	Permian	Yukon, Canada	182
Pollen	Carboniferous	Permian	Caucasia, USSR	183
Trilobite	"Late Paleozoic"	Tertiary	Utah, USA	184
Spores	Carboniferous	Jurassic	West Arctic Islands, Canada	185
Conodonts	Devonian	Carboniferous	Missouri, USA	186
Spores	Devonian	Carboniferous	Canning Basin, Australia	179
Spores	Devonian	Permian	East West Australia	179
Crinoids	Devonian	Carboniferous	Pamir Mts., USSR	187
Conodonts	Devonian	Silurian	Texas, USA	188
Algal Cysts	Devonian	Cretaceous	Northeastern Brazil	189
Pollen	Devonian	Permian	Caucasia, USSR	183

Type of Fossil:	"Proper" Age:	Found In:	Location	Reference
Spores	Devonian	Carboniferous	Yukon, Canada	182
Spores	Devonian	Permian	Yukon, Canada	182
Spores	Devonian	Pleistocene	Ohio, USA	181
Spores	Devonian	Jurassic	West Arctic Islands, Canada	185
Spores	Devonian	Cretaceous	British Columbia, Canada	238
Spores	Devonian (medial)	Devonian (upper)	Belorussia, USSR	224
Conodonts	Devonian	Carboniferous	Kansas, USA	225
Conodonts	Devonian	Carboniferous	New Mexico, USA	223
Conodonts	Devonian	Carboniferous	Graz/Styria, Austria	222
Conodonts	Devonian	Tertiary	Graz/Styria, Austria	222
Conodonts	Devonian	Pleistocene	Graz/Styria, Austria	222
Brachiopods	Devonian (lower)	Devonian (medial)	California, USA	226
Conodonts	Devonian	Carboniferous	Kazakhstan, USSR	227
Conodonts	Devonian	Silurian	Arkansas, USA	228
Chitinozoans	Devonian	Jurassic	East Bhutan	229
Conodonts	Devonian	Carboniferous	Nevada, USA	161
Foraminifers	Devonian	Carboniferous	Nevada, USA	161
Spores	Devonian	Carboniferous	Bolivia	143
Conodonts	Devonian	Carboniferous	Devonshire, England	162
Acritarchs	Devonian (and/or older)	Carboniferous	Newfoundland, Canada	150
Spores	Devonian	Triassic	Devon, England	95
Conodonts	Devonian	Triassic	Kockatea, Australia	89
Spores	Devonian	Cretaceous	Otorowiri, Australia	89
Thelodont, Acanthodian Fish Scales	Devonian	Permian	Canning Basin, Australia	89
Spores	Devonian	Cretaceous	Perth Basin, Australia	89
Pollen	Devonian	Carboniferous	Oklahoma, USA	145
Spores	Devonian	Carboniferous	Belgium	98
Conodonts	Devonian	Permian	Texas, USA	99
Algal Cysts	Devonian	Quaternary	Lake Michigan, USA	100
Conodonts	Devonian	Carboniferous	Texas, USA	101
Conodonts	Devonian	Carboniferous	Oklahoma, USA	102
Acritarchs	Silurian (and/or older)	Devonian	Witney, England	163
Acritarchs	Silurian	Devonian	Belgium	98
Conodonts	Silurian	Carboniferous	Oklahoma, USA	102
Pollen	"Paleozoic"	Precambrian	Krivyi Rog, USSR	84
Pollen	"Paleozoic"	Tertiary	Atlantic Ocean	88
Spores	"Paleozoic"	Tertiary	Bolivia	143
Spores	"Paleozoic"	Pleistocene	North Caspia, USSR	166
Spores	Silurian	Ordovician	Ohio, USA	230
Chitinozoans	Silurian	Jurassic	East Bhutan	229
Plant tissue	Silurian (and/or younger)	Ordovician	Oklahoma, USA	190
Acritarchs	Silurian	Carboniferous	Ballyvergin, Ireland	191
Crinoids	Silurian	Carboniferous	Pamir Mts., USSR	187
Algal Cysts	Silurian	Cretaceous	Northeast Brazil	189
Conodonts	Silurian	Devonian	Texas, USA	188
Spores	Silurian(?)	Devonian	Belorussia, USSR	224
Chitinozoans	Silurian	Cretaceous	Alaska, USA	231
Conodonts	Ordovician	Silurian	Ontario, Canada	192
Conodonts	Ordovician	Devonian	Minnesota, USA	193
Acritarchs	Ordovician	Tertiary	Lough Neagh, Ireland	194
Conodonts	Ordovician	Silurian	Missouri, USA	195
Conodonts	Ordovician	Silurian	Carnic Alps, Italy	196
Conodonts	Ordovician	Silurian	Quibec, Canada	196

Type of Fossil:	"Proper" Age:	Found In:	Location	Reference
Conodonts	Ordovician	Silurian	Central Texas, USA	188
Diacrodians	Ordovician	Precambrian	Saxony, East Germany	197
Conodonts	Ordovician	Silurian	Illinois, USA	198
Conodonts	Ordovician	Silurian	Illinois, Indiana, USA	199
Acritarchs	Ordovician	Carboniferous	Ballyvergin, Ireland	191
Acritarchs	Ordovician	Silurian	Ohio, USA	200
Acritarchs	Ordovician	Silurian	New York, USA	200
Conodonts	Ordovician	Silurian	Central Siberia, USSR	232
Conodonts	Ordovician	Silurian	Southeast Indiana, USA	233
Conodonts	Ordovician (lower)	Ordovician (medial)	West Texas, USA	234
Graptolites	Ordovician	Devonian	Missouri, USA	103
Conodonts, Ostracodes				
Acritarchs	Ordovician	Silurian	Belgium	98
Acritarchs	Ordovician	Devonian	Netherlands-Belgium	98
Conodonts	Ordovician	Carboniferous	Oklahoma, USA	102
Spores	Ordovician	Carboniferous	Oklahoma, USA	94
Conodonts	Ordovician	Cretaceous	Colorado, USA	104
Acritarchs	"Lower Paleozoic"	Triassic	Devonshire, England	95
Archeocyathids	Cambrian	Permian	Dwyka, South Africa	105
Trilobites	Cambrian (lower)	Cambrian (medial)	Bornholm, Denmark	202
Acritarchs	Cambrian	Silurian	Comeragh, Ireland	191
Acritarchs	Cambrian	Carboniferous	Ballyvergin, Ireland	191
Trilobites	Cambrian	Devonian	Bielsko-Mogilany, Poland	203
Acritarchs	Cambrian	Ordovician	Shropshire, England	204
Algae	Precambrian	Cambrian or Ordovician	Verkhoyansk, USSR	205
Spores	Precambrian	Devonian	Saratov, USSR	235

time. The finding of Paleozoic spores in the Precambrian of Kirvyi Rog, USSR, was rationalized away by Krassilov⁸⁴ in a similar way. In another situation, strata was thought to be Precambrian because of its incredible lithologic similarity to proven Precambrian rock until Carboniferous spores were found in the strata (ref. 96). An alternate view proposed was that Carboniferous spores were downwashed into Precambrian and that the stratum was not a solitary Carboniferous outlier. These examples are further support for the controversial work of Burdick¹⁰⁰, who reported gynosperm and angiosperm pollen from the Precambrian formations of the Grand Canyon.

"Reworked" and "downwashed" forms are microfossils, it is claimed, because such small forms are resistant to erosion, transport, etc. However, many entries in Table 1 (92, 89, 103, 142, 148 and 105) involve macrofossils. The fact that most anomalously-occurring fossils are microfossils may be because anomalously-occurring macrofossils are more likely to be considered legitimate stratigraphic extensions rather than "reworking". Another explanation is provided by the Creationist-Diluvialist paradigm. Microfossils, being minute, would be less capable of differential escape and be less subject to Flood-water sorting than macrofossils. The common situation of anomalously-occurring pollen and spores may be evidence that *all* fossil plants were mutually contemporaneous (as indeed demanded by the Creationist-Diluvialist paradigm) but that pollen and

spores, being mobile, were transported by wind and water far beyond the restricted ecological zones of these antediluvian plants.

2. Ubiquity and Significance of Anomalously-Occurring Fossils

Bramlotte and Sullivan¹⁰⁷ wrote; "To recognize such redistribution where it has occurred and yet not to invoke this explanation to account for unexpected extensions of the life range of a species presents a serious problem requiring much critical attention."

In a coexistence of Devonian with Permian fossils (ref. 89), Veevers⁸⁹ asked: "Are the Permian spores due to infiltration or are the Devonian fossils reworked in Permian deposits?"

Venkatachala⁹¹ wrote: "Palynological fossils of older ages are *commonly* encountered amidst younger assemblages." (*italics added*).

Muir¹⁰⁸ remarked: "In any kind of ecologic study, false conclusions could be drawn, while *the havoc reworking could play with stratigraphy is immense*," (*italics added*).

The occurrence of Carboniferous spores in Jurassic (ref. 93) is so common all over Europe that the author Windle⁹³ proposed that it must have a unified continent-wide explanation. He suggested that it does not mean that hidden remnants of Carboniferous floras survived into the Jurassic but that continent-wide orogenesis dur-

ing Jurassic times in Europe caused much Carboniferous strata to be eroded away in Jurassic times.

Concerning "reworked" forms, Stanley¹⁴³ said: "These secondary grains usually are present in larger numbers in both marine and non-marine sediments than most workers would like to admit."

Comment: From all the statements cited above it can be seen that anomalous fossils cannot be dismissed as being rare or being only trivial localized occurrences. Stanley's statement hints that many instances of anomalous fossils go unpublished.

3. Lack of Independent Evidence in Many Cases of "Reworking"

Concerning the presence of Permian ammonoids in the Triassic of East Greenland, Teichert and Kummel⁹² wrote: "We consider it most probable that some of the Permian faunal elements in the lowest Triassic formations have been brought into that environment as argillaceous boulders, that once coming to rest, dissolved, leaving *well-preserved fossils* that were rapidly buried in the coarse sediment and in a free state were transported very little." (italics added)

In speaking of ostracodes, conodonts, and graptolites of Ordovician age occurring in nodules within Devonian rock, Chauff¹⁰³ said: "Phosphate nodules reworked into younger strata may display little evidence of transport."

Concerning solitary "reworked" conodonts, Pokorny¹⁰⁹ wrote: "Allochthonous species can sometimes be recognized by their state of preservation (degree of weathering, wear, different colour or lustre) but sometimes it is possible to distinguish them from autochthonous ones by X-ray examination. Because of their great durability even this may not be successful."

Concerning some conodont specimens that were ascribed to "reworking", Lindstrom¹⁰¹ said: "... these specimens were selected for quality. Indeed the illustrations show perfect, complete specimens."

Muir and Sargeant¹¹³ said:

"Detection of reworking is a difficult problem. In some cases, reworked spores are better preserved than indigenous ones, in other cases worse. They may stain more or less, be more or less crushed, be older or younger, or be the only spores present."

Recently, Brasier¹⁴⁴ wrote: "Yet another disadvantage to the stratigrapher is the ease with which coccoliths are reworked into younger sediments without showing outward signs of wear."

Comment: The statements make it clear that many (if not most) forms which are considered to be reworked do not show any special morphological evidence for having been reworked. "Reworking" is thus solely a rationalization because the fossil has occurred where it is not "supposed" to. (see below).

4. Preconceptions of "Proper" Stratigraphic Occurrence Often Sole Justification for Claims of "Reworking"

Hass¹¹⁰ wrote: "Differences in the physical appearance (color, preservation, luster) of associated specimens are indicators of a mixed fauna; but *the*

recognition of a mixed fauna is chiefly dependent upon one's knowledge of the true stratigraphic range of each kind of discrete conodont." (italics added)

In writing also of conodonts, Lindstrom¹¹¹ said: "If they do not fit into the patterns of conodont evolution established for the immediately older and younger beds, they may be in a secondary position. This is, however, a reasoning that one must use very cautiously, for there is the risk that it may lead to a vicious circle . . . Fifthly, one should use every opportunity to check the conodont sequence against index fossils belonging to other groups, as for instance trilobites or ammonoids."

Wilson¹¹² wrote: "In many cases the contaminants are difficult to recognize and to demonstrate the source of their origin; however, *the incompatible ages of the fossils and sequences of fossil ages are useful criteria in distinguishing mixed palynological deposit.*" (italics added)

Comment: The statements cited make it very clear that "reworking" is a convenient rationalization for "out of place" fossils. It can be and is capriciously invoked. The circular reasoning in assigning fossils to stratigraphic ranges and then turning around and explaining away occurrences of these fossils not fitting the prescribed stratigraphic ranges is obvious. As in so many other areas of the entire evolutionary-uniformitarian paradigm, only information fitting within narrow preconceived notions is accepted.

5. The Reason for the Preponderance of "Rework" over "Downwash" Situations

Goebel¹³⁶ said: "The youngest group of conodonts in a mixed fauna establishes the age of the fauna."

Comment: In an anomalous coexistence of fossils of different "ages", it is usually assumed that younger fossils yield the true age of the rock rather than the older ones. This accounts for the relative paucity of "downwash" situations.

6. Convenient Rationalization for Occurrences of Phanerozoic Microbiotas in Precambrian "Basement"

After noting how Phanerozoic contaminants can be seen in Precambrian "basement" along joints and intergranulars of the latter, Zoubek¹³⁷ recently wrote: "However, we are not so well aware of one fact typical of the polymetamorphic Precambrian basement of Phanerozoic orogens: during younger orogenesis, usually a metamorphic recrystallization of rocks of the Precambrian basement took place. Consequently, the former cracks and other mechanical discontinuities are often perfectly healed, and the "immigrated" microfossils become, in this way, an integral part of the older newly recrystallized rocks. Thus, isolated finds are to be considered with precaution in polymetamorphic terrains."

Comment: Whenever Phanerozoic microbiotas are found in Precambrian rock, they are dismissed as "contamination". Absence of textural and structural evidence can be rationalized away by claiming that it was erased in a later metamorphism. The attention and warning given by Zoubek hints that such finds of Phanerozoic biotas in Precambrian rock (as the find of Bur-

dick¹⁰⁰ and other examples discussed in No. 1, this section) may be fairly common.

V. GEOLOGIC-PROCESS RATES AND UNIFORMITARIANISM: SCIENTIFIC AND PHILOSOPHICAL CONSIDERATIONS

1. Introduction: Uniformitarianism—Its Ramifications and Its Fallacious Foundations

In a recent article on uniformitarianism, Bushman¹¹⁴ said: "Because identifiable cause and effect relationships that require long periods of time to develop according to the operation of natural law can be followed in sequence, we must conclude that the earth is millions of years old." Bushman¹¹⁴ also cited Hutton (1896): "Not only are no powers to be employed that are not natural to the globe, no action to be admitted except those of which we know the principle; and no extraordinary events to be alleged in order to explain a common appearance."

In an introduction to the reprint of a 19th century geology book, Wright¹¹⁵ wrote: "Was the world created in six days, perhaps in the year 4004 B.C.? Or must long periods of geologic time be postulated, if we are to explain the thick layers of sediments and the evidences of crumpled rocks in the earth's crust."

Khain¹¹⁶ wrote: "Having arrived at the conclusion that the present aspect of the Earth's surface is a result of major changes, Lomonosov could not reconcile it with official length of the Earth history, according to Biblical lore (5000 years) . . . In order to escape the wrath of churchmen, he refers to the numerous contradictions in the views of the Church on that subject, as militating against an acceptance of Church chronology, which is 'neither a dogma of the faith nor a pronouncement of the Councils.'" By contrast, the church father Clement (cited by Sparks¹¹⁷) declared: "Study the sacred Scriptures, which are true and are given by the Holy Spirit. Bear in mind that nothing wrong or falsified is written in them." (1 Clement 45:2-3)

Comment: The attitude of the church father Clement towards Scripture is in striking contrast to the attitude of many believers today. Indeed, the statements of Lomonosov make it clear that Creation, the Flood, and the youth of the earth have never been clearly explicated and defended by the church. Small wonder then that evolution and uniformitarianism had been so quickly and nearly universally accepted.

The other statements illustrate the scientific—as opposed to theological—fallacies of uniformitarianism. The statements of Bushman, Wright, and Khain make it clear that uniformitarian thought considers all processes on earth operating very slowly so that the earth must then be immensely old. The statements of Hutton show the circularity and narrowness of uniformitarian thought. Strong anti-supernatural preconceptions rule over what processes are considered "natural to the globe" and which are "extraordinary" (one should note that the Creation and Flood are "natural to the globe" and that, if anything, it is the present situation of very slow geologic change that is "extraordinary").

Hitchcock (as discussed by Wright), Lomonosov, Hutton, and Bushman all fail to consider that geologic pro-

cesses have operated at far greater rates in the past than at present. The first statements of Bushman also illustrate the uniformitarian fallacy of believing that sequences on earth (such as fossil horizons forming geologic periods) have time significance.

Clues Pointing to the Rapid Formation of Regionally-Distributed Metamorphic Rocks

Krauskopf¹¹⁸ said: "On the other hand solid-solid reactions are generally slow, especially reactions between silicates, and quite possibly the reactions necessary for metamorphism would not take place appreciably even in geologic time without the help of fluids. The argument hinges on reaction rates, *about which quantitative information is meager.*" (italics added)

Krauskopf¹¹⁹ also wrote: "If equilibrium is so much the general rule, a troublesome question presents itself. After a rock has been metamorphosed at high temperature and pressure, it must undergo a gradually decreasing temperature and pressure in order to appear finally in surface outcrops. Why doesn't its composition readjust itself so as to be in equilibrium with the lower temperature-pressure conditions? How are the high-temperature mineral assemblages preserved? Why, to put it baldly, do we ever find metamorphic rocks at all?"

After dismissing the argument that there is so little retrograde metamorphism because orogenic uplift is so much faster than compression as being special pleading, Krauskopf¹¹⁹ suggests: "For regional metamorphism a better explanation is suggested by the fact that this kind of metamorphism is generally an accompaniment to orogenic movement. Perhaps reactions can occur only during the movement itself, in response to intimate crushing and granulation of the rock; perhaps reaction ceases when movement ceases, preserving the mineral assemblage formed during the orogeny."

Comment: Some uniformitarians have charged that millions of years are necessary for the formation of regional metamorphic rock. The first statement of Krauskopf makes it clear that there is relatively little knowledge about metamorphic reaction rates. Not only is the uniformitarian argument, at best, unproven, but there are major difficulties in understanding the formation of metamorphic rocks in the context of the evolutionary-uniformitarian paradigm.

In uniformitarian thought, mountains are built by compressive tectonic forces over tens of millions of years and the uplift also requires tens of millions of years. Metamorphic rocks should all revert (at the very low P-T conditions of the earth's surface) more or less back to conditions of low P-T. The fact that there is so little such retrograde metamorphism is understood in the light of the Creationist-Diluvialist paradigm. The "intimate crushing and granulation of the rock" is the result of cataclysmic tectonism during the Flood year and the centuries following. Metamorphism is thus not the result of millions of years of deep rock burial and exhumation, but the result of unique cataclysmic tectonic stresses. When these stresses suddenly stopped, there

was no more impetus for metamorphic reactions to continue and so metamorphic minerals did not usually revert in the low P-T conditions.

In uniformitarian thought, mountains are built by compressive tectonic forces over tens of millions of years and the uplift also requires tens of millions of years. Metamorphic rocks should all revert (at the very low P-T conditions of the earth's surface) more or less back to conditions of low P-T. The fact that there is so little such retrograde metamorphism is understood in the light of the Creationist-Diluvialist paradigm. The "intimate crushing and granulation of the rock" is the result of cataclysmic tectonism during the Flood year and the centuries following. Metamorphism is thus not the result of millions of years of deep rock burial and exhumation, but the result of unique cataclysmic tectonic stresses. When these stresses suddenly stopped, there was no more impetus for metamorphic reactions to continue and so metamorphic minerals did not usually revert in the low P-T conditions.

3. Factors Contributing to the Rapid Cooling of Superposed Lava Flows

Williams and McBirney¹²⁰ said: "Because they have low thermal conductivity and high heat capacity, lavas of even moderate thickness are well insulated and cool slowly. It is often possible to walk on the crust of a moving lava that is red-hot only a few centimeters below the surface. Indeed, lavas have been observed to retain high temperatures as long as 5 or 6 years after their eruption . . . Rainfall can *greatly accelerate* heat losses from the surface of lavas. Ault and his co-workers (1961) found that heavy rains, totaling 4.44 inches in a period of 6 days, lowered the temperature-profile of a cooling Hawaiian lava by about 50° C to a depth of about a meter." (italics added)

Comment: Some uniformitarians have claimed that superposed lava flows interbedded with sedimentary rock need immense periods of time to form. The straw man they erected had an implicit presumption that lavas (or plutons, for that matter) need be cooled before they can be covered with a sedimentary layer. The fact that lavas can be touchably cool at the surface and yet furnace-hot at such a shallow depth implies that only the *upper crusts* of lavas and plutons need have cooled during the Flood year itself. Multiple extrusions of lava interbedded with sediment could therefore have taken place during the Flood year. Water-cooling helped.

4. Evidences for Rapid Cooling of Thick Intrusive Igneous Bodies

Warren¹²¹ (cited by Plumstead) discussed the finding of uncooked plant spores near an igneous intrusion in Antarctica. He wrote: "Usable spore and pollen remains have now been obtained from a number of localities and a number of horizons in the Beacon Group, in some places relatively close to thick intrusive sills, and in one instance from a thin sedimentary lens interbedded with lavas or sills."

