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Special Creation and the Fossil Record: The Central Fallacy

Kenneth R. Miller

THE PROPONENTS of modern-day “scientific” creationism maintain that the “creation model” fits the facts of the fossil record more directly than does the so-called “evolution model.” This assertion, which is at the base of claims that special creation is a legitimate alternative scientific theory to evolution, is absolutely false. It survives in creationist literature intended for general audiences mainly because of a number of fallacies and semantic tricks which vanish quickly when the “creation model” is formulated in specific terms and critically examined.

Recent court cases in California and Arkansas have highlighted the claims of a number of groups throughout the country that “special” creation, or “scientific” creation should be given equal time with the theory of evolution in the teaching of high school biology. The concept of “equal time” for the two models is predicated on the notion that scientific creationism is a genuinely valid scientific theory, and upon the claims of its proponents that it represents an adequate means of explaining and interpreting the facts of natural history. In this article I will attempt to discuss the claims of special creationists with regard to the fossil record, and will try to see if their assertion that the fossil record supports special creation at least as well as evolution is justified in fact.

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Predictions of Scientific Creationism

To begin with, what do special creationists say their model would predict about the nature of the fossil record? As an authority on the special creation model, I will quote from Dr. Duane Gish, Associate Director of the San Diego-based Institute for Creation Research (ICR). Dr. Gish is the author of numerous books and articles on special creation, including two articles which have appeared in *American Biology Teacher* (Gish 1970; Gish 1973). In his 1973 article, Dr. Gish makes the following assertions regarding the two models:

Creation Model

By acts of a creator.

Creation of basic plant and animal kinds with ordinal characteristics complete in first representatives.

Variation and speciation limited within each kind.

Evolution Model

By naturalistic, mechanistic processes due to properties inherent in inanimate matter.

Origin of all living things from a single living source, which itself arose from inanimate matter. Origin of each kind from an ancestral form by slow, gradual change.

Unlimited variation. All forms genetically related.

And, he says that these models would allow the following predictions to be made about the fossil record:

Creation Model

Sudden appearance in great variety of highly complex forms.

Sudden appearance of each created kind with ordinal characteristics complete. Sharp boundaries separating major taxonomic groups. No transitional forms between higher categories.

Evolution Model

Gradual change of simple forms into more and more complex forms.

Transitional forms linking all categories. No systematic gaps.

Like any good scientist, he then says, "Let us now compare the known facts of the fossil record with the predictions of the two models." As you might have guessed, in the comparison which follows, the facts seem to fit the creation model most directly. This kind of treatment of the facts of the fossil record is the sort of thing which one sees again and again in creationist literature. But it contains two very serious fallacies—one of which evolutionary biologists spot quite quickly and are generally well-prepared to argue against—but another fallacy, a fatal one, exists in this analysis which evolutionary biologists generally have been slow to realize. It is this second flaw which is absolutely fatal to special creation, and hence has been strategically avoided by its proponents. We will take a look at what special creationists say about the fossil record, and see where both of these flaws are to be found.

Creationist Characterizations of the Fossil Record

The first point that Gish makes is that the major living groups have appeared suddenly in the fossil record:

From all appearances, then, based on the known facts of the historical record, there occurred a sudden great outburst of life at a high level of complexity. The fossil record gives no evidence that these Cambrian animals were derived from preceding, ancestral forms. Furthermore, not a single fossil has been found that can be considered a transitional form between the major groups, or phyla. (Gish 1973)

This general outline of the fossil record is argued not merely in Gish's own words, but by well-chosen quotes from a number of eminent evolutionary biologists, among them Neville George and George Gaylord Simpson. Continuing, Gish states:

The remainder of the history of life reveals a remarkable absence of the many transitional forms demanded by the [evolutionary] theory. There is, in fact, a *systematic* deficiency of the transitional forms between the higher categories, just as predicted by the creation model. (Gish 1973)

Considering the supposed evolution of the vertebrate classes, Gish explains why *Ichthyostega* cannot be considered a transitional form between fishes and amphibians (he says it is already of the amphibian type). Gish also disposes of the excellent transitional series between reptiles and primitive mammals as he writes:

Every reptile, living or fossil, however, has at least four bones in the lower jaw and only one auditory ossicle, the stapes. There are no transitional forms showing, for instance, three or two jaw bones or two ear bones. (Gish 1973)

He dispenses with *Archaeopteryx*, a transitional form between reptiles and birds, by saying:

All paleontologists now acknowledge that it [*Archaeopteryx*] was a true bird. It had wings; it was completely feathered; it flew. It was not a half-way bird; it *was* a bird. No transitional form with part-wings and part-feathers has ever been found. (Gish 1973)

