

ary between Alberta and British Columbia. Here the overlying Precambrian Belt Series Altyn lies apparently conformably on the underlying Cretaceous limestone which is coal-bearing at the mining town of Frank, where a disastrous slide buried the town half a century ago.

A sharp contact is visible although the rock beds lie at an angle of about 40 degrees. There is a very slight brecciated seam of an inch or so, as one would expect from the differential movement due to folding. However no thrust-fault evidence.

Conclusion

To sum up, the following by Dr. R. C. Emmons of the Geology Department of the University of Wisconsin seems appropriate:

Under-thrusting and upwelling appear to have bypassed the usual period of scrutiny, into one of intransigent acceptance, and are widely invoked, though unestablished in the geologic literature, as for example is over-

thrusting. Both vagrant concepts have assumed a sacrosanct status under geophysical husbandry that denies communion to opposition.⁸

References

- ¹Nicholson, Henry Alleyne. 1897. Ancient life history of the earth. D. Appleton Co. New York, N. Y., p. 40.
- ²Billings, Marland P. 1955. Structural geology. Prentice-Hall, New York, N.Y., p. 151.
- ³Lawson, A. C. *Bulletin of the Geological Society of America*. 1922. Bulletin 33, p. 340.
- ⁴Bowie, William, Isostatic investigations, etc. Special Publication 99, 1924. U.S. Coast and Geodetic Survey.
- ⁵Hubbert, M. King and William Ruby. 1965. Role of fluid pressure in mechanics of overthrust faulting, *Bulletin of Geological Society of America*, p. 470.
- ⁶Hsu, K. J. 1969. A preliminary analysis of the statics and kinetics of the Glarus overthrust, *Ecology Geologicae Helvetiae*, 62:143-154.
- ⁷Lammerts, Walter E. 1972. The Glarus overthrust, *Creation Research Society Quarterly*, 8(4):251-255.
- ⁸Emmons, Dr. R. C. 1973. Underthrusting and overthrusting, *Geotimes*, Washington, D. C.

VARIATION AND FIXITY IN NATURE

FRANK L. MARSH*

This article is the substance of a paper delivered at Lansing Community College, Lansing, Michigan, in October, 1973, as part of a Special Creation-Evolution Seminar, and is presented here as being of interest to a larger number of people. Using quotations from writers who assume evolution, the author points out that there is no evidence, from fossils or from anything else, for the vast changes between kinds, which are required according to the evolution model. The evidence may be used much more conclusively to support the special creation of the various kinds, followed, in some cases, by their limited diversification.

Introduction

I am most appreciative of this opportunity of speaking to you on the subject of origins. We might gain the impression occasionally that there are really a great many points of view on this subject. However, with regard to which views are really of importance in this fair land of ours, I think my erstwhile professor of zoology at the University of Chicago, Dr. Horatio Hackett Newman, very definitely cleared the air, as follows:

There is no rival hypothesis [to evolution] except the outworn and completely refuted one of special creation, now retained only by the ignorant, the dogmatic, and the prejudiced. (p. 407, *Outlines of Zoology*)

(Once upon a time, after he had written this book, I received an A in a course on genetics under Dr. Newman because no opportunity had arisen for him to discover that I was a special creationist.)

*Frank L. Marsh, Ph.D., is Professor Emeritus of Biology at Andrews University, and lives at 216 Hillcrest Drive, Berrien Springs, Michigan 49103.

In titling this present Seminar on origins, I note that you agree with Newman as to which points of view in this specific area are the most important. Your name for this course reads, *Special Creation—Evolution Seminar*. I am delighted to know that among the professors of Lansing Community College (LCC) there is a breadth of mind which leads them to wish to study both sides of the problem of origins.

To discover from whence we came, I submit, is a very honorable quest. Some extremely important matters of the present time, and of the future, hang upon our origin as an order of beings. Tonight for a few minutes I invite your thinking upon this important topic by way of observable variation and fixity among fossil and living things.

One of the obvious characteristics of our living world, which make it so attractive to most of us, is the fact of variation in color, form, and structure. What a delight it is to stroll down the aisles of a good dog, or cat, or pigeon, or rabbit show, and along the lanes of the horse, cattle, pig, and

sheep barns of our fairgrounds, to study the multitudinous varieties present.

And then, to saunter through the horticultural, field-crop, and floral exhibits and to behold the wide variation in corn, and wheat, and tomatoes, and beans, and roses, and gladioli, and dahlias might lead us to conclude that there is just *no limit* to the variation and change which can be produced in our domesticated plants and animals.