In describing a situation from the Australian Triassic, Hamilton *et. al.*¹²² wrote: "The breccia pipes near Sydney contain numerous inclusions of coal . . . The

coal both in the breccia pipes and in the peripheral contorted zones is of bituminous rank, which is evidence that it has not been heated above quite modest temperatures . . . None of the coal shows evidence of profound thermal alteration."

In noting that contact metamorphism around ultramafic intrusives is much less than expected from theoretical temperatures of such intrusives, Krauskopf¹²³ said: "Perhaps some ultramafic material is intruded as a 'crystal mush', an aggregate of solid crystals lubricated by compressed water vapor, with the temperature never rising higher than a few hundred degrees."

Comment: The cited examples are evidence that thick igneous bodies were never as hot as widely believed and cooled rapidly (since the baking effect—as amply demonstrated by the everyday example of grilling meat—is a function of the intensity of heat and the duration of the heating). Thick igneous bodies may all have had an early magmatic stage before the Flood, with the minerals at the higher temperature scale of the Bowen's Reaction Series already having been created in a crystalline state. This would greatly reduce the temperatures of intra-Flood and post-Flood intrusions because the higher-temperature minerals would have been pre-crystallized and because the associated heat of phase change would not have had to be expended.

5. Evidence for Cataclysmic Formation of Thick Igneous Complexes

Irvine¹²⁷, in describing an ultramafic complex from Alaska, USA, wrote: "Many igneous intrusions show layering formed by gravitational accumulation of crystals that is, both in variety and detail, remarkably similar to the bedding of sedimentary rocks . . . Overall, stratification is developed intermittently through an original vertical thickness of 2 miles. Individual layers have been traced for 300 feet, and one continuously layered section is 1,500 feet thick and extends 1,000 feet . . . The layering has undoubtedly formed because of magmatic currents *during extremely unstable conditions.*" (Italics added)

Comment: This situation provides a most interesting phenomenon: crystals being deposited from a flood of magma the way clastic particles are deposited from a flood of water. The large scale of these turbidite-like sedimentary structures in the igneous body attests to the large-scale effect of cataclysmic magma flow. Such cataclysmic flows or mobilizations of large amounts of magma are perfectly consistent with the cataclysmic origin of igneous bodies during Creation Week and during flood-related tectonomagmatic events. Irvine¹²⁷ added that: "Such layering occurs in most compositional types of intrusions but especially in mafic and ultramafic bodies." The Alaskan example cited above is therefore far from an isolated instance.

6. Paramount Significance of the Young Earth Concept

Clebsch¹⁴ wrote: "The displacing of the particular creation-myth itself pales in importance beside the change in human self-awareness that was involved in

stretching their planet's age from a mere sixty centuries to many millions of centuries."

Comment: Many believers (even some of those with otherwise Creationist sympathies) tend to regard the earth's age as a very peripheral issue. The statement of Clebsch shows that the very opposite is true. The issue of the age of the earth is as important as the Creation-evolution issue itself!

7. Uniformitarianism Not Capable of Being Empirically Substantiated

Dickinson¹²⁴ wrote: "Uniformitarian thinking compels us to recognize, in the record of the rocks, the slow unfolding of diverse sequence of events whose full display is *beyond our immediate experience*." (italics added)

Comment: Uniformitarians often belittle and ridicule Creationists for believing in "unempirical" events such as the Creation and the Flood. The statement of Dickinson makes it clear that *all* accounts of past earth history are unempirical! The Creation and Flood are no more "unempirical" than a slowly-operating earth over long periods of time. Uniformitarian concepts and their consequences are certainly unempirical, and all the more so when one considers the numerous subsidiary hypotheses and special pleading necessary to maintain the acceptance of, say, the evolutionary-uniformitarian geologic column.

8. Uniformitarianism Rests Entirely on Faith

Hunt¹²⁵, a uniformitarian, proposed that a pattern of glacial erratics in southwest Canada indicates mile-high tidal waves caused by a passing meteor near earth about 11,000 years ago (such an idea, apart from the time-scale involved, would not be of direct use to the Creationist-Diluvialist paradigm unless there was post-Flood extraterrestrially-induced catastrophism).

In replying to criticism of his paper, Hunt¹²⁶ subsequently wrote: "The commentary of L. E. Jackson Jr., essentially a summary of conventional thought on emplacement of the Erratics Train, opens with the assertion, itself *an acclamation of uniformitarian faith*, that extensive published studies 'easily explain these deposits as products of unassisted earth processes.' He then proceeds to ignore the two principal problems requiring explanation, and which my hypothesis answers." (italics added)

Comment: Uniformitarians frequently claim that their positions are "matters of pure science" while those of the Creationist-Diluvialist are "matters of faith." The reply by Hunt makes it evident that uniformitarian claims rest upon faith, particularly the well-worn premise that presently-operating processes at presently-operating rates under presently-operating conditions account for geologic features of the earth.

9. Religion Not the Cause of Superstitious Ideas About Earth History

Williams¹²⁸ wrote: "... Voltaire was only half-joking when he supposed that the oyster shells found by travellers in the Alpine passes were the result of the

passage of generations of pious pilgrims on their way to Rome."

Comment: At one time, superstitious ideas about fossils were widely held. Historical geology textbooks commonly (but subtly) associate such superstitions with the strong religious convictions of past ages. The statement of Williams notes that Voltaire, the noted infidel, held superstitious views about fossils. Superstition was therefore universal and cannot be blamed on religious belief.

10. Uniformitarian Prejudices against Catastrophic Processes

Pattison *et. al.*¹²⁹ wrote: "With Rhodes, we do not regard the changes in the distribution and evolution of floral and faunal elements as either unduly rapid or abnormal, and consequently do not feel impelled to invoke *catastrophic or otherwise abnormal* causes to explain them." (italics added)

Comment: The equating of catastrophic processes with abnormality reveals the prejudice against catastrophism in contemporary uniformitarian geologic thought.

11. Need for Broader thinking in the Formulation of Geologic Theories

Jodry¹³⁰ said: Every few years a new geologic concept is proposed that is so well conceived and so forcefully presented, by authors of such unimpeachable reputation that it is almost universally accepted and applied. But such complete acceptance obscures the fact that *other concepts may apply*, and that *more than one geologic process may produce a given rock*. (italics added)

Comment: Some geologists, upon learning that the author is a Creationist-Diluvialist, said: "Uniformitarianism works, so why invoke anything else?" I answered that it "works" only via special pleading and endless subsidiary hypotheses. Besides (as Jodry's statement cited above indicates) the fact that a geologic theory is widely accepted and seems to "work" does not give one a right to be closed-minded towards alternative viewpoints.

12. Repressive Influence of Uniformitarianism Upon Geologic Thought

Marvin¹³¹ wrote: "The hypothesis of continental drift is the other issue in which the uniformitarian outlook discouraged serious investigation . . . The hypothesis of continental drift appeared to be so antiuniformitarian in spirit that many geologists reacted as they might to a personal insult."

Comment: Irrespective of whether or not one accepts plate tectonics, one can see that much can be learned about the process of geologic thought from it. Uniformitarians love to boast of their position as being intellectually liberating. The statement of Marvin shows that uniformitarianism is actually an intellectual strait-jacket. Whether or not a concept in geology is or isn't accepted depends heavily on whether or not it agrees with the sacrosanct dogma of uniformitarianism.

13. Pervasive Intolerance Towards Minority Viewpoints in Uniformitarian Geology

Nitecki *et al.*¹³² did a study involving a survey of 215 professional American geologists concerning their position towards the "new global tectonics." 87% accepted it (about half considering it "essentially established" and slightly less than half considering it "fairly well established"), and the remaining 12% rejected it as being "inadequately proven". 22% accepted in 1961.

They also noted: "It is significant that those least favorable to the theory were no less and no more familiar with the literature than those who have most recently accepted the theory." (So it can not be claimed that opponents of plate tectonics are less informed than proponents). A significant number of the 12% who reject plate tectonics are younger geologists, so it can not be claimed that skepticism towards plate tectonics comes only from the older geologists trained when plate tectonics was not generally accepted.

Especially significant is the following conclusion: "... those who have recently accepted the theory did so in an atmosphere of general acceptance that does not seem to require that they weight all the evidence themselves."

In a book review, Neumann¹³³ wrote: "Plate tectonics has been an enormous stimulant to geology and paleogeography. No doubt remains that such processes operate today on a global scale ... Although many of its effects remain to be documented, continuing skepticism seems pointless and curious. Thus the final paper of the volume, 'Epilogue: a Paleozoic Pangea' by Boucot and Gray, might be compared to a sophisticated justification of the principles underlying the Flat Earth Society, and seems more a parody than a serious scientific essay."

Comment: From the research of Nitecki *et al.*, it is evident that a significant minority of informed geologists (at least 12%) reject plate tectonics in 1977. Yet plate tectonics is increasingly being presented as proven fact (statements of Neumann). This illustrates the uniformitarian intolerance towards minority viewpoints. If minority viewpoints *within* uniformitarianism can be summarily rejected, how much more so Creationism-Diluvialism and its magnitudes-greater radicalism and vastly smaller minority (than 12%)! The fact that most uniformitarians accept continental drift not from weighing evidence but from "jumping on the Bandwagon" and "following the crowd" has important implications in showing how theories become accepted in geology. Very likely it was a similar shunning of minority viewpoints and "following the crowd" that led to the rejection of Creationism-Diluvialism and swallowing of the claim of Hutton, Lyell, and Darwin over 1½ centuries ago.

While on the subject of plate tectonics, it should be noted that Creationists-Diluvialists beware of "jumping on the bandwagon." Most of the presumed evidences for the "new global tectonics" are squarely evolutionary-uniformitarian and so have no meaning in the Creationist-Diluvialist paradigm. The argument from paleobiogeography, for example, has meaning only if one accepts geologic periods and evolution: accep-

tance of paleoclimatological arguments also requires acceptance of geologic periods. The vital ocean-floor arguments (magnetic "stripes", ocean-bottom biostratigraphy, K-Ar results from submarine lavas) all require acceptance of geologic periods, geomagnetic reversals, and radiometric dating.

14. Atheistic Character of Uniformitarianism

Concerning the pioneer uniformitarian James Hutton, Marvin¹³⁴ wrote: "He was accused of atheism ..."

In describing a pioneer uniformitarian who should perhaps qualify as an equal of Hutton and Lyell, Aprodov¹³⁵ said "This tribute praises Lomonosov for his purported employment of the dialectic concept to the evolution of the earth. The claim that Lomonosov's interpretations of the earth are materialistic is absolutely true, as are all other scientific interpretations. Whether he is the father of materialism in Russian science is of little importance because all sound science is materialistic ... The statements that he first applied historical analyses to explain geologic phenomena and that he established the principle of actualism 70 years before Lyell would be brought to the attention of those unfamiliar with the contributions of the great Russian scientist."

Comment: While Hutton was not an atheist (he was said to be a Deist) his position is atheistic and his critics were correct in pointing this out. Deism and atheism are not far separated: a Supreme Being who does nothing is not greatly different from a Supreme Being who does not exist at all.

It goes without saying that Soviet Communist ideology is openly materialistic and militantly atheistic. The fact that uniformitarianism gets such an enthusiastic endorsement in Soviet Communist ideology (statements of Aprodov) is an excellent indicator of the atheistic foundations of uniformitarianism.

15. Fallacies of the Geologic Column: Extended Stratigraphic Ranges

Glaessner¹³⁶ wrote: "Index fossils combine short stratigraphic range with wide geographic distribution. The main problem in the use of index fossils is the finality with which their stratigraphic ranges can be established."

In proposing the resolution of a stratigraphic problem, Berry and Boucot¹³⁷ suggested: "... to let the genus *Stricklandia*, previously unknown beneath the Silurian, extend its range down into the Ordovician."

Smit⁷¹ wrote: "It may even be possible that the Dinosaurs of the Pognacium are partly of Tertiary age ..."

Comment: Extending the brachiopod *Stricklandia* and allowing dinosaurs to range beyond Cretaceous are two more examples of stratigraphic range extensions; reducing further the credibility of the geologic column.

References

- AG—American Association of Petroleum Geologists Bulletin
- AJ —American Journal of Science
- CA—Bulletin of Canadian Petroleum Geology

EL—Elsevier Scientific Publishing Co., Amsterdam, New York
 GA—Geological Society of America Abstracts with Programs
 GR—Grana Palynologica
 IG—International Geology Review
 JP—Journal of Paleontology
 JW—John Wiley and Sons, New York, Toronto
 MI—Revue Micropaleontologie
 MP—Micropaleontology
 NA—Nature
 PA—Palaeogeography, Palaeoclimatology, Palaeoecology
 PS—Pollen et Spores
 PY—Geophytology
 RE—Creation Research Society Quarterly
 RP—Review of Paleobotany and Palynology
 RU—Geologische Rundschau
 SP—Journal of Sedimentary Petrology
 US—Proceedings of the Ussher Society

¹Woodmorappe J. 1980. An Anthology of Matters Significant to Creationism and Diluviology: Report 1. *RE* 16(4):209-219.

²Brownlow A. H. 1979. *Geochemistry*. Prentice-Hall, Englewood Cliffs, New Jersey, p. 262-4.

³Darlington P. J. 1980. *Evolution for Naturalists*. J. W., p. 33.

⁴Davies G.F. 1979. Proof in Science. *Transactions American Geophysical Union*. 60(52):1044.

⁵Frey R. W. 1971. Ichnology: The Study of Fossil and Recent Lebenspuren. *Louisiana State University School of Geosciences Miscellaneous Publication* 71-1, p. 105-6.

⁶Darlington. 1980. *op. cit.*, p. 24.

⁷*ibid.* p. 168.

⁸Anderson J.K. and H.G. Coffin. 1977. *Fossils in Focus*. Zondervan Pub. Co., Grand Rapids, Michigan, pp. 76-81.

⁹Waterhouse J.B. 1979. The Role of Fossil Communities in the Biostratigraphical Record and in Evolution (in Gray J. and A. J. Boucot. 1979. *Historical Biogeography, Plate Tectonics, and the Changing Environment*. Proceedings of the 37th Annual Biology Colloquium, Oregon State University Press). p. 249-50.

¹⁰Darlington. 1980. *op. cit.*, p. 76.

¹¹*ibid.* p. 31.

¹²*ibid.* p. 32.

¹³Heinlein R. cited by W.J.M. Mackenzie. 1979. *Biological Ideas in Politics*. St. Martin's Press, New York, p. 11.

¹⁴Clebsch W.A. 1979. *Christianity in European History*. Oxford University Press, New York, p. 245.

¹⁵Darlington. 1980. *op. cit.*, p. 243-4.

¹⁶Littell F.H. 1976. *The Macmillan Atlas History of Christianity*. MacMillan Pub. Co., New York, London, p. 104.

¹⁷Hoffmann P. 1979. *Hitler's Personal Security*. Pergamon Press. London and Cambridge, Mass., p. 264.

¹⁸Darlington. 1980. *op. cit.*, p. 46.

¹⁹Clebsch. 1979. *op. cit.*, p. 246.

²⁰Darlington. 1980. *op. cit.*, p. 233.

²¹*ibid.* p. 15, 233.

²²Shaver R.H. 1974. Structural Evolution of Northern Indiana during Silurian Time (in 1974. *Silurian Reef Evaporite Relationship: Michigan Basin Geological Society Field Conference*) p. 63.

²³Woodmorappe. 1980. *op. cit.*, p. 213-14.

²⁴Shinn E.L. Recent Intertidal and Nearshore Carbonate Sedimentation around Rock Highs, E. Qatar, Persian Gulf (in Purser B.H. 1973. *The Persian Gulf*. Springer-Verlag, Berlin, New York), p. 197.

²⁵Squires R.L. 1976. Pseudoreefs in the San Andres Formation, Guadalupe Mountains, New Mexico. *GA* 8:634-5.

²⁶Carozzi A.V. and J.B. Hunt. 1960. Fore-Reef Petrography of the Silurian Richvalley Reef, Indiana. *SP* 30:209.

²⁷McGovney J.E. 1978. Deposition, Porosity, Evolution, and Diagenesis of the Thornton Reef (Silurian) Northeastern Illinois. *University of Wisconsin-Madison PhD Thesis*. p. 90.

²⁸Hinman E.E. 1968. A Biohermal Facies in the Silurian of Eastern Iowa. *Iowa Geological Survey Report of Investigations* 6:1, 2.

²⁹Kahle C.F. 1974. Nature and Significance of Silurian Rocks at Maumee Quarry, Ohio, (in 1974. *op. cit.*), p. 33.

³⁰Twenhofel W.A. 1950. Coral and Other Organic Reefs in Geologic Column. *AG* 34:182-202.

³¹*ibid.* p. 183.

³²Lane N.G. 1970. Crinoids and Reefs (in Yockelson E.L. 1970. *Proceedings of the North American Paleontological Convention*) p. 1438-40.

³³Klovan J.E. 1974. Development of Western Canadian Devonian Reefs and Comparison with Holocene Analogues. *AG* 58:791.

³⁴Twenhofel, 1950. *op. cit.*, p. 186.

³⁵Klovan. 1974. *op. cit.*, p. 788.

³⁶Philcox M.E. 1970. Geometry and Evolution of the Palisades Reef Complex, Silurian of Iowa. *SP* 40:195.

³⁷Ager D.V. 1963. *Principles of Paleogeology* McGraw Hill, New York, p. 86-7.

³⁸Manten A.A. 1965. Review of Ager (ref. 37 above). *PA* 1:175.

³⁹Hekker R.F. 1965. *Introduction to Paleogeology*. El, p. 51.

⁴⁰Pray L.C. 1976. Guidebook for a Field Trip on Silurian Reefs, Interreef Facies, and Faunal Zones of Northern Indiana and Northeastern Illinois. *North-Central Section, Geological Society of America and Western Michigan University*, p. 12.

⁴¹Keith J.W. 1970. Tectonic Control of Devonian Reef Sedimentation, Alberta. *AG* 54:854.

⁴²Anstey R.K. and J.F. Pachut. 1976. Functional Morphology of Animal Colonies by Comparison with Sand Dune Paradigms. *GA* 8:124-5.

⁴³Mountjoy E. 1980. Some Questions About the Development of Upper Devonian Carbonate Buildups (Reefs), Western Canada. *CA* 28:316.

⁴⁴Anderton R., Bridges P.H., Leeder M.R., and B.W. Sellwood. 1979. *A Dynamic Stratigraphy of the British Isles* George Allen and Unwin, London, Boston, Sydney, p. 144.

⁴⁵Stanley G.D. 1979. The Early History of Mesozoic Reef Building: Evidence from North America and Europe. *GA* 11(7):523.

⁴⁶Stanley G.D. 1979. Paleogeology, Structure, and Distribution of Triassic Coral Buildups in Western North America. *University of Kansas Paleontological Contribution Article* 65, p. 46.

⁴⁷Philcox M.E. 1971. Growth Forms and Role of Colonial Coelenterates in Reefs of the Gower Formation (Silurian) Iowa. *JP* 45:343-4.

⁴⁸Fursich F. Th. 1980. Preserved life positions of some Jurassic bivalves. *Palaeontologische Zeitschrift* 54:292.

⁴⁹Neumann A.C. 1981. Waulsortian Mounds and Lithoherms Compared. *AG* 65:965.

⁵⁰Jenkyns H.C. 1971. Speculations on the Genesis of Crinoidal Limestones in the Tethyan Jurassic. *RU* 60(2):480-1.

⁵¹Savage J.M. 1969. *Evolution*. Holt, Rhinehart and Winston, Inc., New York, Chicago, Montreal, London, Sydney, pp. v-vi.

⁵²Valentine J.W. 1977. General Patterns of Metazoan Evolution (in Hallam A. 1977. *Patterns of Evolution*. El.), p. 35.

⁵³Ruse M. 1973. *The Philosophy of Biology*. Hutchinson and Co., London, p. 96.

⁵⁴*ibid.*, p. 107.

⁵⁵Hallam A. 1977. Preface (in Hallam. 1977. *op. cit.*). p. v-vi.

⁵⁶Ruse, 1973. *op. cit.*, p. 111.

⁵⁷Laporte L.F. 1980. Human Origins and the East African Evidence. *Paleobiology* 6:139.

⁵⁸Paul C.R.C. 1977. Evolution of Primitive Echinoderms (in Hallam. 1977. *op. cit.*), p. 130.

⁵⁹van Heyningen. 1968. Tetanus. *Scientific American*. April 1968, p. 71, 73.

⁶⁰Gretener P.E. 1977. On the Character of Thrust Faults With Particular Reference to the Basal Tongues. *CA* 25:110.

⁶¹Burdick C. 1971. Streamlining Stratigraphy (in Lammerts W.E. 1971. *Scientific Studies in Special Creation*. Presbyterian and Reformed Pub. Co.) pp. 128-135.

⁶²Burdick C.L. and H. Slusher. 1969. The Empire Mountains—A Thrust Fault? *RE* 6(1):49-54.

⁶³Gretener P.E. 1972. Thoughts on Overthrust Faulting in a Layered Sequence. *CA* 20:590-1.

⁶⁴Gretener, 1977. *op. cit.*, p. 111.

⁶⁵Rezvoy D.P. 1971. Problem of "thrust sheets" in the Alay Range. *IG* 13:1736.

⁶⁶*ibid.*, p. 1741.