The naturalist who wanders the fields and swamps and woods and deserts experiences amazement as he sees the extent to which variation has proceeded in natural habitats without assistance from the plant or animal breeder. For example:

- 1) Hitchcock lists 64 species of bluegrass in the United States.
- 2) Gray lists 17 species of the common thistle, and 51 species of violets.
- 3) Sargent catalogs 24 species of willows, 54 species of oaks, and 153 species of hawthorn or red haw.
- 4) Walker lists 12 species of true cattle in the world.
- 5) Hall and Kelson list, for the United States, 66 subspecies of the deer mouse, and 66 subspecies of the northern pocket gopher, and 214 subspecies of the southern pocket gopher.
- 6) Over 30 subspecies of the song sparrow have been cataloged across the United States.
- 7) Griffith Taylor names 160 distinct breeds of men on the earth.

If variety is the spice of life, then we live in a delightfully flavorful world.

In Contrast: What Darwin Was Taught

With us who are so accustomed to live in a world where just about every domesticated plant and animal is a latest improved hybrid, and where new varieties bloom on almost every sod and in every flower bed, it is hard to recall that even as recently as the early 19th century educated people were taught in some universities that in the world of living things variation *did not occur*.

This was still the point of view of the theological teachers at Cambridge in the late 1820's when Charles Darwin was studying for a degree in theology in that school. He was told that Genesis taught that in reproduction the offspring were exactly like their parents.

Furthermore, he was told at Cambridge that according to Genesis (we marvel that it would appear that he never read Genesis for himself) the plants and animals of his day had been created as they then appeared and in the places they occupied in the late 1820's. At this we are nonplused because no statement is found in the entire Bible which presents a picture of such immobility in the busy world of living things.

The sequel constituted a great tragedy for the civilized world when Darwin actually observed, on his voyage around the world, that variation *did* occur within the kinds in the form of geographical races, and because of this observation concluded that Genesis was wrong. Even to our day misinformed individuals are of the opinion that in his recognition of variation within basic types, Darwin disproved Genesis.

Actually all Darwin disproved was the inaccurate interpretation of Genesis given by the scholastics. Even Genesis 1:12 RSV, "The earth brought forth vegetation, plants yielding seed according to their own kinds," does not begin to suggest that no variation within kinds could occur.

After Darwin discovered an abundance of field evidence that variation *was* occurring among plants and animals, and had finally refused Genesis as misinterpreted to him by the schoolmen, he permitted his imagination to run most unscientifically without let or hindrance. His mind appears to have experienced an emancipation, and he reminds us of a small boy with a new toy.

By his fantastic speculations he became the "great emancipator" of the imaginations of men of science. In fact he claimed to recognize no law-bound necessity or force in nature—and men of science fell upon their faces before him.

In his first edition of *Origin of Species*, page 165, Darwin writes of bears swimming in North American rivers and snapping at insects in the water. He wrote that it was not impossible that, if this kind of food were abundant and there were no serious competition, some of the bears would become aquatic animals and would gradually acquire larger and larger mouths, eventually becoming as monstrous as whales.

True, Darwin modified these statements in later editions, but the sky was still largely his limit when he began to speculate. This mantle of freedom with regard to the building of hypotheses has fallen upon the majority of scientists today, and they, with Darwin, speak fantastically of unlimited variations.

Extremes of Men's Thoughts

Throughout history man has ever shown a tendency to swing in his opinions from one extreme to the other. With regard to origins, the theologians from the 17th to the middle 19th centuries, became progressively narrower and more dogmatic in their doctrine of an unbiblical fixity among individual plants and animals, meanwhile holding all scientists in extreme bondage to authority by threat of excommunication.

Then with the arrival of the middle of the 19th century, Darwin became a Pied Piper of Hamelin (Down), who with an offer of freedom from authority, drew men of science to the other ex-

treme of unlimited variation among organisms. But alas! The men of science had traded belief in an unnatural low-level fixity for an obsession of unnatural unlimited progression. All that was necessary for a blob of protoplasm to become a man was merely sufficient time.

Accompanying this more recent swing in scientific opinion is a raw, discriminatory dogmatism in academic circles which only he who has had the courage to stand against the scientific majority can describe for you. The dogmatism of the Dark Ages pales into insignificance in comparison with that manifested in many of our modern universities where higher degrees in science are denied those who dare to refuse an hypothesis of organic evolution.