⁶⁷Ager D.V. 1974. Storm Deposits in the Jurassic of the Moroccan High Atlas. *PA* 15:83-93.

- ⁶⁸Gretener. 1977. *op.cit.*, p. 116.
- ⁶⁹Woodmorappe. 1980. *op.cit.*, p. 212.
- ⁷⁰Gartner S. and B. Lodz. 1972. Reworking and Apparent reworking of Neogene fossil plankton. *MP* 18:117.
- ⁷¹Smit J. 1979. Microdium, Its Earliest Occurrence and other Considerations. *MI* 22:46.
- ⁷²Chene J.D.E., De Klasz I.D.E. and E.E. Archibong. 1978. Biostratigraphic Study of the Borehold UJO-1, SW Nigeria, with special Emphasis on the Cretaceous Microflora. *MI* 21:125.
- ⁷³Domack E.W., Fairchild W.W., and J.B. Anderson. 1980. Lower Cretaceous sediment from East Antarctic continental shelf. *NA* 287:625-6.
- ⁷⁴Gohabandt K.H.A. 1967. The geologic age of the type locality of *Pseudotextularia elegans* (Rzehaf). *MP* 13:70.
- ⁷⁵Haynes J. and A.R.M. El-Naggra. 1964. Reworked Upper Cretaceous and Danian planktonic foraminifera in the type Thanetian. *MP* 10:354-5.
- ⁷⁶Bramlette M.N. and E. Marteni. 1964. The great change in the calcareous nannoplankton fossils between the Maestrichtian and Danian. *MP* 10:294.
- ⁷⁷Thiede J. 1981. Reworking of Upper Mesozoic and Cenozoic central Pacific deep-sea sediments. *NA* 289:667-70.
- ⁷⁸Otvis E.G. and W.D. Brock. 1976. Massive Long-Distance Transport and Redeposition of Upper Cretaceous Planktonic Foraminifers in Quaternary Sediment. *SP* 46:978.
- ⁷⁹Funkhouser J.W. 1969. Factors that Affect Sample Reliability (in Tschudy R.H. and R.A. Scott. 1969. *Aspects of Palynology*). *JW*, p. 101.
- ⁸⁰Bramlette M.N. and F.R. Sullivan. 1961. Coccolithophorids and related nannoplankton of the early Tertiary in California. *MP* 7:133.
- ⁸¹Jones D.J. 1956. *Introduction of Microfossils*. Harper Bros, New York, pp. 260-7.
- ⁸²Akyol E. 1972. Palynologie Du Permien Inferieur De Sariz (Kayseri) Ed De Pamucak Yaylasi (Antalya-Turquie) et Contamination Jurassique Observee, Due Aux Ruisseaux "Pamucak" et "Goynuk". *PS* 17(1).
- ⁸³Phillips L. 1974. Reworked Mesozoic Spores in Tertiary Leaf-Beds on Mull, Scotland. *RP* 17:221.
- ⁸⁴Krassilov V.A. 1972. (translated 1975). *Paleoecology of Terrestrial Plants*. *JW*, p. 56-7.
- ⁸⁵Van Morkhoven F.P.C.M. 1962. *Post-Paleozoic Ostracoda*. *EL*, Vol I, p. 126.
- ⁸⁶Sturt B.A., Dalland A., and J.L. Mitchell. 1979. The Age of the Sub Mid-Jurassic Tropical Weathering Profile of Andoya, Northern Norway and the Implications for the Late Palaeozoic Paleogeography in the North Atlantic Region. *RU* 68(2):527.
- ⁸⁷Muller K.J. and L.C. Mosher. 1971. Post-Triassic Conodonts (in Sweet W.C. and S.M. Bergstrom. 1971. Symposium on Conodont Biostratigraphy. *Geological Society of America Memoir* 127:467.
- ⁸⁸Wilson L.R. 1964. Recycling, Stratigraphic Leakage, and Faulty Techniques in Palynology. *GR* 5:429.
- ⁸⁹Veevers J.J. 1976. Early Phanerozoic Events on and alongside the Australasian-Antarctic Platform. *Journal of the Geological Society of Australia* 23:203, 190-1.
- ⁹⁰Warrington G. 1979. A Derived Late Permian Palynomorph Assemblage from the Keuper Marl (Late Triassic) of West Somerset. *US* 1979, 4(3):299.
- ⁹¹Venkatachala B.S. 1969. Palynology of the Mesozoic Sediments of Kutch. W. Indian, Reworked Permian Pollen from the Upper Jurassic Sediment—A Discussion. *Palaeobotanist* 18(1):45.
- ⁹²Teichert C. and B. Kummel. 1972. Permian-Triassic Boundary in the Kap Stosch Area, East Greenland. *CA* 20(4):659.
- ⁹³Windle T.M.F. 1979. Reworked Carboniferous Spores: An Example from the Lower Jurassic of Northeast Scotland. *RP* 27:174-5.
- ⁹⁴Wilson. 1964. *op.cit.* p. 428
- ⁹⁵Warrington G. 1971. Palynology of the New Red Sandstone Sequence of the South Devon Coast. *US* 1971 2(4):307-8.
- ⁹⁶Danilov M.A. and G.V. Kanev. 1979. Discovery of Paleozoic spores in the Central part of the synclonorium of the Vetreny belt of the Baltic Shield. *IG* 21:1128-9.
- ⁹⁷Muir M.D. 1967. Reworking in Jurassic and Cretaceous Spore Assemblages. *RP* 5:148-50.
- ⁹⁸Bless J.M. et.al. 1980. Pre-Permian Depositional Environments Around the Brabant Massif in Belgium, the Netherlands, and Germany. *Sedimentary Geology* 27(1):72, 35, 8-9.
- ⁹⁹Belinkin F.H. 1975. Leonardian and Guadalupian (Permian) Conodont Biostratigraphy in Western and Southwestern United States. *JP* 49:301-2.
- ¹⁰⁰Bader R.H. 1981. Stratigraphy, Paleontology, and Palynology of Holocene Deposits in Southwestern Lake Michigan. Unpublished MS Thesis, Northeastern Illinois University, p. 85-90.
- ¹⁰¹Lindstrom M. 1946. *Conodonts* *EL*, p. 72.
- ¹⁰²Graysom R. 1981. Distribution and Significance of Allochthonous Conodonts in Early Pennsylvanian rocks of eastern Oklahoma. *GA* 13(6):279.
- ¹⁰³Chauff K.M. 1978. Recovery of Ordovician conodonts by hydrochloric acid from phosphate nodules reworked into the Sulphur Springs Formation (Devonian) in Missouri, USA. *Geological Magazine* 115(3):207-8.
- ¹⁰⁴Dr. Stif Bergstrom, Professor of Geology, Ohio State University, Columbus, Ohio, 1980, personal communication.
- ¹⁰⁵Rozanov A. Yu. and F. Debrenne. 1974. Age of Archaeocyathid Assemblages. *AJ* 274:845.
- ¹⁰⁶Burdick C.L. 1966. Microflora of the Grand Canyon. *RE* 3(1):38-50. also: 1972. Progress Report on Grand Canyon Palynology. *RE* 9(1):25-30.
- ¹⁰⁷Bramlette and Sullivan. 1961. *op.cit.*, p. 133.
- ¹⁰⁸Muir. 1967. *op.cit.*, p. 153.
- ¹⁰⁹Pokorny V. 1965. *Principles of Zoological Micropaleontology*. Vol. II, Pergamon Press, Oxford, New York., p. 67.
- ¹¹⁰Hass W.J. 1962. Conodonts (in Hass W.H., Hantzschel W., Fisher D.W., Howell B.F., Rhodes F.H.T., Muller K.J., and R.C. Moore. 1962. *Miscellanea. Treatise on Invertebrate Paleontology* W38.
- ¹¹¹Lindstrom. 1964. *op.cit.*, p. 73-4.
- ¹¹²Wilson. 1964. *op.cit.*, p. 427.
- ¹¹³Muir M.D. and W.A.S. Sarjeant. 1977. Editors Comments (in Muir M.D. and W.A.S. Sarjeant. 1977. *Palynology: Part 1*, Dowden, Hutchinson, and Co., Stroudsburg, Pennsylvania) p. 223.
- ¹¹⁴Bushman J.R. 1981. Uniformitarianism According to Hutton. *Journal of Geological Education* 29:32-3.
- ¹¹⁵Wright C. 1975. Introduction (to Hitchcock E. 1851, reprinted 1975. *The Religion of Geology and Its Connected Sciences*. Regina Press, New York) p. 4m.
- ¹¹⁶Khain V. Ye. 1963. Lomonosov and Modern Geology. *IG* 5:714.
- ¹¹⁷Sparks J.M. 1978. *The apostolic Fathers*. Thomas-Nelson Pub. Co., Nashville, New York, p. 41-3.
- ¹¹⁸Krauskopf K.B. 1979. *Introduction of Geochemistry*. McGraw Hill Book Co., New York, Sydney, Tokyo, Toronto, p. 435 (2nd Edition).
- ¹¹⁹*ibid*, p. 440-1.
- ¹²⁰Williams H. and A.R. McBirney. 1979. *Volcanology* Freeman, Cooper, and Co., San Francisco, p. 121-2.
- ¹²¹Plumstead E.P. 1964. Palaeobotany of Antarctica (in Adie R.J. 1964. *Antarctic Geology*. *JW*) 654.
- ¹²²Hamilton L.H., Helby R., and G.H. Taylor. 1970. The Occurrence and Significance of Triassic coal in the Volcanic Necks near Sydney. *Royal Society of New South Wales Journal and Proceedings* 102 (parts 3 and 4) p. 169.
- ¹²³Krauskopf. 1979. *op.cit.*, p. 342.
- ¹²⁴Dickinson W. 1971. Uniformitarianism and Plate Tectonics. *Science* 174:107.
- ¹²⁵Hunt C.W. 1977. Catastrophic termination of the Last Wisconsin Ice Advance, Observations in Alberta and Idaho. *CA* 25:456-67.
- ¹²⁶Hunt C.W. 1978. Reply to L.E. Jackson. *CA* 26:167.
- ¹²⁷Irvine T.N. 1964. Sedimentary Structures in Layered Ultrabasic Rocks. *AG* 48:533.
- ¹²⁸Williams L.P. 1973. Review of *Steno as Geologist*. *AJ* 273:351.
- ¹²⁹Pattison J., Smith D.B., and G. Warrington. 1973. A Review of Late Permian and Early Triassic Biostratigraphy in the British Isles (in Logan A. and I.N. Hills. 1973. *The Permian and Triassic Systems and Their Mutual Boundary*. *CA Memoir* 2) p. 256.
- ¹³⁰Jodry R.L. 1969. Growth and Dolomitization of Silurian Reefs, St. Clair County, Michigan. *AG* 53:957.
- ¹³¹Marvin V.B. 1973. *Continental Drift*. Smithsonian Inst. Press, Washington, D.C., p. 37-8.
- ¹³²Nitecki M.H., Lemke J.L., Pullman H.W., and M.E. Johnson. 1978. Acceptance of plate tectonic theory by geologists. *Geology* 6:661-4.
- ¹³³Neumann R.B. 1981. Review of *Historical Biogeography*. *JP* 55(3):693.
- ¹³⁴Marvin. 1973. *op.cit.*, p. 36.
- ¹³⁵Apodov V.A. 1963. Main Features of Philosophical Materialism in Geological Works of M.V. Lomonosov. *IG* 5:698.
- ¹³⁶Glaessner M.F. 1967. *Principles of Micropaleontology*. Hafner Publ. Co., New York, London, p. 225.

¹³⁷Berry W.B.N. and A.J. Boucot. 1973. Correlation of the African Silurian Rocks. *Geological Society of American Special Paper* 147:60.

¹³⁸Cronin J.E., Boaz N.T., Stringer C.B., and Y. Rak. 1981. Tempo and mode in hominid evolution. *NA* 292, p. 115.

¹³⁹*Ibid*, p. 114-115, 119.

¹⁴⁰*Ibid*, p. 116.

¹⁴¹Woodmorappe J. 1978. The Cephalopods in the Creation and the Universal Deluge. *RE* 15(2)97-8. especially Figure 3(i).

¹⁴²Kummel B. and C. Teichert. 1970. Stratigraphy and Paleontology of the Permian-Triassic Boundary Beds, Salt Range and Trans-Indus Ranges, West Pakistan (*in* Kummel B. and C. Teichert. 1970. *Stratigraphic Boundary Problems*) U. of Kansas Special Publication No. 4), p. 53.

¹⁴³Stanley E.A. 1969. The Occurrence and Distribution of Pollen and Spores in Marine Sediments (*in* Bronnimann P. and H.H. Renz. 1969. *Proceedings of the First International Conference on Planktonic Microfossils*. Vol. II. E. Brill, Leiden, pp. 641-3.

¹⁴⁴Brasier M.D. 1980. *Microfossils*. George Allen and Unwin, London, p. 47.

¹⁴⁵Wilson R.L. 1976. Palynology and evidence for the origin of the Atokak Formation (Pennsylvanian) rocks in the type area. *GA* 8(1)72-3.

¹⁴⁶Sadowska A. 1975. Uwage o prowadzonych ostatnio badaniach palinologicznych trozecinzedowych osadow ilastych w Sudetach. *Kwartalnik Geologiczny* 19:725-31 (in Polish).

¹⁴⁷Herngreen G.F.C. 1976. A probable erroneous identification of *Tricolporopollenites distinctus* Groot et Penny from lowermost Cretaceous strata in the eastern Netherlands. *RP* 22:345.

¹⁴⁸Lytshv G.F. 1978. A New Early Oligocene Beaver of the Genus *Agnatocastor* from Kazakhstan. *Paleontological Journal*. 12:542.

¹⁴⁹Stanley E.A. 1966. the Problem of Reworked Pollen and Spores in Marine Sediments. *Marine Geology* 4:403.

¹⁵⁰Barss M.S., Bujak J.P., and G.L. Williams. 1979. Palynological Zonation and Correlation of Sixty-Seven Wells, Eastern Canada. *Geological Survey of Canada Special Paper* 78-2, 118p.

¹⁵¹Balme B.F. 1970. Palynology of Permian and Triassic Strata in the Salt Range and Surghar Range, West Pakistan (*in* Kummel and Teichert. 1970., *op.cit.*) p. 382.

¹⁵²Soukup J., Konzalova M., and Z. Lochmann, 1975. Relikty Cenomanu a toronu V. podlozi miocenu mezy Jarkovem a Novym Sedlem nad Bilanous. *Prague: Ustredni Ustav Geologicky Ventnik* Vol. 50(3)141-52 (in Czech).

¹⁵³Shumenko S.I. and M.E. Kaplan. 1978. Discovery of Coccoliths in Lower Triassic Deposits of Siberia. *Doklady: Earth Sciences* 240-226.

¹⁵⁴Evitt W.R. and S.T. Pierce. 1975. Early Tertiary Ages from the coastal belt of the Franciscan Complex, Northern California. *Geology* 3:433-6.

¹⁵⁵Kar P.K. 1980. Permian Miospores in the Miocene Sediments of Kutch, Gujarat. *PY* 10:171.

¹⁵⁶Saxena R.K. 1979. Reworked Cretaceous spores and pollen grains from the Matanomadh Fromation (Palaeocene) Kutch, India. *Palaeobotanist* 26:167-74.

¹⁵⁷Matsuda T. 1980. Discovery of Permian-Triassic mixed conodont assemblage from the Akasaka Limestone, Gifu Prefecture. *Geological Society of Japan Journal* 86:41-44 (in Japanese).

¹⁵⁸Dutta S.K. 1978. A Note on the Significance of the Discovery of Gondwana Palynomorphs in Rocks of Assam, Nagaland, and Meghalaya. *PY* 7:131.

¹⁵⁹Dutta S.K. 1979. Recycled Permian Palynomorphs in Upper Cretaceous Rocks of Juintia Hills, Meghalaya. *PY* 8:250-1.

¹⁶⁰Beach T.L. and J.B. Urban. 1974. The investigation of Carboniferous Stratigraphic leaks from Missouri and Iowa. *Geoscience and Man* 9:91-2.

¹⁶¹Hose R.K., Wrucke C.T., and A.K. Armstrong. 1979. Mixed Devonian and Mississippian conodont and foraminiferal faunas and their bearing on the Roberts Mountains Thrust, Nevada, GA 11:446.

¹⁶²Matthews S.C. and J.M. Thomas. 1974. Lower Carboniferous conodont faunas from North-East Devonshire. *Palaeontology* 17:382.

¹⁶³Richardson J.B., and SM. Rasul. 1978. Lower Devonian spores and reworked acritarchs from the Witney Borehole, southern England, and their geological implications. *Palynology* 2:231.

¹⁶⁴Haq B. 1971. Paleogene Calcareous Nannoflora, Part III Oligocene of Syria. *Stockholm Contributions to Geology* 25(3).

¹⁶⁵Wilson, G.J. 1976. Permian Palynomorphs from the Mangarewa Formation, Productus Creek, Southland, New Zealand, *New Zealand Journal of Geology and Geophysics* 19:137.

¹⁶⁶Chiguryayeva A.A. and K.V. Voronina, 1961, Data on Upper Pleistocene Vegetation in the North Caspian Region. *Doklady: Earth Science Sections* 131:362.

¹⁶⁷Alvarez W. and W. Lowrie. 1981. Upper Cretaceous to Eocene pelagic limestones of the Scaglia Rossa are not Miocene Turbidites *NA* 294:246-7.

¹⁶⁸Arkhipov S.A. and O.V. Matvayeva. 1961. Spore Pollen Spectra of the Pre-Samarovo Anthropogene Deposits of the Glaciation Zone in the Yenisei Region of the West Siberian Lowlands. *Doklady: Earth Science Sections* 135:1204.

¹⁶⁹Scott, R.A., Williams W.L., Craig L.C., Barghoorn E., Hickey L.J., and U.D. MacGinitie. 1972. *American Journal of Botany* 59:886-96.

¹⁷⁰Morgan R. 1977. Elucidation of *Diconodium* and Its Stratigraphic Range in Australia. *Palynology* 1:175.

¹⁷²Odrzywolska-Bienkova E. and K. Pozaryska. 1981. Micropaleontological Stratigraphy of the Paleogene in the Fore-Sudetic Monocline. *Bulletin de L'Academie Polonaise Des Sciences-Series des sciences del la terre* XXIX(1)26.

¹⁷²Olsson R.K. 1970. Planktonic Foraminifera From Base of Tertiary Millers Ferry, Alabama, *JP* 44:600.

¹⁷³Haq B. 1971a. Paleogene Calcareous Nannoflora Part I. The Paleocene of West-Central Persia and the Upper Paleocene, Eocene of West Pakistan. *Stockholm Contributions to Geology* 25(1)8.

¹⁷⁴*Ibid.*, p. 13.

¹⁷⁵Norling E. 1981. Upper Jurassic and Lower Cretaceous Geology of Sweden. *Geologiska Foreningens i Stockholm Forhandlingar* 103:256.

¹⁷⁶Pozaryska W., Vidal G., and W. Brochwicz-Lewinski. 1981. New Data on the Lower Cambrian at the southern Margin of the Holy Cross Mts (SE Poland). *Bulletin de L'Academie Polonaise Des Sciences-Series des Sciences de la terre* XXIX(2)170.

¹⁷⁷Grigorovich A.S. *et al.* 1974. Experiment in investigation of nanoplankton from varicolored flysch in the zone of the Marmorosh Cliffs, Ukrainian Carpathians. *IG* 16:853.

¹⁷⁸Pocock S. 1972. Palynology of the Jurassic Sediments of Western Canada, Part 2. *Palaeontographica* 137B, p. 136.

¹⁷⁹Palford G. 1976. Plant microfossils from the Upper Devonian and Lower Carboniferous of the Canning Basin, Western Australia. *Palaeontographica* 158B, p. 54, 61.

¹⁸⁰Matsumoto T. 1978. Japan and Adjoining Areas (*in* Moullade M. and AE.EM. Nairn (1978) *The Phanerozoic Geology of the World* II, Part A, Mesozoic. El.), p. 92.

¹⁸¹Winslow M.R. 1962. Plant Spores and Other Microfossils from Upper Devonian and Lower Mississippian Rocks of Ohio. *US Geological Survey Professional Paper* 364, p. 1.

¹⁸²Barss M.S. 1972. A Problem in Pennsylvanian-Permian Palynology of Yukon Territory. *Geoscience and Man* IV, p. 70.

¹⁸³Budzinskiy Yu.A. and K.A. Belov. 1973, Absolute age of rocks in central part of the Caucasian Piedmont. *IG* 15:194.

¹⁸⁴Scott *et. al.* 1972. *op. cit.*, p. 892.

¹⁸⁵Tan J.T. 1980. Late Triassic-Jurassic Dinoflagellate Biostratigraphy, Western Arctic Islands, Canada. *Palaeontology* 4:253.

¹⁸⁶Canis W.F. 1968. Conodonts and Biostratigraphy of the Lower Mississippian of Missouri. *JP* 42:553-4.

¹⁸⁷Pashkov B.R. 1979. The Sarezk Series of the eastern part of the Central Pamir (Carboniferous-Upper Devonian). *IG* 21:53.

¹⁸⁸Miller R.H. 1972. Silurian Conodonts from the Llano Region, Texas. *JP* 46:556-64.

¹⁸⁹Muller H. 1966. Palynological Investigations of Cretaceous Sediments in Northeastern Brazil (*in* J.E. van Hinte, 1966. *Proceedings of the Second West African Micropaleontological Colloquium*. E.J. Brill, Leiden), p. 131, 134.