Perhaps you would like to read a book filled with the experiences of these young scientists who, because they would not fall down and worship the sacred cow of modern speculative scientism, have been banished from the popular halls of learning. This minority group is branded, "ignorant, dogmatic, and prejudiced," because they cannot accept the concept of unlimited progression.

Let us assume that for the moment each of us is a very rare individual, for instance a biological scientist interested in the natural *facts* of variation. Since the far day when the schoolmen tried to harmonize Genesis with Aristotle and Galen, and more recently when the scientific world through the accurate observations of Darwin, appears first to have become aware of variation among plants and animals, a vast amount of knowledge has come to light with regard to the changes which actually occur among living organisms of the world.

Let us take an over-all, up-to-date survey of the appearance of the plants and animals of the world through the eyes of an outstanding evolutionist of our day, Theodosius Dobzhansky, presently professor of genetics in the University of California at Davis:

Organic diversity is an observational fact more or less familiar to everyone. It is perceived by us as something apart from ourselves, independent of the working of our minds. Individuals, although limited in existence to an interval of time, are the prime reality with which a biologist is confronted. While the uniqueness and unrepeatability of individuals are aspects falling primarily within the province of philosophers and artists, the scientist concentrates his attention on their similarities and differences. Indeed, a more intimate acquaintance with the living world discloses a fact almost as striking as the diversity itself. This is the discontinuity of the variation among organisms.

If we assemble as many individuals living at a given time as we can, we notice at once that the observed variation does not form any kind of continuous distribution. Instead, a multitude of separate, discrete, distributions are found. In other words, the living world is not a single array of individuals in which any two variants are connected by unbroken series of integrades, but an array of more or less distinctly separate arrays, intermediates between which are absent or at least rare. Each array is a cluster of individuals, usually possessing some common characteristics and gravitating to a definite modal point in their variations. (pp. 3 and 4, *Genetics and the Origin of Species*, Revised Edition)

Thus we discover that variation does not occur in straight lines without limit, but rather, a discontinuity is present which divides the variants of one basic kind, or separate array, from those of another basic kind, or separate array. I believe that if Charles Darwin had had this information he would not have committed himself to an hypothesis of unlimited variation which assumedly developed the complex and specialized from the simple and generalized.

Fact: Discontinuity of Variation

When thinking of the individual organisms in the world we must always bear in mind the easily observable fact of discontinuity of variation. Even he who runs can distinguish a horse from a cow, a man from a chimpanzee, a rose from a camellia, wheat from oats, maples from oaks, and so on.

Really ancient accounts of origins, in so far as they actually did mention origins and did not merely assume things already in existence, seem to have been accounts of creation. As early as the time of the Greek philosophers, however, in the 4th and 5th centuries B.C., there were theories which today would definitely be classed as evolutionary.

Even some of the Christian fathers, especially Augustine, wrote things which could be interpreted as borrowing some form of evolution; and the philosophers of the Middle Ages tended to follow the lead set by their predecessors. However, in the 16th century the Catholic Church was led back to a literal Genesis largely through the leading of the Spanish theologian Francisco Suarez.

In the 18th century the French naturalist, Charles Bonnet, set forth what is usually termed the first "scientific" theory of creationism. In his popular view all living things, from microbe to man, could be arranged in a linear series, a Ladder of Being, according to the complexity of their bodies. The position of Bonnet, of course, was an

echo of Aristotle. This view was finally overriden in the same century by the scientific findings of the creationists Linnaeus and Cuvier.

Then came Charles Darwin with his eventual concept of no law-bound force in nature. He adopted this point of view completely; and, being a "supersalesman," he was able to persuade scientists quite generally so that the majority swung to the intriguing idea that all living things had developed from a progression of simple toward more complex or specialized.

Bonnet's concept of a Ladder of Being could not hold up against the later discoveries in comparative anatomy. I ask you, friends, how does the concept of progression hold up against the universal and easily observed biological fact of discontinuity in both the living and fossil world?