¹⁹⁰Jacobson S.R. 1979. Acritarchs as Paleoenvironmental Indicators in Middle and Upper Ordovician Rocks from Kentucky, Ohio, and New York. *JP* 53:1201.

¹⁹¹Smith D.G. 1981. Progress in Irish Lower Palaeozoic Palynology. *HP* 34:141-6.

¹⁹²Hexroad C.B., and L.V. Richard. 1965. Zonal Conodonts from the Silurian Strata of the Niagaran Gorge. *JP* 39: 1219.

¹⁹³Ethington R.L. and W.M. Furnish. 1962. Silurian and Devonian Conodonts from Spanish Sahara. *JP* 36:1259.

¹⁹⁴Wilkinson G.C., Bazley R.A.B., and M.C. Boulter. 1980. The geology and palynology of the Oligocene Lough Neagh Clays, Northern Ireland. *Journal of the Geological Society of London* 137:72.

- ¹⁹⁵Thompson T.L. and J.R. Sutterfield. 1975. Stratigraphy and Conodont Biostratigraphy of Strata Contiguous to the Ordovician-Silurian Boundary in Eastern Missouri. *Missouri Geological Survey Report of Investigations* 57(part 2), p. 70.
- ¹⁹⁶Barnes C.R. and M.L.S. Poplewska. 1973. Lower and Middle Ordovician Conodonts from the Mystic Formation, Quebec, Canada. *JP* 47:769, 789.
- ¹⁹⁷Loeblich A.R. and H. Tappan. 1978. Some Middle and Late Ordovician Microphytoplankton from Central North America. *JP* 52:1237.
- ¹⁹⁸Liebe R.M. and C.B. Rexroad. 1977. Conodonts from Alexandrian and Early Niagaran rocks in the Joliet, Illinois Area. *JP* 51:844.
- ¹⁹⁹Rexroad C.B. and J.B. Droste. 1982. Stratigraphy and Conodont Paleontology of the Sexton Creek Limestone and the Salomie Dolomite (Silurian) in Northwestern Indiana. *Indiana Geological Survey Special Report* 25, p. 4.
- ²⁰⁰Cramer E.H. Carmen M.D., and R.D.D. Cramer. 1972. North American Silurian Palynofossils and Their Spatial Arrangement: Acritarchs. *Palaeontographica* 138B, p. 146.
- ²⁰¹Mound M.C. 1968. Upper Devonian Conodonts from Southern Alberta. *JP* 42:459.
- ²⁰²Berg-Madsen V. 1981. The Middle Cambrian Kalby and Borregard Members of Bornholm, Denmark. *Geblogiska Foreningens i Stockholm Forhandlingar* 103:227.
- ²⁰³Konior K. 1980. W. Sprawie "dolnokambryjskiego" wieku niszczycielskiej utworów dolnodewonkich z górnolich wiercen obszaru Bielsko-Mogilany. *Kwartalnik Geologiczny* 24(5)501.
- ²⁰⁴Turner R.E. 1980. Ordovician Acritarchs from the Type Section of the Caradoc Series. *Palynology* 4:253.
- ²⁰⁵Konstantinovskiy A.A. 1976. Stratigraphy of Upper Precambrian and lower Paleozoic deposits of the Chersk Range. *IG* 18:1031.
- ²⁰⁶Kugler H.G. and C.M.B. Caudri. 1975. Geology and Paleontology of Soldado Rock, Trinidad (West Indies). *Eclogae Geologicae Helveticae* 68:29.
- ²⁰⁷Chaproniere C.C.H. 1981. Australasian mid-Tertiary larger foraminiferal associations and their bearing on the East Indian Setter Classification. *BMR Journal of Australian Geology and Geophysics* 6:147.
- ²⁰⁸Kecskemeti T. 1981. The Eocene/Oligocene Boundary in Hungary in the Light of the Study of Larger Foraminifera. *PA* 36:254.
- ²⁰⁹Bombita G. and A. Rusu. 1981. New Data on the Eocene/Oligocene Boundary in the Romanian Carpathians. *PA* 36:214-7.
- ²¹⁰Pflug A. 1963. Review of: *The Palynological Age of Diapiric and Bedded Salt in the Gulf Coastal Province* by Ulrich Jux.
- ²¹¹Sher A.V., Virina Ye. I. and V.S. Zazhigan. 1977. The Stratigraphy, Paleomagnetism, and Mammalian Fauna of the Pliocene and Lower Quaternary Deposits around the Lower Reaches of the Kolyma River. *Doklady Earth Science Sections* (English translations; hereafter abbreviated DE) 234:123.
- ²¹²Scandone P. et al. 1981. Mesozoic and Cenozoic Rocks from Malta Escarpment (Central Mediterranean). *AG* 65:1313.
- ²¹³Ehrlich A. and S. Moshkovitz. 1978. Distribution of Calcareous Nannofossils and Siliceous Microfossils in the Plio-Pleistocene Sediments of the Mediterranean Coast and offshore of Israel (a Preliminary Study). *Israel Journal of Earth Sciences* 27:66.
- ²¹⁴Shumenko S.I. 1973. Calcareous Nannoplankton from Cretaceous-Paleogene Boundary Beds of the Crimea. *DE* 209:72.
- ²¹⁵Baramov V.I., and L.L. Ankhadeyeva. 1968. A Palynological Description of the Pliocene around Kazan. *DE* 181:106.
- ²¹⁶Srivastava S.K. 1981. Evolution of Upper Cretaceous Phytogeoprovinces and Their Pollen Flora. *FP* 35:164.
- ²¹⁷Chilonova A.F. 1981. Senonian (Late Cretaceous) Palynofloral Provinces in Circumpolar Areas of the Northern Hemisphere. *RP* 35:322.
- ²¹⁸Malkov B.A. and V.A. Gustemesov. 1976. Jurassic Fossils in Kimberlite of the Olenek Uplift and Age of Kimberlite Volcanism in the Northeastern Part of the Siberian Platform. *DE* 229:67.
- ²¹⁹Brideaux W.W. 1971. Palynology of the Lower Colorado Group, Central Alberta, Canada. *Palaeontographica* 135:64-5.
- ²²⁰Tuchkov I.I. 1973. New Data on the Age of the Fresh-Water Sandstone Conglomerate Formation of the Aldan River Basin. *DE* 209:44.
- ²²¹Ryder R.T. and H.T. Ames. 1970. Palynology and Age of Beaverhead Formation and their Paleotectonic Implications in Lima Region, Montana-Idaho. *AG* 54:1167.
- ²²²Ebner F. 1980. Conodont Localities in the Surroundings of Graz/Styria. Second European Conodont Symposium-Ecos II. *Austria: Geologische Bundesanstalt Abhandlungen* 35:105-125.
- ²²³Lane H.R. 1974. Mississippian of Southeastern New Mexico and West Texas—A Wedge-on-Wedge relation. *AG* 58:279.
- ²²⁴Kedo G.I., Nelcayata N.S. and S.A. Kruehek. 1975. Redeposited Spores in Devonian Sediments of Belorussia. *DE* 225:74-6.
- ²²⁵Geobel E.D. 1968. Mississippian Rocks of Western Kansas. *AG* 52:1746-7.
- ²²⁶Boucot A.J., Hazzard J.C., and J.G. Johnson. 1969. Reworked Lower Devonian Fossils, Nopah Range, Inyo County, California. *AG* 53:163-7.
- ²²⁷Aristov V.A. and A.S. Alekseyev. 1976. Late Tournaisian Conodonts from the *Scalognathus anchoralis* Zone of East Kazakhstan. *DE* 229:231.
- ²²⁸Craig W.W. 1969. Lithic and Conodont Succession of Silurian Strata, Batesville District, Arkansas. *Geological Society of America Bulletin* 80:1627.
- ²²⁹Pantic N., Hochuli P.A., and A. Gansser. 1981. Jurassic palynomorphs below the main central thrust of East Bhutan (Himalayas). *Eclogae Geologicae Helveticae* 74(3)891.

(Continued on page 239)

CREATION, WHY AND HOW?

EVERETT H. PETERSON*

Received 29 September, 1980

In this article the question: Creation—Why? is examined; and it is concluded, among other things, that the second law of thermodynamics was put into operation as soon as Creation was complete. The question: Creation—How? is also examined; and it is suggested that one of the results of making creation subject to vanity (Romans 8:20) at the fall was radioactivity.

Introduction

This paper will examine and suggest answers to the following questions:

Is "perfect" synonymous with "very good"?

Creation—Why?, i.e., why did God create man? the earth? the universe?

*Mr. Everett H. Peterson's address is 918 Hummingbird Drive, San Jose, California 95125

What was the created life-span of the earth and the stars, i.e., how long would they remain in the "very good" condition in which they were created?

Were living creatures created with a body that was subject to death, i.e., mortal, or not subject to death, i.e., immortal? And was man on the same footing as other living creatures in this respect, or no?

When did the Second Law of Thermodynamics take effect?

Creation—How? Can we know anything about the methods and procedures God used in Creation?
When did radioactivity begin?

Very Good vs. Perfect

“And God saw everything that He had made; and, behold, it was very good!” (Genesis 1:31)

Very good. What does it mean? To me, it means no more and no less than that the finished creation was exactly what God had planned and designed it to be.

Many times the word “perfect” is used to describe the new creation. Does “perfect” say the same thing as does “very good”?

Consider these definitions of the word “perfect” as given by Webster:

1. Being entirely without fault or defect.
2. Satisfying all requirements.
3. Corresponding to an ideal standard.
4. Lacking in no essential detail.
5. Perfect implies the soundness and the excellence of every part, element, or quality of a thing frequently as an unattainable or theoretical state.

When one uses the word “perfect” to describe the new creation, which of these definitions does he mean? All these definitions imply that the one who describes something as being “perfect” knows exactly what is the ideal standard, what is essential and what are the requirements. Unless these things are described, the listener is left to form his own ideas about them. If we say, however, that the new creation was perfect for the purpose for which it was created, the listener will be directed back to the definition of “very good” and be forced to ask the question, what was God’s purpose, plan, and design in creation?

Creation—Why?

The design of the material universe was determined by the plans and purpose the Creator had for it. What was God’s purpose and plan in creation?

Consider these verses:

“We announce to you what we have seen and what we have heard, that you also may have fellowship with us. And truly our fellowship is with the Father and with His Son, Jesus Christ.” (I John 1:3)

“And if I go and prepare a place for you, I am coming again and will receive you to Myself, that where I am you may be also.” (John 14:3)

“But according as it has been written, “Eye has not seen and ear has not heard,” nor has it entered into the heart of man, “the things which God has prepared for those that love Him.” (I Corinthians 2:9)

Two words in these verses reveal, to me, God’s purpose in creating man: fellowship and love. Now, we all know that these two items cannot be commanded, forced, or bought. Rather, true fellowship and true love are gifts from those who freely choose to give them.

God, I believe we can say, created man because He desired someone in His presence who loved Him, and would fellowship with Him. God, however, cannot ob-

tain true love and fellowship by command, force, or price, any more than we can. As only those who love God will enter the fullness of His presence and partake of the things He has prepared, it was necessary for Him to place man in a temporary location until the man made his choice whether or not to love God. Consequently, the earth was created to provide this temporary location.

The original earth had to be designed with three factors in mind; first, it was to be temporary; second, it had to be constructed so as to retain the “very good” condition in which it was created until it had served its original purpose should man choose to love God; and third, if man chose not to love God, and God chose to change the “very good” condition of the earth, it had to be constructed so as to allow Him to do so while man was still living on it.

We have seen that God created man to fellowship with Him, and He created the earth to serve man. Why did He create the vast multitude of heavenly bodies?

It is not likely that we can know all of God’s purposes for the stars but we do know that they are for “signs and for seasons and for days and years.” (Genesis 1:14) They also exist to “declare the glory of God and show His handiwork.” (Psalm 19:1)

The Universe’s Life-Span

We have seen that the purpose of the originally created material universe was to provide a temporary home for man. What lifespan did God give it?

The present, generally accepted theory of how the sun and stars produce their energy is by nuclear fusion. If that is correct, the life-span of the sun and stars would be measured in the billions of years.¹

There is evidence, however, that the energy of the sun and stars is produced by contraction. If that is correct, the life span of the sun and stars would be measured in the millions of years.²

Either way, the sun and stars, which started using up their energy the moment after they were created, would eventually use up all their energy and then would cease giving out light.

The earth, also, had been given a limited amount of time in which it could remain in its original “very good” state. This is indicated in Genesis 2:10, “And a river went out of Eden to water the garden.”

As there was no rain in those days (Genesis 2:5) the river had to be supplied by a pressurized subterranean water reservoir. There was no natural way the surface water could re-enter the pressurized reservoir and therefore the time would come when it would be empty. With no more water to water the earth, vegetation and land creatures would die.

The present amount of surface water on the earth is approximately 350 million cubic miles. If 300 million cubic miles of that were originally in the subterranean water reservoir, and the original land area was one-half the earth’s surface, i.e., 100 million square miles, and the rivers poured forth enough water to cover that land area to a depth of 12 inches a year, it would take just under 16 thousand years to empty the reservoir.

The human race itself had only a limited time in

which to enjoy the "very good" condition of their surroundings. God commanded the first human couple to "be fruitful and multiply and fill the earth." (Genesis 1:28) The question that comes to mind is, "What would happen when the earth was full?" If things continued as they had, overpopulation would occur resulting in a deterioration of the environment. This would have made it impossible for the earth to still be called "very good".

God, however, had only commanded mankind to "fill the earth". I believe that when all the people that God wanted in His presence for eternal fellowship had been born, He then would have taken them to be with Him. He would have given them bodies that could live in His glorious Light, and would have remade the universe into a permanent, eternal state.

What the population growth rate would have been if man had not sinned, is, of course, unknown. As there would have been no human deaths, a doubling of the population every 10 years would have been easily achieved, reaching a population of 8 billion in 320 years. There was no need, however, for haste, so perhaps it would have taken up to two thousand years to "fill the earth". The point is, that God's purpose for the original earth would have been fulfilled long before the sun quit giving light and before the rivers of the earth stopped flowing.

Living Creatures

Did God create living creatures with bodies that were subject to death, i.e., mortal, or with bodies that were not subject to death, i.e., immortal?

God created food for the creatures to eat, air for them to breath, and periods of darkness for sleep. Were these things necessary to maintain life? Would the creatures have died if any or all of them were withheld? If so, then they had mortal bodies. If, however, they had immortal bodies, what was the purpose of food, air, and sleep?

An indication that animals would have died, i.e., were mortal, is in God's command to Adam and Eve to "be fruitful and multiply and fill the earth". (Genesis 1:28) God also gave the command to "subdue" the earth. (Genesis 1:28) Two people alone could not fulfill the demands of that command. Therefore I believe that God filled the earth, at creation, with animals which would keep the earth "subdued". Each animal had its own food preference and its own size of appetite. By eating, they all together would "dress" and thus subdue the earth as Adam was to "dress" and thus subdue the garden. Some animals would always be around to assist man in the job of subduing the earth, but as the human population grew, the animal population would decline. If it didn't, man could not have fulfilled his command to fill the earth. For the animal population to decline, it was necessary for animals to die.

That man too had a body subject to death is indicated by the existence of the Tree of Life. When man did sin God said,

"Behold, the man has become as one of us, to know good and evil. And now, lest he put forth his hand and take also from the tree of life, and eat and live forever—therefore Jehovah God sent him out of the

garden of Eden. . . and he placed the cherubim . . . and . . . sword . . . to guard the way of the tree of life." (Genesis 3:22, 23)

In God's own words we are told that the fruit of the Tree of Life had the power to prolong human life. If it had that power after man sinned, it must have had that power before man sinned, and would have kept man alive until the earth was full. Because man sinned God prevented him from eating the fruit of the Tree of Life, and therefore he died when his created life span was reached.

Another indication, to me, that death of living creatures was part of God's original plan, is in the commands He gave to the creatures of the sea. God said, "Be fruitful and multiply, and fill the waters in the seas." (Genesis 1:22)

To prevent overpopulation, sea creatures would have to be continually dying to make room for the new ones.

The Second Law

From all the foregoing, I conclude that the Second Law of Thermodynamics was part of God's original design for the universe and was in operation from Creation on.

The Second Law is a statement of the fact that all of man's observations show that the universe is decreasing in complexity and in availability of energy.

It has been noted that conditions in the original universe met both of the requirements of the above statement. Man's and animals' energy was continually running down and therefore it was necessary for them to eat. Vegetation continually needed sunlight to continue functioning and the sun was using up its energy in producing light. The rivers of the earth also had a limited life. These things all demonstrate that from the beginning there was a continual decrease in the availability of energy.

Adam's job was to dress the garden. Man and animals were constantly giving off body wastes. Animals were continually dying. What happened to the vegetation trimmings, the body wastes, and the dead bodies? If they had not decayed, things would have become rather messy.

Decay is the process of complex molecules breaking down into simpler ones. Decay must have been taking place and thus there was a continual decrease in complexity.

It appears that the Second Law is just the orderly way to operate a temporary universe.

Creation — How?

When man sinned God made a tremendous change in the whole creation.

"For the creation has been made subject to vanity (not of its own will but because of Him who made it subject)." (Romans 8:20)

In what way was every atom made subject to vanity?

Before I suggest an answer to that question, let us look at what has been revealed to us about the process of creation.

1. Matter was not made from pre-existing matter.

"Through faith we understand that the worlds were

framed by the word of God, so that things which are seen were not made of things which do appear." (Hebrews 11:3)

2. Creation was instantaneous.

"For He spoke, and it was done: He commanded, and it stood fast." (Psalm 33:9)

"And God said, let there be light: and there was light." (Genesis 1:2)

3. The Voice of God and the Hands of God were both instruments of creation.

"For He spoke" "He commanded" (Psalm 33:9)

"And God said . . . (Genesis 1:2)

"The heavens declare the glory of God and the expanse shows His handiwork." (Psalm 19:1)

"When I contemplate Your heavens, the work of Your fingers," (Psalm 8:3)

"You made him rule over the works of Your hands," (Psalm 8:6)

The voice was the voice of God the Father and the Hands were the hands of God the Son who is also called the Word.

"In many places and in many ways God has spoken in times past to the fathers in the prophets—in these last days He has spoken to us in the Son, whom He has appointed heir of all things—by whom also He made the worlds." (Hebrews 1:1, 2)

"In the beginning was the Word, and Word was with God, and Word was God All things came into being through Him. And without Him not even one thing was made that has come into being." (John 1:1, 3)

4. The famous formula $E=mc^2$ informs us that matter is made of energy. The only energy there is, is God's energy. All matter, therefore, is made from God's energy.

"For the invisible things of Him from the creation of the world are clearly seen, being understood by the things that are made, even His eternal power (i.e., energy) and Godhead; so that they are without excuse." (Romans 1:20)

The order of creation, then, must have been this: when God the Father spoke, God the Word took some of the Godhead's eternal power, i.e., energy, in His hands and squeezed it into atoms, using them to form whatever it was that God the Father had called for.

Atoms

"One of the unsolved problems in physics is the nuclear force, the force that holds the nucleus together."³

Physicists have pondered on this problem for a long time and now have proposed a couple of different solutions for it. Barnes has put forth a new model of the proton which,

"consists of a spinning sphere of extremely small radius and extremely high perimeter speed, speed exceeding the speed of light The result is a large magnetic flux and an intense magnetic field. This field provides binding force attraction between protons."³

Other physicists are thinking along different lines.

"The gluon is conjectured to bind together the particles called quarks, thereby forming protons, neutrons, pions and all the other entities that are classified as hadrons, or strongly interacting particles. The adhesive strength of the gluon is thought to be so great that a quark cannot be extracted from a hadron no matter what force is brought to bear on it In some respects the gluon is similar to the photon both can be regarded as the agents of fundamental forces in nature."⁴

God the Son, who squeezed eternal energy into mass, is the "fundamental forces in nature", and it may be that spinning protons or gluons are His "agents". However, no matter how the atom is held together, He is the ultimate cause.

"By Him all things consist," (i.e., hold together) (Colossians 1:17)

Radioactivity

Earlier the question was asked, "In what way was every atom made subject to vanity?" Now, I suggest the following answer.

When God the Son squeezed energy into atoms, he squeezed and held the atom so tightly that there were no unstable elements and therefore no radioactivity. At the Fall, He relaxed His grip slightly—or slightly reduced the speed of the spinning protons—or took away some adhesive strength from the gluon, which affected every atom and allowed some to become unstable, i.e., radioactive.

The Pleochroic Halo, I believe, is evidence for the merit of the above suggestion.

" 'pleochroic halos' are best described as spheres of concentric discolorations of the rock surrounding a small particle inclusion Examination of the halos has led to an explanation involving radioactive decay. Alpha particles from radioactive elements in the inclusion have discolored the rock and formed the halo The startling halos are daughter elements in a series in which the parent elements are completely absent. This carries the first implication that the daughters were produced in the primary generation (creation) of the rocks, rather than by a process of radioactive decay These halos are typically polonium 218 signatures The very startling thing is that the half-life of polonium 218 is 3 minutes In twenty half-lives the concentration would be down by a factor over one million, which for polonium 218 is one hour."⁵

If some elements became radioactive as soon as they were created, and a few elements decayed within an hour of their having been made, could God have pronounced everything, "very good"? It seems reasonable to me, that radioactive decay was one of the results produced at the Fall, when God made every atom "subject to vanity".

A New Model

In view of the foregoing, I suggest a model for the newly created earth.

(Continued on page 243)

ELECTROMAGNETICS AND THE APPEARANCE OF AGE

GLENN R. MORTON*

Received 31 March, 1981

Creationists have discussed how the light from distant stars, created only a few thousand years ago, could be reaching us. An analogous question is why no radioactive isotopes with half-lives less than many millions of years exist naturally; apparently if any ever existed they have decayed.

Again, while it is no doubt true that there are many sources of error in radiometric dating, yet there seems to be a certain consistency in giving long ages. Creationists need to investigate all of these matters carefully.

In this article it is proposed that a change in the electrical forces associated with elementary particles, possibly at the time of the Flood, may provide a Creationist explanation for all of these points.

The problem of the appearance of age has vexed creationists ever since secular science accepted the old age of the earth. The accepted explanation for apparent age in creationist circles is given by Whitcomb and Morris¹. They argue correctly that since plants needed a soil in which to grow, the earth would appear to be as old as the soil appears to be in spite of the fact that the earth was only a few days old. Following this same line of reasoning necessitates that Adam and Eve were created fully-grown since they would have to take care of themselves. This view could be called age by necessity, since surely God would not create plants with no soil to plant them in.

Age by necessity seems not to be applicable to all indicators of age. There is little apparent necessity for creating radioisotopes with the appearance of age. Neither is there any apparent necessity for the ratios of parent to daughter isotopes in radioactive elements to appear old. In the dating processes, there is a trend for the determined age to get older as the expected age gets older. This systematic portion of the dating process has never received an explanation by a creationist to my knowledge.

Another problem area for the creationist is the apparent age of the universe based upon how long it takes for the light from distant stars to reach the earth. This too needs a consistent creationist explanation. Although Akridge's brilliantly argued case for the creation of the light everywhere in the universe may be correct², it is this author's opinion that a change in the speed of light might be more satisfactory.

Therefore this article will examine the problem of age and how it is affected by a change in the permittivity of free space, the constant which relates electrical force to electrical charge.

Three areas will be examined: the appearance of age in the natural existence of radioisotopes, the radioactive dates and the light from distant stars.

The Missing Isotopes

One of the rules of thumb for radioactive dating is that the method is unusable after the isotope has gone through approximately ten half lives. After an object to be dated is that old less than one atom in a thousand of the original supply of the isotope involved is still in existence. This makes the measurement of the ratio of the parent-daughter nuclides very difficult and thus the

date arrived at very uncertain. After twenty half lives less than one-millionth of the original atoms is present, making even the detection of the original element very difficult.

Creationists believe that the earth is relatively young as compared to the approximate 4.5 billion year age held by the uniformitarianists. Assuming for the moment that the earth is young, say 7000 years old, and assuming that after 10 half lives a radioisotope becomes undetectable by present day instruments, then creationists should expect that isotopes whose half lives are greater than 700 years would still exist, if God created them. On the other hand, uniformitarianists should expect that no isotopes with half lives less than 450 million years exist. After this amount of time those isotopes should be extinct.

Of the approximately 1400 radioisotopes, only about 75 have half lives longer than 700 years. Some of these are continuously being formed by the nuclear decay of other longer-lived elements, such as Radium 226 which is formed by the decay of uranium 238. Carbon 14 is continually being manufactured by nuclear processes in the atmosphere. Isotopes like these will not be considered in this paper since there are always new additions to the population of atoms.

In this author's opinion one of the strongest evidences which uniformitarianists have for their belief a 4.5 billion year old earth can be seen in Table 1. Listed in increasing length of the half life are all of the isotopes with half-lives greater than 700 years which are not being formed by natural processes today. Also listed is the type of decay and the percentage of natural occurrence. As can be seen no isotope exists with less than a 450 million year half-life while *all* isotopes exist above this half life. If plutonium-244 existed at the time of the earth's formation then it should still exist if that formation was only a few thousand years ago. On the other hand if the earth were 4.5 billion years old then plutonium-244 would have gone through 50 half lives leaving only 1 atom out of every 6 quintillion atoms originally created. This would be totally undetectable by present instruments. Thus, on this point uniformitarian theory fits the facts better than creationist theory as currently formulated.

A Creationist is left with only three possibilities if he wishes to retain the idea of a young earth. First, one can assume that God didn't create these isotopes which are missing. This would seem to strain credibility, in light of the fact that every isotope over 450 million years does indeed exist. One could attempt to explain this

*Mr. Glenn R. Morton's address is 3313 Claymore, Plano, Texas 75075.

Table 1. Radioactive isotopes with half-lives greater than 650 years. β^- indicates beta decay, β^+ positron decay, and EC electron capture, all of which are somewhat similar. Likewise alpha decay, indicated by α , and spontaneous fission, indicated by SF, are somewhat similar.

The per cents for uranium 235 and 238 are from the *Handbook of Chemistry and Physics*, 47th edition, The Chemical Rubber Co., 1966; while that for lanthanum is from the 60th edition. That for thorium is from Semat, H., 1954. *Introduction to Atomic and Nuclear Physics*, Rinehart and Co., New York, p. 528. Other data are from the 58th edition of the *Handbook of Chemistry and Physics*.

I have not been able to find any information about the type of decay of zirconium 96.

Isotope	Half-life Years	Decay- type	% natural Occurrence
Si ³²	6.5×10^2	β^-	0
Cf ²⁵¹	8×10^2	α	0
Ho ¹⁶³	1×10^3	EC	0
Tb ¹⁵⁸	1.2×10^3	EC, β^-	0
Bk ²⁴⁷	1.4×10^3	α	0
Cm ²⁴⁶	5.5×10^3	α , SF	0
Pu ²⁴⁰	6.5×10^3	A, SF	0
Th ²²⁹	7.3×10^3	α	0
Am ²⁴³	7.3×10^3	α	0
Cm ²⁴⁵	9.3×10^3	α	0
Cm ²⁵⁰	1.7×10^4	SF	0
Nb ⁹⁴	2×10^4	β^-	0
Pu ²³⁹	2.4×10^4	α , SF	0
La ¹³⁷	6×10^4	EC	0
Se ⁷⁹	6.5×10^4	β^-	0
Ni ⁵⁹	8×10^4	EC	0
Ca ⁴¹	8×10^4	EC	0
Sn ¹²⁶	1×10^5	B ⁻	0
U ²³³	1.6×10^5	α	0
Kr ⁸¹	2.1×10^5	EC	0
Tc ⁹⁹	2.1×10^5	β^-	0
Fe ⁶⁰	3×10^5	β^-	0
Pb ²⁰²	3×10^5	EC	0
Cl ³⁶	3.1×10^5	β^- , B ⁺ , EC	0
Bi ²⁰⁸	3.7×10^5	EC	0
Pu ²⁴²	3.8×10^5	α	0
Cm ²⁴⁸	4.7×10^5	α , SF	0
Al ²⁶	7.4×10^5	B ⁺ EC	0
Dy ¹⁵⁴	1×10^6	α	0
Zr ⁹³	1.5×10^6	β^-	0
Tc ⁹⁸	1.5×10^6	B ⁰	0
Mn ⁵³	2×10^6	EC	0
Gd ¹⁵⁰	2.1×10^6	α	0
Np ²³⁷	2.1×10^6	α	0
Be ¹⁰	2.5×10^6	β^-	0
Tc ⁹⁷	2.6×10^6	EC	0
Pd ¹⁰⁷	7×10^6	B ⁻	0
Hf ¹⁸²	9×10^6	β^-	0
Cm ²⁴⁷	1.6×10^7	α	0
I ¹²⁹	1.7×10^7	β^-	0
U ²³⁶	2.4×10^7	α SF	0

Pb ²⁰⁵	3×10^7	EC	0
Sm ¹⁴⁶	7×10^7	α	0
Pu ²⁴⁴	8×10^7	α , SF	0
U ²³⁵	7.1×10^8	α	.72
K ⁴⁰	1.3×10^9	B ⁻ , β^+ , EC	.118
U ²³⁸	4.5×10^9	α	99
Th ²³²	1.4×10^{10}	α	100
Lu ¹⁷⁶	3×10^{10}	β^-	2.6
Re ¹⁸⁷	7×10^{10}	β^-	62.5
Sm ¹⁴⁷	1×10^{11}	α	15
La ¹³⁸	1×10^{11}	EC, β^+	.089
Rb ⁸⁷	$t \times 10^{11}$	β^-	28
Pt ¹⁹⁰	6×10^{11}	α	.0127
Ta ¹⁸⁰	1×10^{13}	EC, β^-	.0123
Sm ¹⁴⁸	1.2×10^{13}	α	11
Te ¹²³	1.2×10^{13}	EC	.87
Gd ¹⁵²	1.1×10^{14}	α	.2
Sm ¹⁴⁹	4×10^{14}	α 14	
Pt ¹⁹²	1×10^{15}	α .78	
Hf ¹⁷⁴	2×10^{15}	α	.18
Nd ¹⁴⁴	5×10^{15}	α	24
V ⁵⁰	6×10^{15}	EC	.24
Zr ⁹⁶	$> 3.6 \times 10^{17}$	—	2.8

teleologically by saying that God didn't think these isotopes would be helpful, but this is merely putting thoughts into God's mind which are not revealed to us in scripture. Why would God create the isotopes so that a young earth would have the appearance of great age and if He did this would it not be possible to charge God with being deliberately deceptive?

The second possibility is to find an independent cause for each isotope which would change the half-lives. This would require many different causes, one for each isotope, and this would also strain credibility since the longer lived isotopes all exist.

The final possibility is that there was in the past a systematic change in all half lives so that the half lives we now use are not at all applicable. For instance, if the rates of *all* radioactive decay was faster in the past, then using the present rates of decay everything would appear older than it really is. Whatever this cause for the change in the rate of decay was, it must be able to affect not only alpha-decay but also beta-decay. Alpha-decay is basically caused by the fact that the electrostatic repulsion of the protons in the nucleus of larger atoms is great enough to be nearly equal to the strong force which holds the nucleus together. If either the permittivity of free space was smaller before the flood or the electric charges of elementary particles were greater at that time, then the force of repulsion within the nucleus would have been greater than it is today since the force depends inversely in the permittivity and the probability of alpha decay correspondingly greater. This would mean that the half life of all alpha emitters would have been shorter, explaining the missing alpha-emitters.

Beta-decay and electron capture are related types of decays. In beta emission, the nucleus spontaneously expels an electron from a neutron. The neutron is changed

into a proton, which changes the atom into another element. Positron decay is similar to beta decay except that the particle emitted is a positively charged electron, an anti-electron. Electron capture occurs when an electron falls into the nucleus and a proton is changed into a neutron. All three of these processes are governed by the weak force. As is shown in the Appendix, the decay constant is related to the permittivity by $\lambda \propto 1/\epsilon_0^2$ where λ is the decay constant and ϵ_0 is the permittivity.

Therefore if the permittivity had been smaller in the past then the decay rates would have been faster meaning that many short-lived isotopes would have become extinct in a very short time.

Radioactive Dating

The usual approach to the dating problem is to examine the assumptions which go into the radioactive dating methods and explain why the method won't work. Others scan the literature and find cases where radioactivity fails to yield a proper age, contending that these show the failure of the method. Neither of these approaches is entirely satisfactory in explaining all of the facets of the dating problem. These approaches do not explain why the radioactive dates generally get older with increasing depth in stratigraphic position.

Figure 1 is a graph produced from data listed in a recent article about radioactive dating. The author specifically edited his literature search to include only those dates which approached being 20% wrong. Woodmorappe says:

"Many other dates could have been listed, but Table 1 is limited to dates which approach 20% discrepancy: being either 20% 'too young' or 'too old' for their biostratigraphic positions."³

The data in Figure 1 are the values given by Woodmorappe; except that where he gives several values for the same object, they are averaged to obtain one value. As can be seen there is a general trend in the scatter of value in which the radioactive age gets older as the expected age gets older.

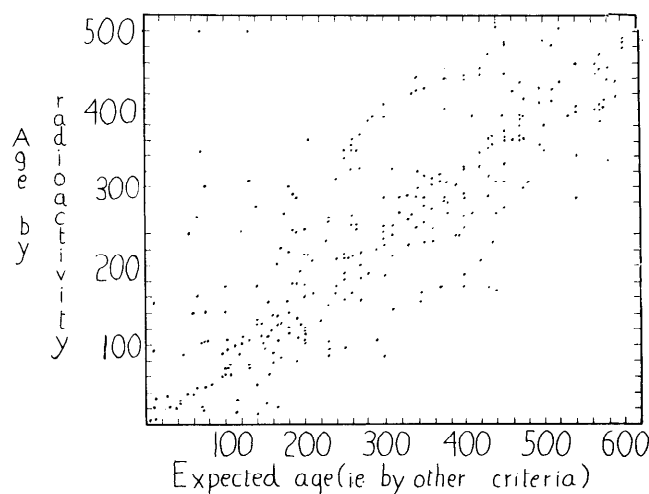


Figure 1. This shows the ages determined by radioactivity vs. those expected on other grounds e.g. from stratigraphy, for many samples. Both ages are in millions of years. There seems to be a certain correlation.

The scatter which is seen in Figure 1 is generally used by creationists to illustrate how poorly the dating processes work. However, the scatter is generally believed by uniformitarianists to be caused by poorly met initial conditions. For instance, the potassium-argon method assumes that all the argon escapes from the molten rock before it cools. If some is trapped, then the rock dates older. If some escapes after the rock cools, due to weathering or fracturing, then it will date younger. These are perfectly logical events which should be expected to occur under natural conditions. Similar scenarios are applicable to other dating techniques. Thus the scatter in the data is to be expected since nearly nothing in nature is as simple as the theories of man would make it. Because of this, creationist attempts to discredit the dating techniques, based upon the normal *expected* scatter in the data, carry little weight with our uniformitarian colleagues familiar with the dating processes. *Time* magazine attacks creationists on this point. They say,

"The creationist argument is a bit like claiming that because some trains are canceled or run way off schedule, the basic timetable is totally inaccurate."⁴

In some sense they are correct. Therefore it is the broad trend illustrated in Figure 1 which must be explained.

If the sediments are the result of a world-wide flood, then the lava flows which were intermixed with the sediments, dated and then listed by Woodmorappe, were also deposited during a historically brief period of time. If this is so then why do the radioactive ages correlate with the expected age? Or to pose the question from a creationist position, why do the radioactive ages of lava beds laid down within a few weeks of each other differ by millions of year?

If, as already suggested, the permittivity and the decay constants gradually changed in value, then the correlation may have a creationist explanation. If the decay constant were changing linearly, a proper alteration to the exponential law of decay would be (see Appendix 2), $N = N_0 \exp(-\lambda_1 t - \lambda_0 t^2/2)$ where λ_1 is the initial decay constant before the permittivity began to change, λ_0 is the time rate of change of the decay constant, t is the time since the bed was laid down and is therefore the true age of the bed, N_0 is the number of atoms of the parent isotope initially and N is the number left after time t . An ideal initial condition is $N = N_0$ when $t = 0$.

As shown in the previous section, in order to explain the isotope distribution one must assume that the rates of decay were faster in the past than they are now. Taking an hypothetical isotope with a current half-life of 450 million years as the shortest lived isotope which could exist, then the decay constant would be⁵ $\lambda_f = 0.693/T = 4.884 \times 10^{-17}$, where λ_f is the current decay constant and T is 450 million years measured in seconds.

If we assume that the ten half-lives had to be accomplished within the 1656 years between the creation and the flood and recalling that ten half-lives is our existence cutoff point then, one half-life is 165.6 years;

and the relation stated above gives $\lambda_1 = 1.327 \times 10^{-10}$ /sec. The preflood decay constant for our hypothetical isotope would be seven order of magnitude greater than its post-flood value.* $\lambda_0 = (\lambda_f - \lambda_1)/\Delta t$ where Δt is the time over which the change occurred.

Substituting the above determined decay constants into the above relation and assuming that all of the change occurred over 420 years, then $\lambda_0 = 1.003 \times 10^{-20}$ /sec².

Consider two lava flows, one of which occurred the day the earth was created and the other the day the flood began. We will assume that the chemical fractionation processes worked perfectly so that the daughter atoms were removed from the lava prior to the flow. This means that $N = N_0$ at $t = 0$. At the end of the period over which the permittivity changed, the first bed would contain only 4 ten thousandths of the original atoms while the second bed would still retain 42% of the parent atoms. The uniformitarianist who knows nothing about catastrophes, would use the present post-flood decay rates when he dates these two beds. Under that assumption, the uniformitarianist would date the first bed as being 5.07 billion years old and the second bed would date at 570 million years old. The true difference in age is 1656 years.

The fascinating feature of these two dates is that the amount of change in the decay rate, which was determined strictly from the isotope distribution, can be used to determine two dates which correspond to the uniformitarian age of the earth *and* the uniformitarian age of the Cambrian-Precambrian unconformity. This unconformity is a worldwide break in the deposition of sedimentary rocks. This author believes that this worldwide erosional period seen in the geologic record represents the onset of the flood. 570 million years is the currently accepted age of this unconformity. The presently accepted age of the earth is of the order of 4.75 billion years, which is very close to the 5.07 billion derived here.

Table 2 illustrates the chronology which this view would require. In the first column are the years since creation for the births of various individuals, as calculated from the Genesis account. The true age is given in column 3 and it assumes that the Flood occurred 4330 years before present *and* that Arpachshad was born three years after the *start* of the Flood. The radioactive age is the age which a uniformitarianist would calculate using the assumptions which he would normally use.

The novel and probably the most controversial part of this dating scheme and its involvement with the Flood is that the "Flood" would have had to have lasted longer than 1 year. Noah would have been off of the ark before the entire Cambrian was deposited; Peleg would have lived in "Devonian" times while Terah would

Table 2: A suggested chronology for the early chapters of Genesis, which, for the most part, follows, or is close to, Ussher's.

The true ages were calculated on the assumption that the flood occurred in 2349 B.C., and that Arpachshad was born two years after the *end* of the flood.

In the column of radioactive ages, "B" indicates "billions"; "M", "millions".

Time Since Creation	Birth of	True Age Before Present	Radioactive age
0	Adam	5986	5.07 B
130	Seth	5856	4.71 B
235	Enosh	5751	4.43 B
325	Kenan	5661	4.18 B
395	Mahalalel	5591	3.99 B
460	Jared	5525	3.81 B
622	Enoch	5364	3.38 B
687	Methuselah	5299	3.20 B
874	Lamech	5112	2.69 B
1056	Noah	4930	2.20 B
1556	Shem, Ham, Japheth	4430	841 M
1656	(The Flood)	4330	570 M
1659	Arpachshad	4327	561 M
1694	Shelah	4292	471 M
1724	Eber	4262	400 M
1758	Peleg	4228	326 M
1788	Reu	4198	268 M
1820	Serug	4166	211 M
1850	Nahor	4136	164 M
1879	Terah	4107	158 M
1949	Abram	4037	52 M
2049	Isaac	3937	2 M

have walked in both the "Cretaceous" and the "Tertiary".

Is this view reasonable? There are several facts which favor it. First, it would explain why at Glen Rose, Texas, human footprints are found with dinosaurs. Both seismic studies and oil wells show that there are several thousand feet of sediments under the Glen Rose site which would have had to have been deposited by the Flood before this man took his walk. If these sediments had been deposited within the previous few months, how did this man survive the Flood's onslaught? How did he get food to eat at a time when everything outside the ark was supposedly covered with water?

If this man represented one of the first pioneers in Texas after the flood, then the problem of where he lived for the first few months of the flood can be avoided.

This chronology can also explain why we find successive beds in the geologic records which contain large numbers of mollusks. (See Figure 2) If all of the sediments were simply dumped onto the ocean bottom then all of the ocean bottom creatures should occur within one well defined zone. Deposits like the one illustrated in figure two seem to indicate that there was

*The question has been raised, whether this would not have meant a fatal level of radioactivity from the surroundings. I suggest that it could have been mitigated by two circumstances: in the first place that the surface was shielded by great depths of loose soil, which many believe, on other grounds, existed before the Flood; and in the second place that the difference in the permittivity made chemical bonds stronger, and less vulnerable to radiation.

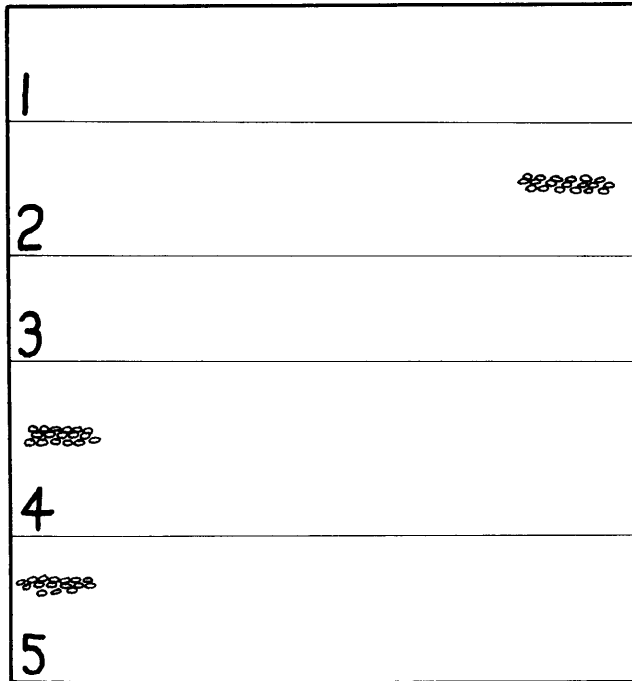


Figure 2. This shows a rather common situation where strata contain beds of fossils. Many fossils, e.g. hundreds of thousands of oysters, may be found in one stratum, and then more of the same species in a different stratum, and several miles (which the horizontal extent of the Figure indicates) away. The numbers indicate the different strata.