I believe the obsession of organic evolution which has laid hold upon the minds of scientists has caused them to overlook the tremendous significance of discontinuity. The caution of the English evolutionist G. A. Kerkut, is apropos here:

It might be suggested that if it is possible to show that the present-day forms are changing and evolution (microevolution) is occurring at this level, why can't one extrapolate and say that this in effect has led to the changes we have seen right from the Viruses to the Mammals? Of course one can say that the small observable changes in modern species *may* be the sort of things that lead to all the major changes, but what right have we to make such an extrapolation? We may feel that this is the answer to the problem, but is it a satisfactory answer? A blind acceptance of such a view may in fact be the closing of our eyes to as yet undiscovered factors which may remain undiscovered for many years if we believe that the answer has been found. (p. 154, *Implications of Evolution*)

I think these words of evolutionist Kerkut are very wise words.

The extremely serious problem for believers in origin by progression is the lack of connecting links between the major taxonomic categories, i.e., between the families, orders, classes, and phyla. If you have read Darwin, you know this lack caused him very serious concern because a universal lack of connecting links was a lethal blow to his idea of organic evolution. Evolutionists characteristically, when other lines of evidence fail to demonstrate a possibility of production of new basic types, fall back upon paleontology.

Evolutionists Rely on Paleontology

A number of years ago, Dobzhansky and I exchanged some eight letters, nine his way and eight my way, in a discussion of variation and

fixity. I pressed him to give me even one coercive laboratory proof of macroevolution having occurred among living organisms. He explained to me, with consummate patience, that because of the universal discontinuity between groups of living plants and animals it was impossible to give any specific cases where organic evolution could be or had been observed to occur.

Dobzhansky wrote that evolution, like all historical facts, could not be reproduced in the laboratory. We had to accept it by faith. However, he said that evolution can be demonstrated paleontologically by the presence of connecting links between basic kinds among the fossils. He told me that his friend George Gaylord Simpson had just written a new book, *Tempo and Mode in Evolution*, which to him explained the fossil evidence for evolution very satisfactorily.

I hastened to secure a copy of the Simpson book, and found some most interesting assertions about the evidence among the fossils. For example:

The facts are that many species and genera, indeed the majority, do appear suddenly in the fossil record, differing sharply and in many ways from earlier groups, and that this appearance of discontinuity becomes more common the higher the level, until it is virtually universal as regards orders and all higher steps. . . .

The face of the record thus does really suggest normal discontinuity at all levels, most particularly at high levels, and some paleontologists . . . insist on taking the record at this face value. Others . . . discount this evidence completely and maintain that the breaks neither prove nor suggest that there is any normal mode of evolution other than that seen in continuously evolving and abundantly recorded groups (microevolution). This essentially paleontological problem is also of crucial interest for all other biologists, and since there is such a conflict of opinion, nonpaleontologists may choose either to believe the authority who agrees with their prejudices or to discard the evidence as worthless. (p. 99, *Tempo and Mode in Evolution*)

As you may well imagine, I hastened a letter off to my friend Dobzhansky, enclosing this quotation and several other similar statements from his friend Simpson's new book, and asked him to tell me how he could say that the fossil record demonstrated evolution when the same discontinuity between living types which, according to his statement, made a demonstration of evolution impossible, was present also between basic types in the fossil record.

That question is the reason why in our correspondence there were nine letters from me to

him and eight from him to me. He never answered my ninth letter. I assume he concluded by that time that I was just too dumb and dull to perceive evidence for evolution even when it was plainly before me.

Because paleontology is thought by most unread evolutionists to be the mother city of the strong which demonstrates in a coercive way the assumed fact of organic evolution, I will read to you assertions from several other well-known paleontologists. All these authorities are evolutionists. But, first, I will read another statement from Simpson's book:

As it became more and more evident that the great gaps remained, despite wonderful progress in finding the members of lesser transitional groups and progressive lines (microevolution), it was no longer satisfactory to impute this absence of objective data entirely to chance. The failure of paleontology to produce such evidence was so keenly felt that a few disillusioned naturalists even decided that the theory of organic evolution, or of general organic continuity of descent, was wrong, after all. (p. 115, *Tempo and Mode of Evolution*)

In Simpson's book, *The Major Features of Evolution*, written nine years later, we read:

In spite of these examples, it remains true, as every paleontologist knows, that most new species, genera, and families, and that nearly all new categories above the level of families, appear in the record suddenly and are not led up to by known, gradual, completely continuous transitional sequences. (p. 360)

In his text, *An Introduction to Paleobotany*, Chester A. Arnold wrote:

It has long been hoped that extinct plants will ultimately reveal some of the stages through which existing groups have passed during the course of their development, but it must be freely admitted that this aspiration has been fulfilled to a very slight extent, even though paleobotanical research has been in progress for more than one hundred years. As yet we have not been able to trace the phylogenetic history of a single group of modern plants from its beginning to the present. (p. 7)

Austin H. Clark, for many years an invertebrate zoologist and paleontologist with the National Museum in Washington, D. C., remarked:

When we examine a series of fossils of any age we may pick out one and say with confidence, "This is a crustacean"—or starfish, or a brachiopod, or annelid, or any other type of creature as the case may be. . . .