If the Flood lasted only one year, why should so many oysters of the same species be found in successive (or even more widely separated) beds? Surely in one year they could not have reproduced to such an extent.

enough time for the population to be replenished before more sediment was rained down on the area.

If the majority of the sediments were deposited after Noah left the ark, it would explain why the fossil animals and plants get more modern in younger strata. Percentage-wise there are more extant species fossilized in younger strata and this percentage gets larger the younger the sediment is. The earth during this time would still be undergoing earthquakes, tsunamis etc. and plants and animals living near the sea shore would be likely to get entombed in the sediments of some postflood catastrophe of local extent.

The mammoth frozen in Siberia could also be understandable. They too are only shallowly buried; but they are underlain by several thousand feet of sediments. If they were a preflood phenomena, where did they live during the first part of the flood while the underlying sediments were being deposited?

This chronology makes it seem likely that Noah and his descendants lived in highland areas during the period in which the flood waters gradually abated. Occasionally, local catastrophes would entomb an individual, or preserve evidence of human existence, e.g. footprints. In time the earth settled down to the relatively peaceful place in which we live. This is interpreted in what follows to mean that the permittivity stopped changing.

No claim is made that the linear variation is the only

one which could be suggested or used. But certainly the general trend of the data shown in Figure 1 needs explaining rather than being explained away.

Light and the Appearance of Age

Creationists have long puzzled over how the light from distant stars and galaxies has reached the earth within the few thousand years given in most Christian cosmologies. One of the implications of a change in the permittivity of free space is that the speed of light would have been considerably faster before the flood. This is because $c = (\epsilon_0 \mu_0)^{-1/2}$ where c is the speed of light, ϵ_0 is the permittivity and μ_0 is the permeability. Since $\lambda \propto 1/\epsilon_0^2$ as is shown in the Appendix, $\lambda_f/\lambda_i = (\epsilon_{0i}/\epsilon_{0f})^2$. Here λ_i is the preflood decay constant, λ_f is the postflood decay constant, ϵ_{0i} is the preflood permittivity and ϵ_{0f} is the postflood value.

Substituting the values of the decay constants derived above and the present value of the permittivity, 8.85418×10^{-12} , into the above equation we find that the preflood value of the permittivity was 5.3715×10^{-15} . Assuming that only the permittivity changed, then the velocity of light before the Flood would have been 40.6 times the present. If the earth were about 6,000 years old, light from about 77,000 light years away would have had time to reach the earth since creation.

Although this author does not wish to add any further assumptions to the theoretical framework outlined here and in other articles, it is interesting to note that if one assumed that both the permeability and permittivity changed by a similar amount the distance that light could travel within the few thousand years of creation becomes enormous. Light from a galaxy 3.08 million light years away would have had time to reach the earth.

Conclusions

The hypothesis of a change in the permittivity will effectively explain the appearance of age in the three problems discussed. Should this hypothesis ultimately fail the test of time, other solutions to these problems should be sought. Creationists can no longer afford either to ignore our own problems or to simply explain away the evidence which supports the evolutionists' position. We must provide positive explanations of the phenomena observed on the earth which at the same time preserve the Biblical record in its entirety. These explanations must be as quantitative as they can be. Qualitative explanations should be minimized. By formulating a quantitative theory of the flood creationists can compete with the uniformitarianist on a firmer scientific base.

The results outlined above have implications which are applicable to a creationist form of radiometric dating. The assumption which this author has made, namely that the decay constant has changed with time, is no better nor worse than the uniformitarianist assumption that they have remained unchanged. By utilizing this assumption creationists can radiometrically date any object desired and the object will always fit into a creationist time-frame.

Appendix 1: on the Rate of Radioactive Decay

While some theory exists, particularly for beta decay⁶, the subject is an involved one. Here dimensional analysis can be used to find the dependence on ϵ_0 , which is all that is needed.

It appears that, of the various atomic constants, λ , the coefficient, might depend on ϵ_0 , and also on Planck's constant h , m the electronic mass, and q the elemental charge. It can be shown to depend in the form $\epsilon_0^a h^b q^c m^d$, the exponents being integers.

In terms of the four fundamental dimensions (temperature is not involved here): length, mass, time, and charge: L , M , T , and Q respectively, ϵ_0 has the dimensions $L^{-3}M^{-1}T^2Q^2$, while h has L^2MT^{-1} . Of course, q and m give just Q and M , respectively.

So the dimensions take on the form: $(L^{-3}M^{-1}T^2Q^2)^a (L^2MT^{-1})^b Q^c M^d$. And this is to give λ , which has dimensions of inverse time: T^{-1} . So clearing the brackets and equating the exponents on the two sides gives:

$$\begin{aligned} -3a + 2b &= 0 \\ -a + b + d &= 0 \\ 2a - b &= -1 \\ 2a + c &= 0 \end{aligned}$$

These equations are solved easily; and they give, in particular, $a = -2$. So λ is proportional to $1/\epsilon_0^2$.

The author will be glad to provide a copy of a more detailed treatment of beta decay to anyone interested.

Appendix 2: the Equation of Decay

In the equation of decay, $dN/dt = -\lambda N$, a solution is still possible if λ varies with time. Dividing through by N and integrating both sides gives $N = N_0 \exp(-\int \lambda dt)$.

If one sets $\int \lambda dt = \Lambda T$, then $N = N_0 \exp(-\Lambda T)$. Here Λ is an average constant of decay over the time involved, and T the total time.

In every case N_0 represents the original amount of radioactive material, N the amount undecayed at the end of the time concerned.

If the linear case be considered, so that $\lambda = \lambda_1 - \lambda_0 t$, then $\Lambda T = \lambda_1 T - \lambda_0 T^2/2 = [1/2] [\lambda_1 + (\lambda_1 - \lambda_0 T)] T$; so Λ is the (arithmetical) average of λ at the beginning and at the end of the time concerned.

For the isotopes considered here, decay in the time from the end of the period of change until the present would be negligible. So times subsequent to that, i.e. roughly the last 4,000 years, need not be taken into account.

As for material originating a time t' , say, before the change began, $\Lambda T = \lambda_1 t' + \lambda_1 t - \lambda_0 t^2/2$. So again Λ is the time average of λ over the time concerned. Again, as a practical matter that time need be only up to the end of the period of change.

References

- ¹Whitcomb, John C., and Henry M. Morris, 1961. The Genesis flood. Baker Book House, Grand Rapids, Pp. 232 & 233.
- ²Akridge, G. Russell, 1979. The mature Creation: more than a possibility. *Creation Research Society Quarterly* 16(1):68-72.
- ³Woodmorappe, John, 1979. Radiometric geochronology reappraised. *Creation Research Society Quarterly* 16(2):102-129 and 147. See especially p. 113.
- ⁴Pierce, Kenneth M., 1981. Putting Darwin back into the dock. *Time* 117(11):81. (16 March).
- ⁵Wehr, M. Russel, and James A. Richards, Jr., 1967. Physics of the atom. Addison-Wesley Publishing Co., Palo Alto. P. 308.
- ⁶Segre, Emilio, 1977. Nuclei and particles. W. A. Benjamin, Inc., London. Pp. 410-421.

PANORAMA OF SCIENCE

Mother's Milk

Currently there is a popular impression that "milk is milk"; but that is a false assumption. Nor is it true that artificial formulas provide all the important ingredients in human milk. Indeed, cows' milk, so often given to babies, contains about twice as much protein as human milk. That is necessary; for a newborn calf which will double its birth weight in about 50 days; whereas a human baby takes approximately 180 days. Humans do not need to add bulk the way a cow does; but they have different needs, especially concerning growth of the brain. The myelin which is necessary to surround nerve axons would be supplied by the relatively high lipid content of human milk. This fat also can provide energy and produce insulation.

Interestingly, mothers who give birth to preterm babies produce milk having higher protein and lipids than the milk of mothers whose babies were full term. (Incidentally, how could this have evolved? What selection value would it have for the species as a whole?)

Various substances in a mother's milk are important in the baby's growth and development. For instance, breast-fed babies receive antibodies from the mother

and have fewer gastrointestinal tract infections than formula-fed babies; also hormones carried in milk can play an important role in cell growth and differentiation. Epidermal growth factor (EGF), found in milk, is a small protein (53 residues) which appears to stimulate growth of the skin and gastrointestinal tract, maturation of digestive enzymes, and development of lung epithelium. Additionally, it appears to protect against excess gastric acid and aid in healing of wounds. Interestingly, urine has a high amount of EGF, and in the past it has been utilized to encourage healing, particularly in war situations.

The above information was taken primarily from Carpenter¹ who presents a good case for mothers to nurse their babies. Also Carpenter follows the rather popular procedure of recognizing that "nature" possesses wisdom in solving its various problems; and this wisdom is thought to have been derived during a long period of evolution and as a result of natural selection. The credit often accorded "nature" for ability to maximize utility of its products historically has inspired observers to recognize such ingenuity as the handiwork of a designer, as for instance Paley indicated.² This posi-

tion is not anti-scientific as some have been led to believe. Is it "un-engineering" to admit that an automobile shows design? Either position involves "faith", but theological design seems perfectly logical to me and is innately satisfying.

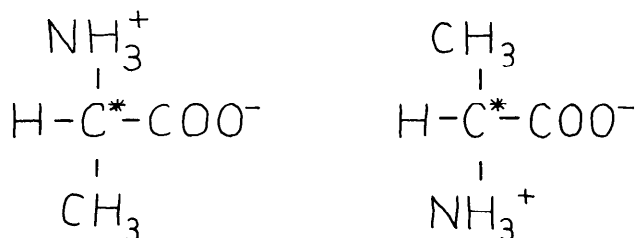
Contributed by Dr. Wayne Frair

No Uniformitarian Explanation for L-isomers

As many readers may know, all amino acids in proteins are of the L-isomer. A naturally occurring (or even synthetic) chemical solution would consist of both the D and L forms of amino acids (i.e. a racemic solution); however, in living things only the L form is present.

Bondy and Harrington³ tried to show that bentonite would "select" the L form, thus explaining how this situation could have occurred by natural processes. Yovatt and Brown show that the apparent preferential binding of the radioactive L-isomer of the amino acids used in these experiments were not amino acids at all, but due to impurities and radiochemical decomposition products!⁴ Thus, there is still no explanation as to why *only* the L-isomer of the amino acids are present in living organisms.

Chirality refers to a situation in which a multivalent atom (in this case carbon) is connected to a different group at each of its binding sites so that the molecule is not superimposable on its mirror image. Since carbon has four places for attachment and since in amino acids, all of the groups are different (with the exception of glycine), it is possible to have two different, non-superimposable structures even though the chemical formulae are identical. For example, consider L-alanine, as shown on the left, and D-alanine as shown on the right, the "C" with the asterisk indicating the chiral



carbon. These have the same atoms yet are different due to the configuration around the "chiral" carbon. In order to distinguish between the two types, one is said to be in the L configuration and the other in the D, as related to the absolute configuration of (-)-glyceraldehyde and (+)-glyceraldehyde respectively.

Since *all* amino acids in protein are *all* in the L configuration, it is unlikely (impossible) that proteins could come from a racemic solution.

Contributed by Mr. Dave Whitcomb

Flaws in Allopatric Theory

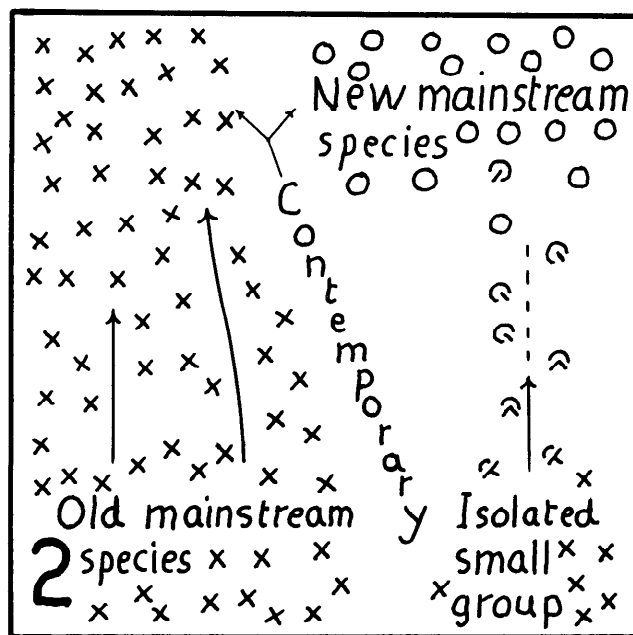
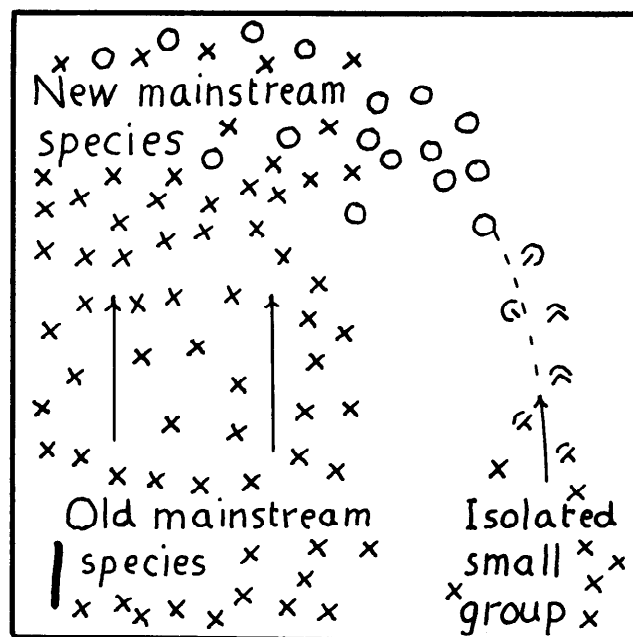
Because of the virtual total lack of transitional fossil lineages linking the various alleged evolutionary ancestors to their alleged descendants, evolutionists have been forced into the position of accepting that *a*. Evolution occurred by sudden jumps or saltations; or *b*. Evolution occurred by allopatry—i.e., the rapid evolu-

tion of a small isolated part of a species which occurred so quickly in small numbers that no fossils of the intermediate stages were left.

The saltation theory above would mean that, as Schindewolf puts it, a reptile laid an egg and a gross mutation caused a bird to hatch from it!!

Much more interesting is option *b*. above—allopatry; which, if true, would explain many of the missing links which so badly frustrate modern evolutionists. However, allopatry, the very rapid evolution of a small, isolated part of the population (while the mainstream part of the species remains unchanged), is open to fatal criticisms.

The fossiliferous strata reveal the new species appear suddenly, replacing the previous life forms without



transitional lineages. It is now common knowledge that overwhelmingly, the mainstream populations do not evolve.⁵

So if allopatry can be shown to be false, the whole evolutionary edifice is left with no evidence to support it. Consider the illustration.

In case 1. we assume that allopatry has occurred in (what became) a localized sedimentary rock series. (Same geologic deposit). It can at once be seen that when the newly evolved peripheral species takes over as the new mainstream population there should be great mixtures of old species (x) and new species (o). However, the fossil record shows few, if any, such cases of mixture.

In case 2. we assume the allopatric evolution has occurred in a geologic deposit away from the original deposit of the mainstream species (x). In this case, new species (o), although found in a different area, would be contemporaneous with the original species (x). As the fossil sequence is used to determine the chronological layout, there would be no way to tell which fossils apply to which period or era. This would cause havoc with all time scales and geologic co-relating and would make historical geology unworkable. No-one would know how any fossil would relate time-wise with other fossils; and the whole geologic column, on which evolution rests, would be meaningless.

As neither case makes sense in the light of the actual record or in terms of the geologic column, it appears that allopatry is a hopeless explanation of the missing links. The only reasonable and logical answer is that the missing transitional lineages cannot be found for the simple reason that they *never did exist*. Animals and plants have always been in distinct "kinds" ever since Creation and no evolution has taken place. Variety within species yes; but not transmutation into new species.

Like all previous explanations, allopatry also fails to explain the missing links.

Contributed by Mr. A. W. Mehler

Where are the Dinosaurs Now?

Where are they? What happened to them? Are there any alive today? Why were there dinosaurs? To get to the answer, we have to look at two chapters in Genesis. First, chapter 5 and then 11:10-26. Table 1 gives a breakdown of the lifespans from Adam to Abram (Abraham) and also how old they were when their named sons were born. For example, Adam was 130 years old when Seth was born, and Seth was 105 years old when Enosh was born. So on down the line to Isaac, from which point Biblical chronology is carried on differently.

A comparison reveals a rapid shortening of age in succeeding generations after the Biblical flood. In Genesis 6:3 God foretells and gives warning that man's days shall be reduced to "one hundred and twenty years." Moses obviously fulfilled this warning. Then we find in Psalm 90:10 that man's days will be further reduced to "threescore years and ten," an average of 70 and maybe more. This shortening of age was obviously a worldwide condition affecting all mankind. Is it not

Table 1. Ages of maturity (i.e., begetting of named son) and lifetimes of the patriarchs.

Antediluvian, Genesis 5		
	Age of maturity	Lifetime
Adam	130*	930
Seth	105	912
Enos	90	905
Cainan	70	910
Mahalaleel	65	895
Jared	162	962
Enoch	65	365□
Methuselah	187	969
Lamech	182	777
Noah	500	950
Postdiluvian, Genesis 11:10-26		
Shem	100	600
Arphaxad	35	438
Salah	30	433
Eber	34	474
Peleg	30	239
Reu	32	239
Serug	30	230
Nahor	29	148
Terah	70	205
Abraham	100	175
Isaac	60	180

*To be sure, Adam had begotten Cain and Abel, at least, earlier.

□But Enoch did not die at this age; he was translated.

also likely that *all* of life on earth was affected? The mammals, aquatic life, plant life, birds, insects, bacteria, algae and reptiles were all affected by these pronouncements upon the earth. Proverbs 11:27 helps us understand these progressively reducing lifespans. Whereas today 70 years of age is considered an average life, before the flood Lamech reached 777 years, at least 11 times the age we live now. Methuselah reached an amazing 969 years of age, almost 14 times what we live now. Since man lived at least 11 times longer before the flood, the mammals, birds, insects, fish and reptiles lived longer than they do today. Therefore, they were getting larger, heavier, and changing in various ways. Compare a 50 year old elephant to a 200 year old woolly (elephant) mammoth. (Table 2.) They differ primarily in size, weight, length of tusks and amount of hair.

These above data shows a direct relationship that can be explained by how long the elephant and woolly mammoth lived. A giant tortoise can now live as long as 177 years, grow to be 11 feet long and weigh 1,500 pounds; but fossils have been found that are larger than any known size of tortises today. The difference between a 20 year old tiger and a 100 year old saber-tooth tiger is size, age and length of teeth. The dinosaurs were long-lived reptiles, changing in size, shape and weight as they lived longer and longer. Obviously pre-flood conditions were excellent for reptiles to grow and obtain their

Table 2. Comparison of some Elephants.

	<i>Modern newborn</i>	<i>Modern full grown</i>	<i>Woolly Mammoth</i>
Height, ft.	3	8-13	10-13.8
Weight, lbs.	200	11-16,000	heavier
Tusks, length, ft.	none	4.9-8.9	14
Tusks, weight, lbs.	-	71-150	?
Hair	yellow & brown	some have sparse brown	long brown

great sizes. *Encyclopedia Britannica* states "The Komodo dragon does not compare with the 6 meter (20 foot) or more mososaur Tylosarus" (volume 15 page 726). It appears the author is referring to the height and size of the two reptiles. Also, he states on the same page, "none of the living reptiles, with the possible exception of snakes, is as large as the largest extinct representative of its particular group." I rejoice with this knowledge that many of today's reptiles are so similar to the dinosaurs. It indicates that longevity produced the dinosaurs; no evolution has been involved.

Cretacious crocodiles were as long as 40 to 50 feet, while crocodiles today have reached 20 feet. Snakes were also larger; fossils exist of a 60 foot constrictor, and a serpent from South America with fangs 2.5 inches long. A Megoneura could easily have been a dragonfly. Longevity easily explains these differences. Dinosaur eggs support longevity. Despite the enormous size of the reptiles their eggs remained small in comparison. (8 inches long; about twice the size of an ostrich egg). Due to the Flood the long-lived dinosaurs died. The post-flood environmental conditions were not in favor of the reptiles, so the age and size they used to obtain were greatly reduced. In answer to where are the dinosaurs now, I reply, they are all too young and die before they can reach their previous size and age (Genesis 6:20).

—Contributed by Mr. Barry Busfield.

Velocity Effects on Atomic Clocks

(Continued from page 200)

frequency is advanced in this paper. It makes use of the concept of electromagnetic feedback from the light bearing medium. This feedback acts on the electrical components to yield a weaker binding and consequent lowering of frequency at the radiation source.

References

- ¹Hazelett, Richard, and Dean Turner, 1979. The Einstein myth and the Ives papers. The Devin-Adair Co., Old Greenwich, Connecticut. This book gives an extensive account of Ives' work, and a complete collection of his papers.
- ²Ives, Herbert E., and G.R. Stillwell, 1938. An experimental study of the rate of a moving atomic clock. *Journal of the Optical Society of America* 28 (7):215-226.

Convection Currents

Supposed convection currents in the mantle are the suggested mechanisms that are proposed to drive the plates of the earth's crust about as demanded by the Theory of Plate Tectonics.

Do these supposed currents exist?

To seek positive evidence of the supposed currents, NASA conducted a project called "Information Theory Density Distribution". Its objectives were "to make a rational inference as to what the density distribution of the earth is and to investigate its geophysical significance, particularly with regard to convection in the mantle."

Rubincam⁶ wrote a highly technical report of the project. It included two figures labeled "Slice through the center of the earth", which showed the calculated Relative Density Distribution.

Referring to the figures, Rubincam states that they "appear to give little evidence of motion in the mantle."

This result is, of course, a great disappointment to those who need convection currents to make their theory work. Thus Rubincam belittles the result by saying, "However, can one really get a good idea of convection in the mantle from just a density map?"

Apparently someone thought they could when the project was originated.

—Contributed by Mr. Everett H. Peterson

References

- ¹Carpenter, G., 1981. The importance of mother's milk. *Natural History* 90 (8):6, 12, & 14.
- ²Paley, W., 1802. Natural theology: or, evidences of the existence and attributes of the Deity, collected from the appearance of nature. Reprinted 1972 by St. Thomas Press, Houston, Texas.
- ³Bondy, Stephen C., and Marilyn E. Harrington, 1979. L amino acids and D-glucose bind stereospecifically to colloidal clay. *Science* 203 (4386):1243-1244.
- ⁴Yovatt, J. B., and R. D. Brown, 1981. Origins of chirality in nature: a reassessment of the postulated role of bentonite. *Science* 212 (4499):1145-1146.
- ⁵Adler, Jerry, and John Carey, 1980. Is man a subtle accident? *Newsweek* XCVI (18):95-96. (3 November.)
- ⁶Rubincam, D. P., 1979. Information theory density distribution. Report no. N80-20753 contained in Earth Survey applications Division Research Report. National Technical Information Service, Springfield, Virginia.
- ⁷Ives, Herbert E., and G.R. Stillwell, 1941. An experimental study of the rate of a moving atomic clock II. *Journal of the Optical Society of America* 31 (5):369-374.
- ⁸Ives, Herbert E., 1940. The measurement of velocity with atomic clocks. *Science* 91 (2352):79-84. See especially p. 84.
- ⁹Einstein, A., 1905. Zur Elektrodynamik bewegten Korper. *Annalen der Physik* 17 (10):891-921.
- ¹⁰Cullwick, E.G., 1981. Einstein and special relativity. Some inconsistencies in his electrodynamics. *British Journal for the Philosophy of Science* 32 (2):167-176, has pointed out some odd things about Einstein's article.
- ¹¹Vergon, V., 1976. Relativity beyond Einstein. Exeter Publishing Co., Los Angeles.
- ¹²Barnes, Thomas G., Richard R. Pempfer, and Harold Armstrong, 1977. A classical foundation for electrodynamics. *Creation Research Society Quarterly* 14 (1):38-45.
- ¹³Harwit, Martin, 1973. Astrophysical concepts. John Wiley and Sons. Pp. 479 & 480.

BOOK REVIEWS

The Black Discovery of America. by Michael Bradley, 1981. Personal Library, Publishers, Suite 439, 17 Queen Street East, Toronto, Canada. 192 pages, \$14.95.

Reviewed by Kenneth E. Guenter*

The Black Discovery of American is a reconstruction of the way in which black Africans are most likely to have influenced both the rise of prehistoric cultures in the New World and the eventual "discovery" of these by whites.

In piecing his work together Michael Bradley reviews chronologies and cultural exchanges from the Stone Ages to recent centuries. This is accomplished by a fairly even blend of speculation and evidence. Here lies the book's chief attraction and, of course, its weakness.

The book is full of new ideas. Although not intended for Creationists, it presents a major dispersion of populations from the Near East through Africa to South America in a time when much of the present Amazon basin was submerged by the ocean. The possible links that this may bring with Creationist reconstructions of prehistory are apparent.

However, Bradley's running battle with the academic establishment calls for caution. His early chronology is based on the work of Velikovsky. The prehistory of Meso-America is entirely rewritten by him, and along the way there are skirmishes with such varied foes as the traditional historians of naval architecture or the archaeological establishment. It would seem that these conflicts have become habitual rather than occasionally necessary. One should also note that the book is intended to meet popular tastes first rather than the academic critic.

*Mr. Kenneth Guenter is a high school teacher. His address is Box 16, Caronport, Saskatchewan, Canada.

Fearfully and Wonderfully Made: a surgeon looks at the human and spiritual body, by Dr. Paul Brand and Philip Yancey, 1980. Zondervan Publishing House, Grand Rapids, MI 49506. 210 pages plus bibliography. Price \$8.95.

Reviewed by Paul G. Culley*

Dr. Brand has surely written to the glory of God and to the enrichment of our souls. Those of us in the Creation Research Society, who have been introduced to the mysteries of human anatomy and physiology, will revel in the beauty, and will thank God for His supreme creation in His own image.

Seven of the chapters deal with the characteristics and relationships among the cells comprising the various tissues. Six chapters describe the bones. Six more chapters present the remarkable contributions of the skin. Five deal with the control of bodily movements. A unique addition is present in each chapter, pointing to the Church, the Body of Christ, and our respective places in it.

The book is magnificent. Read it for yourself and enjoy a treat. It will help an uncertain student to retain his trust in God as Creator.

The Nature of the Stratigraphical Record, by Derek Ager.

Mr. Stephen P. Brown, Associate Director of Library Services at Cedarvill College, Cedarville, Ohio, informs us that this book, which was reviewed in the *Quarterly* for June, 1981, is being published in a second edition by Wiley. The anticipated price is \$17.95.

*Paul G. Culley, M. D., lives in French Camp, Mississippi 38745.

LETTERS TO THE EDITOR

Additional Thoughts on the Flood

The March *Quarterly* contained articles by Dr. Akridge and Mr. Peterson which I found thought-provoking regarding the Genesis flood. I would like to share with the readers of the *Quarterly* some of these additional thoughts.

Genesis, chapter 7 and the first few verses of chapter 8 give the account of the Great Deluge. Chapter 7 concludes (verse 24) with these words:

"And the waters prevailed upon the earth a hundred and fifty days." (KJV)

Chapter 8:1 immediately continues the account beginning with the words:

"And God remembered Noah . . ."

It is then recounted how God stopped the rain by causing a great wind to pass over the earth. Many creation writers believe it rained up to the 150th day before

being stopped. Certainly the account can be interpreted this way. The problem that arises is that chapter 7 clearly indicates it would rain for 40 days and 40 nights, not for 150 days and nights. So, then, how long did it rain? The usual response for reconciling this apparent conflict is to suggest two periods of rain. The first period was the 40 days of canopy rain while the second period consisted of the remaining 110 days of "normal" rain.

Again, it seems clear that this is a permissible interpretation; but it does not seem satisfactory to me for several reasons. First, Scripture is utterly silent regarding the source of the rain. It states only that it was to rain for 40 days; no mention is made of whether this was to come from the canopy or normal rain or some combination thereof. Secondly, if Dr. Akridge's comments on the Hebrew terminology are correct, these

verses indicate a violent non-normal rainfall by using the term *gesam* and not just *matar*. Thirdly, verse 3 of chapter 8 is generally translated using the past tense of the verbs. That is by the end of the 150 days of flood the waters *were abated*, indicating the completion of abatement.

In view of this I would like to offer a different interpretation. We note that the Genesis record is not necessarily one of strict chronological order. For example, chapter 2 is an elaboration of chapter 1. Also, the first few verses of chapter 11 appear to explain the last verse of chapter 10 regarding the division of the nations. Even within chapter 7 the account of Noah's entrance into the ark is given three times, each time with more information. Could it not be, then, the first three verses of chapter 8 are an explanation of the last verse of chapter 7? These verses could be explaining just how the waters ceased to prevail (*gabar*) after 150 days by referring back to the end of the 40 days and nights. If this is correct it would mean that God caused the great wind to pass over the earth stopping the windows of the heavens and the fountains of the deep at the end of those 40 days. This further suggests that it was during these remaining 110 rainless days that the major isostatic readjustments occurred such as valley formation and mountain-building (Ps. 104:6-9) and possibly also ocean basin subsidence and continental uplift.

As corollary thoughts to this, I would like to offer two comments.

First, could the apparent fit of the two Atlantic shorelines, which some believe to indicate a formerly contiguous supercontinent, be caused, at least partially, by the ocean currents? The erosive force of the major northern and southern Atlantic currents could have contributed to the apparent complementarity in a manner similar to the shorelines of a meandering river. In the latter case no one believes that the shorelines were once contiguous.

Second, it is generally held that the limestone deposits from the Flood were laid down primarily due to chemical conditions of pH, temperature and partial pressure. Little thought seems to be given to biological means of limestone production. I know some writers have mentioned marine organisms which *secrete* calcium carbonate, but such production is dismissed as too slow and too small an amount. However, I would offer the possibility that some marine *plants* which *precipitate* calcium carbonate may have made a non-trivial contribution to limestone formation. Algae, for example, remove carbon dioxide for photosynthesis, which precipitates calcium carbonate in calcareous hardwater. A dramatic example is the formation of "algal heads" found in the Great Salt Lake which are large crusts of calcium carbonate.¹

Reference

¹Eardley, A. J., 1972. *Science of the Earth*. Harper and Row. New York, NY. Pp. 71-72.

Sincerely in Christ
Ralph E. Ancil

1119 Kimberly Drive, #4
Lansing, Michigan 48912.
Received 1 September, 1981.

Comment on *The Necessity of the Canopies*

Peterson follows Smith's suggestions of a "thermal neutral zone" ranging between 84 and 94 degrees F¹. I would suggest that such figures are far too restrictive, and do not take into consideration the adaptive capability of living systems. As a Canadian, used to much cooler weather, I would suggest the lower figure could easily be as low as 70, or even lower! I recall in 1965 when I was in Cairo, meeting the wife of an American diplomat who had been there for some twelve years. The temperature had dropped to about 96 degrees F. She was wearing a coat because she found it chilly, and I was sweating heavily!

I am not convinced that "everywhere on the face of the earth and all the time the temperature was in the 'comfort zone' (p. 202), necessitating an earth axis perpendicular to the ecliptic." It is hardly necessary to assume that since Adam and Eve were naked in the garden, had sin not occurred, man would never have worn clothes, in order to "subdue" other parts of the earth.

Peterson suggests that the "breeze of the day" would have been mid-afternoon (p. 202). In Israel today it begins to pick up shortly after noon, reaching highest intensity in early afternoon.

I would suggest that it is not necessary to assume that all sedimentary rock are from the flood, or that "anything . . . that has happened to or on sedimentary rock is post flood" (p. 203). It is quite likely that there would be some deposition prior to the flood, and that some folding, etc. could have occurred before the flood. We have little Biblical information to go on.

I also find quite unconvincing the suggestion that Genesis 8:1-3 teaches a restored canopy. (p. 204) The Hebrew word translated "earth" is the same word for "land" and need not imply removal from the planet. Geological action involving a rising of continental masses seems to me more likely.

It also seems an unnecessary conclusion that the "original underground watering system" (p. 204) was *totally* destroyed. Could not underground reservoirs of water today be remnants of that?

Also, on page 204, Peterson assumes an emptying of the *second canopy*, suggestion that it must have been emptied slowly. This is quite unnecessary since the Bible, in my understanding at least, does not teach a second canopy anyway.

To relate the name "Peleg" to the Biblical flood is quite possible, but not certain. The meaning "channel of water" would seem to be a derived meaning, as the verb means basically "to divide." Gesenius' suspicion that the verb meant also to "bubble up," remains only that, a suspicion. It is difficult to say.

Peterson also repeats the often-quoted statement that mammoths were frozen at below -150 degrees F. I wonder about the reliability of those figures, and where a proper scientific analysis was done. Tests were supposedly done by Birds Eye Frozen Foods scientists, but it would be helpful to know if such tests were actually done and are available for study. Otherwise there may well be some question in regard to the temperatures involved. Since this statement is so often used, it would be

advisable for a creationist to do some research on the subject.

Reference

¹Peterson, Everett H., 1981. The necessity of the canopies. *Creation Research Society Quarterly* 17 (4):201-204 and 213.

Sincerely

Vernon A. Raaflaub

Academic Dean and Instructor in Old Testament

Canadian Lutheran Bible Institute

Camrose, Alberta, Canada

Received 1 September, 1981

Reply to Raaflaub

In reply to Mr. Raaflaub's letter concerning the canopies, I offer the following comments.

Two passages that have influenced my thinking about creation are Isa. 1:18—"Come now and let us reason together, says Jehovah", and Gen. 1:31—"And God saw everything that He had made, and behold, it was very good". The fact that God invites us finite humans to "reason" with Him indicates that although our reasoning is not perfect, it is not to be despised. The fact that God pronounced every created thing "very good" means that any model we construct of the new creation has to fully meet the "very good" standard.

Would man ever have needed clothes if he had not sinned? To me, the whole earth could not have been pronounced "very good" if one area of the earth demanded clothes when another did not. Also, consider the implications of Gen. 2:25—"And they were both naked—the man and his wife—and were not ashamed before one another". When they sinned, God put in them a sense of shame which caused God to clothe them. Thus, the original purpose of clothing was to "cover shame" caused by sin. This purpose for clothing seems to extend right on through eternity, for Christ's bride in heaven will be given clothing. (Rev. 19:8) Thus, it seems to me that this purpose for clothing, i.e., to cover shame, would have been diluted if clothing had been necessary, at some times, to protect against cold.

Was the earth's axis originally perpendicular to the ecliptic? To me, the whole earth could not have been pronounced "very good" if the polar regions had three months of darkness per year, especially when man had been commanded to *fill* the earth.

Venus, with its heavy carbon dioxide atmosphere, maintains high constant planet-wide temperatures, even through its long nights. I do not believe, however, that the earth could do the same through three months of darkness, even with a canopy, because of its much lighter atmosphere made of air.

However, if world-wide temperatures were not constantly the same, the world would not have been rain-free from creation to the Flood. That there was no rain until the Flood, is indicated by Heb. 11:7—"By faith Noah, being warned of God of things, not yet seen . . .". One of the things, "not yet seen", I believe was rain. A no-rain condition is produced by "equal world-wide pressure distribution . . . an equal horizontal distribu-

tion of temperature is necessary for an equal horizontal pressure distribution. Then "meteorologically" speaking all the pieces fit—no rain—no wind (slight breezes are possible)—even horizontal temperature distribution with little diurnal change—even horizontal pressure distribution"¹ The canopy and an earth's axis perpendicular to the ecliptic are both necessary, I believe, to produce the even temperature.

However, a tilted earth with a canopy should produce a worldwide mild climate with an uneven horizontal temperature and pressure distribution which would produce mild winds and rain—necessary conditions after the Flood had destroyed the underground watering system. (My article, "How the Flood Altered the Earth"², describes my idea of how the underground watering system was constructed and why it was totally destroyed.)

Was there any sedimentary rock before the Flood? I think not. If God had created any, certainly He could not have called it "very good", for sedimentary rock speaks of deterioration. Also, because there was no rain and no wind until the Flood, there was no erosion and thus no sediments—no sediments, no sedimentary rock. If there had been any folding of the earth's crust, that would have been the same as breaking up the fountains of the deep which started the Flood. Thus, I believe we can say that "anything . . . that has happened to or on sedimentary rock is post-flood."

Was the canopy restored after the Flood? If it was it solved some perplexing problems. It accounts for mild temperatures at the arctic circle so mammoths could live there on top of sedimentary rock. It also would have been a source of snow to produce the ice age.

I believe that Gen. 8:103 indicates it. On Day 151 of the Flood, God stopped the windows of heaven. Why did He do that? They had been opened for 150 days earlier and emptied their load of water in 40 days. Why are they stopped up again? At the same time God restrained the rain. Why did He do that and what rain? At that point there was not more water in the "windows". God also at this time made a wind to pass over the earth (here "earth" certainly refers to the whole planet) to dry up the water. The phrase, "going and retreating" has been used by others to suggest that when the waters were low enough to expose land areas, that the wind moved sheets of water over an area where it deposited sediments, and then the wind direction changed and the area was swept over by water from another direction which laid down other sediments. Certainly that is a reasonable idea. However, when the wind started to blow there was no exposed land area and in 73 days of blowing the water only subsided enough to expose the "tops" of the mountains. In those 73 days—as well as later—the wind was evaporating huge quantities of water. God had prohibited it from condensing back into rain. What happened to it? As I see it, it went behind the "stopped" windows, thus restoring the canopy.

What is the meaning of the word "peleg"? Strong defines it as "a rill (i.e., a small channel of water, as in irrigation)." This definition is strengthened by the word's use in the Old Testament. Besides being used as a

name, it is translated (in KJ) as "river" 9 times and as "stream" once. Ps. 1:3 shows its connection with water, "And he shall be planted, like a tree, by the rivers, i.e., peleg, of water." A river, or a channel with water in it divides two land masses by water.

What was the air temperature that froze the mammoths? the -150 degrees F reading is explained quite thoroughly by Dillow^{3,4}. I do not believe it was necessary for the actual temperature to have been that low - a combination of low temperature and wind that made an effective temperature of below -150° F would have done the job.

References

- ¹Personal correspondence with a meteorologist.
²Peterson, Everett H., 1981. How the Flood altered the earth. *Creation Research Society Quarterly* 18 (2):118-126.
³Dillow, Jody, 1977. The catastrophic deep-freeze of the Beresovka mammoth. *Creation Research Society Quarterly* 14 (1):5:13.
⁴Dillow, Joseph C., 1981. The waters above. Moody Press, Chicago. Chapters 11 and 12.

Sincerely

Everett H. Peterson
 918 Hummingbird Drive
 San Jose, California 95125
 Received 22 September, 1981.

Anthology of Matters

(Continued from page 223)

- ²³⁰Gray J. and A.J. Boucot. 1972. Palynological Evidence Bearing on the Ordovician-Silurian Paraconformity in Ohio. *Geological Society of America Bulletin* 83:1299.
²³¹Carter C. and S. Laufeld. 1975. Ordovician and Silurian Fossils in Well Cores from North Slope of Alaska. *AG* 59:440.
²³²Moskalenko T.A. 1972. Conodonts from Llandoveryan Deposits of the Siberian Platform. *DE* 204:236.
²³³Nicoll R.S. and C.B. Rexroad. 1966. Conodont Zones in Salomonie Dolomite and related Silurian Strata of Southeast Indiana. *AG* 50:630.
²³⁴Suhm R.W. and R.L. Ethington. 1975. Stratigraphy and Conodonts of Simpson Group (Middle Ordovician) Beach and Baylor Mountains, West Texas. *AG* 59:1133.
²³⁵Tikhiy V.N. and M.S. Stanichkova. 1973. Age of the Kazanla Suite and the Beginning of Devonian Sedimentation on the Russian Platform. *DE* 211:94.
²³⁶Goebel. 1968. *op.cit.*, p. 1742.
²³⁷Zoubek V. 1981. Introduction to "Micropaleontology of the Precambrian and Its Importance for Correlation." *Precambrian Research* 15(1):5.
²³⁸Swain, S.N., 1981. Review of Western and Arctic Canadian Biostratigraphy. *Earth Science Reviews* 16(4): 368.

Comment on *The Rivers of Eden*

In connection with the article mentioned,¹ the following thoughts may be of some interest.

Arabic has no letter for "P"; so words seem often to be rendered with the letter "Ba" (the "B" sound) instead. Paris, for instance, would become "Baris". So the case seems to be strengthened by the consideration that in Arabic the name Pishon, taken over from another language, would be spelled beginning (as transliterated into Latin letters) with a "B".

The letter "Pe" in Hebrew indicates sometimes a "P" sound, sometimes an "F" sound, often written "Ph". There is a letter for the "F" sound in Arabic; and Palestine, for instance, becomes "Falistin".

There may be other shifts to be looked for in correlating the present Arabic names of places and features in the Near East with Biblical names. For instance, "Sh" might go into "T", "I" into "A", and "O" into "I".

Reference

- ¹Bedigian, George, 1979. The rivers of Eden. *Creation Research Society Quarterly* 16 (3):169-170, and 153

Sincerely

David A. Depew
 Attorney at Law
 241 So. Electric Avenue
 Alhambra, California
 91801

Reply to Depew

I agree that the suggestions made may be useful in identifying some Biblical names of places.

As for the shifting between "P", "B", and "F", a modern example is the name Isfahan or Isfahan for the same city in Iran.

So Wadi al Batin could be equivalent to Patin; and Wadi Faishan (Reference 18 in my article) could be equivalent to Paishan. This seems to corroborate the idea that Batin could be the Biblical Pishon.

Also, I have in the meantime learned that George in Assyrian becomes "Gevergis". (Hard "g's"). This might support the suggestion that Hail might be the Biblical Havilah.

In His fellowship
 George Bedigian
 1 Phillipse Road
 Yonkers, New York 10701

INDEX TO VOLUME 18 OF THE CREATION RESEARCH SOCIETY QUARTERLY

The subscription year for the Creation Research Society Quarterly begins with issue Number 1 (the Annual issue) in June and continues through publication of the other three Quarterlies which usually appear in September, December, and March.