Since all the fossils are determinable as members of their representative groups by

application of definitions of those groups drawn up from and based entirely on living types, and since none of these definitions of the phyla or major groups of animals need be in any way altered or expanded to include the fossils, it naturally follows that throughout the fossil record these major groups have remained essentially unchanged. This means that the interrelationships between them likewise have remained unchanged. (p. 100, *The new Evolution—Zoogenesis*)

Alfred S. Romer, veteran paleontologist of Harvard, has written:

The chances of obtaining a complete graded series (if one existed) are hence obviously vastly less than in the case of more normal phyletic evolution (microevolution). "Links" are missing just where we most fervently desire them, and it is all too probable that many "links" will continue to be missing. (p. 114, *Genetics, Paleontology, and Evolution*)

Norman D. Newell of the American Museum of Natural History, has remarked in the *Proceedings of the American Philosophical Society*:

These finds (of assumed connecting links) are, however, rare; and experience shows that the gaps which separate the highest categories may never be bridged in the fossil record. Many of the discontinuities tend to be more and more emphasized with increased collection. (p. 103, Vol. 103, No. 2)

D. Dwight Davis, curator of vertebrate anatomy, Chicago Natural History Museum, has made the following frank statement about the fossil evidence:

The sudden emergence of major adaptive types, as seen in the abrupt appearance in the fossil record of families and orders, continued to give trouble. The phenomenon lay in the genetical no-man's land beyond the limits of experimentation. A few paleontologists even today cling to the idea that these gaps will be closed by further collecting, i.e., that they are accidents of sampling; but most regard the observed discontinuities as real and have sought an explanation for them.

But the facts of paleontology conform equally well with other interpretations that have been discredited by neobiological works, e.g., divine creation, innate developmental processes, Lamarckism, etc., and paleontology by itself can neither prove nor refute such ideas. (pp. 74 and 77, *Genetics, Paleontology, and Evolution*)

These statements are typical of what one finds throughout paleontological literature. Here among the fossils, the assumed history of the past, we are not dealing with subjective matters but with real objects which we can see with our eyes and handle with our hands.

And behold the discontinuity between clusters of forms is every whit as striking and universal as it is among living forms. True connecting links are found only between groups which are obviously all members of the same basic life form. Individuals of each basic type possess common morphological characteristics, and, as Dobzhansky expressed it, "gravitate to a definite modal point."

Some Connecting Links Proposed

In paleontological literature one occasionally comes across the assertion that such and such a fossil is the connecting link between two otherwise discontinuous groups. *Archaeopteryx* is an example. Progressionists often assert that it is the link between reptiles and birds. But the careful student of origins will perceive that in making such a statement the scientist departs from demonstrable science and becomes a speculator who may be thinking wishfully.

Actually many more fossil specimens than the *Archaeopteryx* would be necessary to demonstrate that birds developed from reptiles. Where intergrades *do occur* among the fossils, as for instance among ammonites, it would appear that the paleontologist is dealing with a polytypic species in which all the individuals are variant members of a single basic type.

Among living organisms when we find intergrades between two groups we know that the individuals are actually all members of a single larger genetical group. In paleontology the *Archaeopteryx* and all other assumed connecting links may well be independent basic types.

On this very point we have the following interesting statement by Ernest Mayr, well-known evolutionist taxonomist of the American Museum of Natural History in New York City:

Many of Darwin's followers, including most of the taxonomists of the old school, thought that the problem of species formation was solved when they found that intermediate forms connect what were formerly considered two perfectly distinct species. They concluded that species are transformed into new species as they spread into new areas. This complacent attitude was distinctly associated with the old morphological species concept and it reigned supreme until the new biological species concept began to replace it. Then it was suddenly realized by the more progressive systematists that those species between which they found intergradation were their own creations, and not biological units. As the new polytypic species concept began to assert itself, a certain pessimism seemed to be associated with it. It seemed as if each of the polytypic species . . . was as clearcut and as

separated from other species by bridgeless gaps as if it had come into being by a separate act of creation. And this is exactly the conclusion drawn by men like Kleinschmidt and Goldschmidt. They claim that all the evidence for intergradation between species which was quoted in the past was actually based on cases of infraspecific variation, and, in all honesty, it must be admitted that this claim is largely justified. (p. 114, *Systematics and the Origin of Species*)

In their search for the natural units of the living world, biologists in general and taxonomists in particular consistently have fixed their attention at too low a level and consequently repeatedly have become confused and have tripped over the many variants of large polytypic groups of general basic types. To use a common expression, they haven't been able to see the forest because of the trees.

In their search for real natural units they need to step back and fix their attention at a higher level, at a level where discontinuity clearly marks off the horses from the cows, the chimps from the men, the oaks from the maples.

This discontinuity among basic types is one of the most obvious and universal phenomena in both biology and paleontology. Connecting links between these basic types *do not exist*. If assumed links are found then the material under study very possibly all belongs to a single large polytypic cluster.

DNA: Stability, Not Unlimited Change

The molecular biologists and geneticists tell us today that deoxyribonucleic acid (DNA), located in the chromosomes, is the essential hereditary substance. They give us the rather startling information: (1) that DNA constitutes the genetic material of *all* organisms (except where RNA serves instead in certain viruses), and (2) that only two purines (always adenine and guanine) and only two pyrimidines (always thymine and cytosine), constitute the key material of this most important hereditary substance.

To illustrate, in the matter of their hereditary mechanisms, the only difference between man and mouse consists of the longitudinal sequences of these same four nucleotides (always joined adenine to thymine and guanine to cytosine). Each different arrangement in the longitudinal order of these nucleotide pairs in a chromosome results in a specifically different chemical situation in the cells of the organism. This different chemical picture within the cells produces the different morphological characters which distinguish one basic type, like a man or a horse, from all other basic types, like mice and cows and sheep and roses.

Not only do these different cell chemistries produce different morphologies, but it is becoming more and more obvious that they, through chemical incompatibility, make it impossible for hybrids to be formed between basic types. The sperm of one basic type, like a man, cannot enter into true fertilization with the egg of another basic type, like a chimpanzee.

The time is long overdue when taxonomists recognize that two basic criteria: (1) similar morphological characters and (2) true fertilization of the egg in which the whole paternal chromosome complement joins compatibly with the entire maternal chromosomal complement in building at least the early stages of the embryo, reveal the true basic units among living things.

A recognition of these true basic units will shift the systematist's attention from the confusion among variants at the low level of individuals, breeds, and subspecies, to the larger natural units which generally enjoy chemical compatibility among the members of their respective populations.

In 1941 I called these natural units "baramins," and since have tried to draw the attention of biologists to these units which, I would assume, are the modern descendants of the originally created kinds. It would appear that the modern polytypic species stands as a revelation of how far the various mechanisms of variation can go in the matter of producing change in the original basic types.

Terminology Reviewed

Perhaps at this point I should refresh in your minds the use in biology of the word "polytypic." This word was first applied biologically in 1940 by the English biologist Julian Huxley. "Polytypic" is a good word and used generally in biological circles. In these circles it refers to a species which is composed of two or more subspecies.

At the beginning of my remarks you will recall I made reference to the southern pocket gopher being a polytypic species in which Hall and Kelson presently list 214 subspecies. These polytypic species are the most obvious natural units in the world of living things, and have been and are being built up by processes of variation which some refer to as "microevolution."

For creationists the word, "microevolution," is unfortunate because the creationist accepts all demonstrable facts, including the processes of variation which work within basic types, and by so doing he appears to be an "evolutionist," i.e., a "microevolutionist." In the realm of semantics, all you need to do to become a microevolutionist is to recognize that variation has been and is going on within basic types, e.g., southern pocket

gophers. The evolutionist may refer to this type of change as "intraspecific."

The term, "macroevolution," is defined by evolutionists as the sort of change which would occur if one species were to produce a new species. However, because of the confusion which arises when the word "species" is used, it is better to say that macroevolution is an assumed process whereby one basic type produces a new basic type. In other words, macroevolution is synonymous with the expression "organic evolution." Thus all evolutionists and most creationists are microevolutionists, but only evolutionists are macroevolutionists.

Macroevolution is only a philosophy or hypothesis because it has never been demonstrated that one basic type can produce a new basic type. However, microevolution is occurring everywhere about us, and because of confusion on the part of evolutionists generally, they think that examples of microevolution demonstrate macroevolution. Beautiful books are published in which authors assumedly prove organic evolution by displaying examples of microevolution.