In Volume 18, Number 1 contained pages 1 to 80 inclusive, Number 2, pages 81 to 136, Number 3 pages 137 to 184, and Number 4, pages 185 to 244.

All pages of the Quarterly have been numbered consecutively; hence only the beginning page number is provided for each reference.

Letters to the Editor are designated by the symbol (L).

Items in Panorama of Science are listed alphabetically, according to the contributor, in a separate section.

Book Reviews are listed in a separate section, according to title, at the end of the index.

A

Additional Thoughts on the Flood, (L). By Ralph E. Ancil, 236.

Advance Notice of an Important Research Result (L)
By Carl Wieland, 133.

Akers, Harry, Jr.

Triplets' Paradox no Paradox. (L), 77

Akridge, Russell

A Recent Creation Explanation of the 3° K Background Black Body Radiation, 159.

Alleged Evolution of the Order Primates Including Monkeys and Apes, By W. Mehlert, 20.

Ancil, Ralph E.

Additional thoughts on the Flood, (L), 236.

Anthology of Matters Significant to Creationism and Diluviology: Report 2, An. By John Woodmorappe, 201.

B

Barnes, Thomas G.

A Recent Creation Explanation of the 3° K Background Black Body Radiation, 159.

Satellite Observations Confirm the Decline of the Earth's Magnetic Field, 39.

Velocity Effects on Atomic Clocks and the Time Question, 198.

Bedigian, George

Reply to Depew (L), 239.

Bertsch, Eberhard

Comment on Statistics, (L), 131.

Bouw, Gerardus D.

Two Problems Relativity Fails to Explain, 91.

Brown, Colin

The Hoatzin, 111.

The Monotremes, 187.

C

Cheek, Dennis W.

The Creationist and Neo-Darwinian Views Concerning the Origin of the Order Primates Compared and Contrasted: a Preliminary Analysis, 93.

Clark, Colin G.

Faith and Population in a Declining Civilization, 117.

Comment on The Necessity of the Canopies, (L). By Vernone A. Raaflaub, 237.

Comment on The Rivers of Eden (L), by David A. Depew, 239.

Comments on Statistics, (L). By Eberhard Bertsch, 131.

Cover picture for June. Supplied by Joseph M. Rea.

Cover picture for September. Supplied by the National Parks Service.

Cover picture for December. Drawn by Kelly J. Martin.

Cover picture for March. Supplied by the Australian High Commission, Ottawa, Ontario, Canada.

Cox, Douglas E.

On the Vertical Movements of the Earth's Crust, 112.

Creationism and Continental Drift. By G. Robert Morton, 42.

Creation an Important Christian Doctrine, (L). By Gordon L. Williams, 77.

Creationist and Neo-Darwinian Views Concerning the Origin of the Order Primates Compared and Contrasted: a Preliminary Analysis, The. By Dennis W. Cheek, 93.

Creation, Why and How? By Everett H. Peterson, 223.

D

Dedication to Wilbert Henry Rusch, Sr. By Wayne Frair, 3

Depew, David A.

Comment on The Rivers of Eden (L), 239.

Design in Nature: the Fiery Skipper Butterfly *Hylephila Phyleus* (Drury) as an Efficient Feeder on Flowers of Lantana

Camara L. By Joseph M. Rea, 4.

DeYoung, Donald B.

The Origin of the Universe, 84.

Donnelly, Alan

Gleanings from the Telegraph, (L), 132.

E

Electromagnetics and the Appearance of Age. By Glenn R. Morton, 227.

Episteme is the Theory, The. By Randall Hedtke, 8.

Essential Nonexistence of the Evolutionary-Uniformitarian Geologic Column: a Quantitative Assessment, The. By John Woodmorappe, 46.

Estimate of the Current Status of Evolutionary Thinking, An.

By John N. Moore, 189.

F

Faith and Population in a Declining Civilization. By Colin G. Clark, 117.

Fox, Harry James

Settling Sedimentation, (L), 130.

Frair, Wayne

Dedication to Wilbert Henry Rusch, Sr., 3.

Report of the 1981 Meeting of the Board of Directors, 133.

G

Glaser, Rev. Lawrence H.

How will the Sun and Moon be Darkened? (L), 77.

Gleanings from the Telegraph, (L), By Alan Donnelly, 132.

Guenter, Ken

Implications of Palaeolithic Stratigraphy for Creationist Models of Prehistory, 168.

H

Hall, Jay

How Punctuated was our Equilibrium! (L) 132.

Hanson, James

The Sun's Luminosity and Age, 27.

Harper, G. H.

Speciation or Irruption: the Significance of the Darwin Finches, 171.

Have the Genesis Kinds Ever Crossed? By Frank Lewis March, 164.

Hedtke, Randall

The Episteme is the Theory, 8.

Hoatzin, The. By Colin Brown, 111.

How the Flood Altered the Earth. By Everett H. Peterson, 118.

How Punctuated was our Equilibrium! (L). By Jay Hall, 132.

How will the Sun and Moon be Darkened? (L) By Rev. Lawrence H. Glaser, 77.

I

Implications of Palaeolithic Stratigraphy for Creationist Models of Prehistory. By Ken Guenter, 168.

Intelligence Rather than Struggle, By William J. Tinkle, 163.

K

Kaufmann, David A.

Mechanical Design in the Human Body, 155.

Keithley, Willis E.

Spectrum Spectacular, 83.

Koala—an Evolutionist's Dilemma, The. By Kelly J. Martin and E. Norbert Smith, Also cover picture for December, 139.

L

Lester, Lane P.

Popgen 1: Computer Simulation of Population Genetics, 71

Let us Reason Together. By William J. Tinkle, 25.

Lipson, H.S.

A Physicist Looks at Evolution, 14.

M

Manners, Malcolm M.

Too Thick a Canopy Might be Bad for Plants, (L), 76

Marsh, Frank Lewis

Have the Genesis Kinds Ever Crossed? 164.

Martin, Kelly J.

The Koala—an Evolutionist's Dilemma, and cover picture for December, 139.

Martins, Paulo Pereira

A New Study of Ammonoidea, (L), 180.

Mechanical Design in the Human Body, By David A. Kaufmann, 155.

Mehlert, W.

Alleged Evolution of the Order Primates, Including Monkeys and Apes, 20.

Melnick, A. James

"Punctuated Equilibrium" and the Macro-Microevolution Controversy, 189.

Monotremes, The. By Colin Brown, 187.

Moore, John N.

Estimate of the Current Status of Evolutionary Thinking, 139.

Morton, Glenn R.

Creationism and Continental Drift, 42.

Electromagnetics and the Appearance of Age, 227.

Reply to Fox, (L) 131.

N

Neanderthal, Oh How I Need You! By Erich A. von Fange, 140.

New Study of Ammonoidea, A. (L). By Paulo Pereira Martins, 180.

O

On the Vertical Movements of the Earth's Crust. By Douglas E. Cox, 112.

Origin of the Universe, The. By Don B. DeYoung and John C. Whitcomb, 84.

P

Peterson, Everett H.

Creation, Why and How?, 223.

How the Flood Altered the Earth, 118.

Reply to Raaflaub, (L), 238.

Physicist Looks at Evolution, A. By H.S. Lipson. 14.

Popgen 1: Computer Simulation of Population Genetics, By Lane P. Lester, 71.

Pre-Main Sequence Stellar Model Applied to Close Binary Systems, A. By Jon K. West, 15.

"Punctuated Equilibrium" and the Macro-Microevolution Controversy, By James A. Melnick, 22.

R

Raaflaub, Vernon A.

Comment on The Necessity of the Canopies (L), 237.

Ramirez, Francisco S., IV

Velocity Effects on Atomic Clocks and the Time Question, 198.

Rea, Joseph M.

Design in Nature: the Fiery Skipper Butterfly *Hylephila Phyleus* (Drury) as an Efficient Feeder on

Flowers of Lantana Camara L, and cover picture for June 4.

Recent Creation Explanation of the 3° K Background Black Body Radiation, A. By Russell Akridge, Thomas Barnes, and Harold S. Slusher, 159.

Reply to Depew (L), by George Bedigian, 239.

Reply to Fox, (L), By Glenn Robert Morton, 131.

Reply to Manners, (L). By Luther Westberg, 76.

Reply to Morton, (L). By Everett H. Peterson, 238.

Reply to Raaflaub (L), by Everett H. Peterson, 238.

Report of the 1981 Meeting of the Board of Directors, By Wayne Frair, 133.

S

Satellite Observations Confirm the Decline of the Earth's Magnetic Field. By Thomas G. Barnes, 39.

Settling Sedimentation, (I.). By Harry James Fox, 130.

Slusher, Harold S.
A Recent Creation Explanation of the 3° K Background Black Body Radiation, 159.

Smith, E. Norbert

The Koala—an Evolutionist's Dilemma, 139.

Speciation or Irruption: the Significance of the Darwin Finches. By G.H. Harper, 171.

Spectrum Spectacular. By Willis E. Keithley, 83.

Sun's Luminosity and Age, The. By James Hanson, 27.

T

Time and Ancient Records. By David C.C. Watson, 30.

Tinkle, William J.

Intelligence Rather than Struggle, 163.

Let us Reason Together, 25.

Too Thick a Canopy Might be Bad for Plants, (L). By

Malcolm M. Manners, 76.

Triplets and the Addition of Velocities, The, (L). By V. Vergon, 130.

Triplets' Paradox no Paradox, (L). By Harry Akers, Jr., 77.

Two Problems Relativity Fails to Explain. By Gerardus D. Bouw, 91.

V

Velocity Effects on Atomic Clocks and the Time Question. By Thomas G. Barnes and Francisco S. Ramirez IV, 198.

Vergon, V.

The Triplets and the Addition of Velocities, (L), 130.

von Fange, Erich A.

Neanderthal, Oh How I Need You! 140.

W

Watson, David C.C.

Time and Ancient Records, 30.

West, Jon K.

A Pre-Main Sequence Stellar Model Applied to Close Binary Systems, 15.

Westberg, Luther

Reply to Manners, (L), 76.

Whitcomb, John C.

The Origin of the Universe, 84.

Wieland, Carl

Advance Notice of an Important Research Result, (L), 133.

Williams, Gordon L.

Creation an Important Christian Doctrine, (L), 77.

Woodmorappe, John

An Anthology of Matters Significant to Creationism and Diluvology: Report 2, 201.

The Essential Nonexistence of the Evolutionary-Uniformitarian Geologic Column: a Quantitative Assessment, 46.

PANORAMA OF SCIENCE

H. L. Armstrong

Roman Numerals, 126.

Colin Brown

Onychophora, 126

Barry Busfield

Where are the dinosaurs now? 234.

Wayne Frair

Mother's milk, 232.

Randall Hedtke

Asa Gray vindicated, 74.

George F. Howe

Photosynthetic pathways lead to Creation design, 176.

Walter E. Lammerts

The Rose of Jericho, 73.

A. W. Mehler

Flaws in allopatric theory, 233.

Everett H. Peterson

Convection currents, 235.

E. Norbert Smith

Birth pain repressor in rats, 74.

Erich A. von Fange

Once upon a time-man, 75.

Dave Whitcomb

No uniformitarian explanation for L-isomers, 233.

BOOK REVIEWS

Black Discovery of America, The. By Michael Bradley.
Reviewed by Kenneth E. Guenter, 236.

Charles Darwin and the Problem of Pain, by N.C. Gillespie.

Discussed by Randall Hedtke. See p. 76, and the reference there.

Eppur Si Muove, by Stefan Marinov. Reviewed by Gerardus D. Bouw, 180.

Fearfully and Wonderfully Made, by Paul Brand and Philip Yancey.

Reviewed by Paul G. Culley, 236.

Incredible Life: a Handbook of Biological Mysteries.
Compiled by Wm. R. Corliss, Reviewed by George F. Howe, 177.

Nature of the Stratigraphic Record, The. By Derek V. Ager. Reviewed by Erich A. von Fange, 75.

Plants and Archaeology, by Geoffrey Dimbleby. Reviewed by Kari Farson, 176.

Quaternary Geology, by D.Q. Bowen. Reviewed by David J. Tyler, 178.

Seed of the Woman, The. By Arthur C. Custance. Reviewed by John W. Klotz, 128.

Tuning into Nature. By Philip S. Callahan. Reviewed by Stephen M. Butt, 127.

CREATION RESEARCH SOCIETY

History The Creation Research Society was first organized in 1963, with Dr. Walter E. Lammerts as first president and editor of a quarterly publication. Initially started as an informal committee of 10 scientists, it has grown rapidly, evidently filling a real need for an association devoted to research and publication in the field of scientific creationism, with a current membership of over 600 voting members (with graduate degrees in science) and over 1800 non-voting members. The *Creation Research Society Quarterly* has been gradually enlarged and improved and now is recognized as probably the outstanding publication in the field.

Activities The Society is solely a research and publication society. It does not hold meetings or engage in other promotional activities, and has no affiliation with any other scientific or religious organizations. Its members conduct research on problems related to its purposes, and a research fund is maintained to assist in such projects. Contributions to the research fund for these purposes are tax deductible.

Membership Voting membership is limited to scientists having at least an earned graduate degree in a natural or applied science. Dues are \$12.00 (\$14.00 U.S. for overseas) per year and may be sent to Wilbert H. Rusch, Sr., Membership Secretary, 2717 Cranbrook Road, Ann Arbor, Michigan 48104. Sustaining membership for those who do not meet the criteria for voting membership, and yet who subscribe to the statement of belief, is available at \$12.00 (\$14.00 U.S. for overseas) per year and includes subscription to the Annual Issue and Quarterlies. All others interested in receiving copies of all these publications may do so at the rate of the subscription price for all issues for one year: \$15.00 (\$17.00 U.S. for overseas.)

Statement of Belief Members of the Creation Research Society, which include research scientists representing various fields of successful scientific accomplishment, are 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.

We propose to re-evaluate science from this viewpoint, and since 1964 have published a quarterly of research articles in this field. In 1970 the Society published a textbook, *Biology: A Search for Order in Complexity*, through Zondervan Publishing House, Grand Rapids, Michigan 49506. Subsequently a Revised Edition (1974), a Teachers' Guide and both Teachers' and Students' Laboratory Manuals have been published by Zondervan Publishing House. All members of the Society subscribe to the following statement of belief:

1. The Bible is the written Word of God, and because it is inspired throughout, all its assertions are historically and scientifically true in all the original autographs. To the student of nature this means that the account of origins in Genesis is a factual presentation of simple historical truths.

2. All basic types of living things, including man, were made by direct creative acts of God during the Creation Week described in Genesis. Whatever biological changes have occurred since Creation Week have accomplished only changes within the original created kinds.

3. The great Flood described in Genesis, commonly referred to as the Noachian Flood, was an historic event worldwide in its extent and effect.

4. We are an organization of Christian men of science who accept Jesus Christ as our Lord and Saviour. The account of the special creation of Adam and Eve as one man and woman and their subsequent fall into sin is the basis for our belief in the necessity of a Saviour for all mankind. Therefore, salvation can come only through accepting Jesus Christ as our Saviour.

Board of Directors *Biochemistry*: Duane T. Gish, Ph.D., Institute for Creation Research, 2716 Madison Avenue, San Diego, CA 92116. *Biological Sciences*: Wayne Frair, Ph.D., **Secretary**, The King's College, Briarcliff Manor, NY 10510; George F. Howe, Ph.D., **President**, Los Angeles Baptist College, Newhall, CA 91321; John R. Meyer, Ph.D., Los Angeles Baptist College, Newhall, CA 91321; Wilbert H. Rusch, Sr., M.S., LL.D., **Membership Secretary**, Professor of Science, Concordia College, Ann Arbor, MI 48105; E. Norbert Smith, Ph.D., Northeastern Oklahoma State University, Tahlequah, OK 74464; Paul A. Zimmerman, Ph.D. Concordia Junior College, River Forest, IL; *Engineering*: D. R. Boylan, Ph.D., Professor of Engineering, Iowa State University, Ames, Iowa 50011; *Genetics*: John W. Klotz, Ph.D., Director of Graduate Studies, Concordia Seminary, St. Louis, MO 63105; *Geology*: Clifford L. Burdick, M.S., D.Sc., 924 N. 6th Avenue, Tucson, AZ 85705. *Geophysics*: Harold Slusher, M.S., D.Sc., University of Texas at El Paso, TX 79902. *Physical Sciences*: Harold Armstrong, M.S., **Publications Editor**, Queens University, Kingston, Ontario, Canada; Thomas C. Barnes, D.Sc., University of Texas at El Paso, TX 79902; Richard G. Korthals, M.S., **Treasurer**, P. O. Box 135, Arcadia, MI 49613; Henry M. Morris, Ph.D., Institute for Creation Research, 2716 Madison Avenue, San Diego, CA 92116, and President of Christian Heritage College, San Diego; George Mulfinger, M.S., Bob Jones University, Greenville, SC 29614; Emmett L. Williams, Jr., Ph.D., **Vice-President**, Continental Telephone Laboratories, Norcross, GA. *Science Education*: John N. Moore, M.S., Ed.D., 136 Brody Hall, Michigan State University, East Lansing, MI 48824.

Creation, Why and How?

(Continued from page 226)

1. The Second Law was in effect and there was no radioactivity.

2. All life, whether man, animal, or vegetable, was given its own life span.

3. Man would live beyond his given life span by eating the fruit of the Tree of Life.

4. All life, except man, would die when its life span was reached, not from disease but because it had fulfilled its time.

5. There were no pests; neither micro-organism, insect, animal, or plant preyed on or interfered with others. Everything had its own "very good" purpose and fulfilled it.

6. Some animals and birds were created with the ability to eat meat and were given the job of "house-keeper". They ate the creatures that died so as to quickly to return the dead bodies to the soil. They did not kill

to eat meat. Today they are the predators and scavengers.

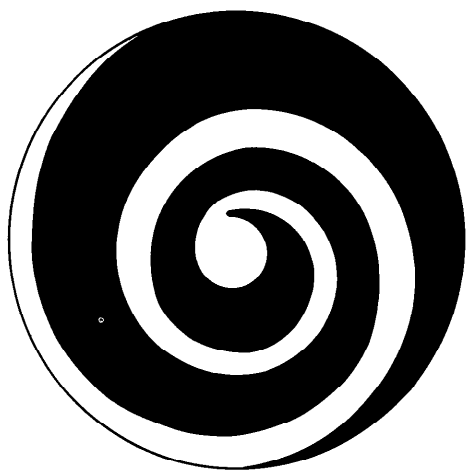
7. The angels gave man 100% protection from accidents. This thought is suggested by the following verses:

"Are they not all ministering spirits, sent forth to minister for them who shall be heirs of salvation." (Hebrews 1:14)

"For He shall give His angels charge over thee, to keep thee in all thy ways. They shall bear thee up in their hands, lest thou dash thy foot against a stone." (Psalm 91:11, 12)

References

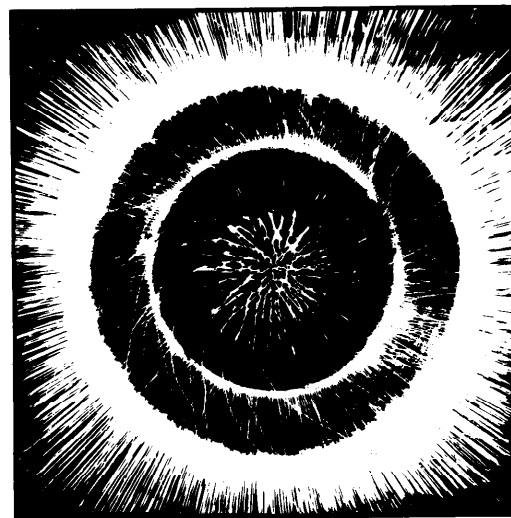
- ¹Steidl, Paul M. 1980. Solar neutrinos and a young sun. *Creation Research Society Quarterly* 17 (1):60-64.
- ²Ibid.
- ³Barnes, T. G., 1980. New proton and neutron models. *Creation Research Society Quarterly* 17 (1):42-47.
- ⁴1979. Quark glue. *Scientific American* 241 (5):84.
- ⁵Overn, William, 1979. Pleochroic Halos. 15th Anniversary Convention Book. Bible Science Association, Minneapolis, Minnesota p. 177



Why Not Creation?

Edited by
WALTER E. LAMMERTS

Selected Articles from the Creation
Research Society Quarterly
(Volumes I-V, 1964-1968) **\$5.95**



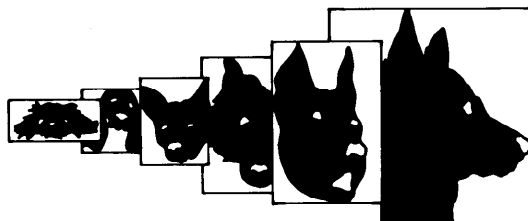
Thermodynamics and the Development of Order

Edited by **Emmett L. Williams**

A Definitive Creationist Study on
the Implications of Thermodynamics **\$3.95**
in the Creation/Evolution Controversy

VARIATION AND FIXITY IN NATURE

FRANK L. MARSH, PH.D.



THE MEANING OF DIVERSITY
AND DISCONTINUITY IN
THE WORLD OF LIVING THINGS,
AND THEIR BEARING ON
CREATION AND EVOLUTION

All prices prepaid and postpaid

Creation Research
Society Books

Available at:

5093 Williamsport Drive,
Norcross, GA. 30071

A Decade of Creationist
Research by Duane T. Gish
Reprinted from the Quarterly
for June 1975. 16pp.
75 Cents

\$3.95