The book *Evolution*, authored by Ruth Moore and the editors of *Life*, and the *Atlas of Evolution* by Sir Gavin de Beer are beautiful volumes, but they present not even one case where organic evolution is illustrated. These books are filled with examples of the development of varieties within basic types.

Yet the authors seem unaware that every case they offer merely, more completely establishes the natural fact that all variation results only in new variants within basic types, which were already in existence. Such changes would never produce organic evolution.

Through his lack of acquaintance with creationists, the evolutionist believes they are too dull witted to recognize the occurrence of microevolution, and on the strength of this misunderstanding he righteously declares that they are "ignorant, dogmatic, and prejudiced." We need to understand each other better, and at the same time perceive the fact that all known processes of variation only result in new variants which are still 100%-members of the basic type to which their parents belong.

By processes of variation creationists mean those produced by environmental factors, hybridization, and the genetical types of recombinations, gene mutations, and chromosomal aberrations or chromosomal mutations. This latter group includes deletions, duplications, translocations, and inversions.

Search carefully through standard genetical texts and you will discover, that as a result of all these processes of variation, only a new variant

within an *already existing* basic type has ever been observed. This is variation (microevolution), but not progression (macroevolution).

Shall we give ourselves over unnaturally and fantastically to an obsession of progression which will lead us into error, or abide with that which is in harmony with all demonstrable facts?

Concluding Remarks

In my remarks this evening I have given most of my time to just two of the several areas from which evolutionists draw what they consider to be proof for organic evolution; namely, paleontology and variation. I have budgeted my attention in this way because these two areas are considered by progressionists to be the best sources of evidence for their hypothesis.

Other categories of assumed evidence for evolution are biogeography, comparative anatomy, comparative physiology, embryology, and taxonomy.

When we get right down to fundamentals, the evidence from all these areas leaves much to be desired because there is nothing compulsive or coercive in them. Instead, they are all subjective or circumstantial or persuasive in quality. This is the situation from the points of view of both creationists and evolutionists.

Permit me to illustrate what I mean by an item from comparative anatomy. Let us take a problem involving the bones of the forelimbs of vertebrates. Let us clean the bones of a forelimb of a man, a horse, a cow, a dog, a cat, an ape, a bird, a bat, and a whale.

With these bones cleaned and laid out on a table, we proceed to study them. This study discloses the interesting fact that the forelimbs of these vertebrates have the same three bones, the humerus, the radius and the ulna.

Having done this and made the discovery of the presence of the same three bones in all these vertebrate limbs, we have reached the end of demonstrable (sometimes called real or laboratory) science. We are now ready to enter the second phase of science, the speculative.

We sit down with the bones before us and ponder the significance of their similarity. Finally two hypotheses are reached: (1) the evolutionist says, "Here is proof that all these animals had a common ancestor. Therefore, macroevolution must have occurred"; (2) the creationist says, "Here is confirmation of Genesis, one Creator with a master plan."

Both suggestions are reasonable and logical. Which one is correct? Your answer here will depend upon where you wish to place your faith. The careful student must always bear clearly in mind which in science is *demonstrable* and which is merely *speculative*; and all the while maintain respect for the other man's decision.

Interestingly, every item of evidence which bears on origins is subject to interpretation from the points of view of both the creationist and the evolutionist. For that reason it is a sad day when any man maligns another because he chooses a different point of view on origins.

Today we weep that in our enlightened age when we congratulate ourselves on our alleged openminded study of all the problems of natural science, so much narrow-mindedness and dogmatism should be manifest when the subject of origins comes up for study.

In this day when we are fostering the erasure of all unbrotherly discrimination, how dare we clamor for the crushing or ostracizing of any point of view on origins which differs from ours? Dare we as scientists who laud openmindedness on all issues demand that only one point of view on origins shall be taught in our tax-supported schools?

I honor those legislators who right here in this city labored hard to pass a law which shall require that when the subject of origins arises in Michigan's public schools, equal time shall be given to special creation and evolution. May Michigan soon join Tennessee in such a fair, non-discriminatory law regarding this tremendously basic and important issue!

Many people hold the mistaken belief that evolution is a scientific theory, and that special creation is only a religious doctrine. I ask you, friends, have you felt this evening that I was presenting a religious discourse?

The truth is that both points of view can actually serve as models for correlation and prediction of scientific (observational) data. They should be evaluated on that basis. There is no known fact of science which cannot be at least as adequately explained by the special creation model as by the evolution model.

In the sense that historical events are not reproducible, any theory of origins must ultimately rest on faith. Neither special creation nor macroevolution can be observed to be taking place today. Neither type of origin is accessible to scientific observation or experimentation. In its acceptance, as much faith is required for one as the other.

Albeit, the natural fact that variation, without exception, only results in new varieties within an already existing basic type, joined with the most obvious fact of discontinuity between kinds, in my opinion, is at the same time opposed to the assumption of endless progression; and, is also in complete harmony with the concept of special creation and a literal Genesis.

I have studied and taught special creation for 43 years, and wish to recommend to you its de-

lightful harmony with all demonstrable facts of the natural world.

In view of the subjectivity of the evidence upon which a decision on the matter of origins must be made, creationists and evolutionists should each hold the other in respect. Because all men

are equal before God, and every one is a free moral agent, we must eschew demeaning and derogatory assertions about, and condemnatory opinions of, a man just because he is a creationist, or an evolutionist.

KOHOUTEK, COMETS, AND CHRISTIANITY

PETER A. STEVESON*

When compared to predictions and expectations of many, the comet Kohoutek was the disappointment of the century. Still, the immense publicity which it received raised questions to which creationists should find answers. The author notes that, while comets do not, as some have hoped, contain evidence about the origin of the universe or of the solar system, they can be considered as evidence for a young system, and hence for a young earth.

Introduction

Though analysis of the data is still continuing, a brief look at the 1973-74 winter phenomenon, comet Kohoutek, seems appropriate. No comet since Ikeya-Seki in 1965 has received the publicity which welcomed Kohoutek. Of course a unique study of the comet was possible since the comet arrived at the same time as the Skylab 3 trip.

Extreme predictions were made. Following are only three representative statements:

Kohoutek is believed to be a piece of debris left over from the birth of the solar system. The pictures hopefully will reveal many of the chemical elements of the comet and thus provide clues to the early history of the sun and planets, believed to have been formed 4.6 billion years ago.¹

It is very probably a new comet and so the determination of the orbit is very important. If it is a new comet it should leave some information not only about comets, but about the origin of the solar system.²

All through the space program, we've been looking for a Rosetta stone—what is the primordial material out of which the solar system is made? We looked for it on the moon and we didn't find it; we found other things instead. Now we're down to our last chance—the comets.³

Kohoutek is just one of many comets which have been observed over the years. Halley's comet, named for the man who first plotted an approximate orbit for it and who predicted its return in 1758, is probably the most well-known. Chinese observations of this comet date back almost two thousand years.

Biela's comet was first discovered in 1826. On its third return, in 1846, its nucleus split into two cores. These reappeared in 1852 but, on subsequent expected returns, only bright meteor showers were observed. Today, due to orbital perturbations, no trace remains of Biela's comet.

Encke's comet, however, has returned many times since its discovery by Pons in 1818. This comet is distinguished by having the smallest known period of any comet, 3.3 years.

For years, comets were little understood objects which were greatly feared. They were believed to represent evil spirits and were connected with human tragedies. John Maplet set forth the common belief in *The Diall of Destiny* in 1581:

These Comets doe prognosticate Warre, Commotions, sturres, stryfes; Treasons, and such like, because yt in the tyme of their Generation and continuance, exceeding heate ruleth and boyleth in men, which Incenseth and sturreth forwards thereto, the bodyes and myndes of men. And besides this, it signifieth more especially the death of Princes and Noble Personages, for that the Ayre which then is more grosse and viscourse through the corrupted matter of ye Comet, is not so wholesome for delicate and delicious Persons, as for the lusty and course Constitution of the bodyes & appetites of Labourers and Husbandmen.⁴

Even with Kohoutek, we have had a continuance of such superstitious belief. A group of young adults, all members of the controversial "Children of God" sect, carried signs in front of the United Nations building in New York to indicate that the United States would be destroyed in 40 days, by January 31, 1974.

According to the leader of the sect, David Berg, comet Kohoutek was a sign of this destruction.⁵ Astrologers have also predicted that the visit of Kohoutek is a bad sign for President Nixon.⁶

*Peter A. Steveson is the Chairman of the Bible Department, Bob Jones Academy, Greenville, South Carolina 29614.