Quoting again from well-known scientists, Gish argues that gaps in the fossil record are the rule rather than the exception. On this point he is on firm ground indeed, supported quite recently by such first-rate scientists as Stephen Jay Gould and Niles Eldredge who have suggested that the nature of the fossil record, with frequent gaps and discontinuities, illustrates the rough and jerky pace of evolutionary change. Finally (and very much in triumph), Gish discusses the lack of fossils showing the evolutionary origin of higher plants:

Concerning the plant kingdom, the following remark of E.J.H. Corner (1961) of the Cambridge University botany school, is refreshingly candid: "Much evidence can be adduced in favor of the theory of evolution—from biology, biogeography and paleontology, but I still think that to the unprejudiced, the fossil record of plants is in favor of special creation." (Gish 1973)

And further: "Now, creationists ask: what better description of the fossil record could one expect, based on the predictions of the creation model?" (Gish 1973) Indeed! Gish seems to have made a strong case for the "creation model"! But has he really?

The Response of Evolutionists

The reaction now of most experienced evolutionary biologists, when confronted by such assertions, is to challenge them directly. The notion that no transitional series are found in the fossil record is simply not true, and, in fact, the best example of such a transition is the evolution of primitive mammals from reptilian forms (Crompton and Parker 1978). In addition, *Archaeopteryx* is in fact a perfect transitional form! The skeleton of *Archaeopteryx* is entirely reptilian in character, and it would have been classified as a reptile were it not for the fact that impressions of feathers have luckily been preserved on some of the fossils. Furthermore, despite the assertions of Gish that these feathers are fully modern in every respect, the feathers of *Archaeopteryx* lack the quill impressions which attach the flight feathers of modern birds to the bone for secure anchoring. In other words, *Archaeopteryx* looks like a bipedal reptile which had developed feathers. Can one imagine anything more transitional?

Similar arguments can be, and of course have been, made on every other point Dr. Gish makes about the fossil record. For example, the large gaps between the various phyla exist precisely because they represent the oldest divergences of living populations. Furthermore, Dr. Gish fails to appreciate that when Gould and Eldredge speak of "sudden" changes they mean changes occurring over perhaps 50,000 years. That is indeed sudden in geological terms, but not in the way in which Gish attempts to use it, implying the need for divine intervention to bring about a "sudden" appearance or transition.

These problems with Gish's presentation (and the writings of other creationists on the fossil record) represent the first fallacy of which I spoke earlier, namely the

fact that many of their assertions (the supposed absence of multicellular forms from pre-Cambrian fossils, the lack of evidence of slow and gradual evolutionary transition, and the total absence of so much as a single transitional form) are simply and demonstrably wrong. On this ground many excellent critiques of their work have appeared in this and other journals (Alexander 1978; Brush 1981; Callaghan 1980; Gurin 1981).

Creationism—The Central Fallacy

However, to someone who is not an evolutionary biologist (my own training and research work is in cell biology), the remarkable thing about the series of arguments the creationists have developed is not the first flaw of which I have already spoken, but the second flaw: Gish has not correctly stated the predictions of special creation! Rather, he has twisted those predictions so much that it is often impossible to see the model behind the argument. Indeed, my first impression was that Gish and other creationists were arguing for a series of creative acts in which individual species were suddenly created, without transitions and without intermediate forms. I supposed, after reading about the gaps and the sudden appearances of major groups, that Dr. Gish was suggesting that each major group was uniquely created during living history, and that each sudden appearance of a new form was an individual manifestation of a remarkable creative process. Several hundred creation events occurring throughout the history of the planet might indeed be used to explain many features of the fossil record. To my very great surprise, special creation suggests something totally different!

The basic tenets of special creation as they regard the origin of living things are quite clear. All living things, according to ICR and other creationist literature, were formed during a single creative period (it may have lasted a single week) which took place at least 6,000 but not more than 10,000 years ago. This basic tenet of creationist teaching is nowhere to be found in Dr. Gish's article, or, for that matter in his book, *Evolution? The Fossils Say No!* Why is this aspect of scientific creationism missing from their critiques on evolution and the fossil record? For a very simple reason: Dr. Gish's own characterization of the fossil record contradicts the doctrine of a single creation!

As an example, let us consider the sudden appearance of the angiosperms ("higher plants" as referred to earlier in the quote from Corner) about 150 million years ago. If one accepts the creationist characterization of the "sudden" appearance of these plants, without apparent ancestral forms, then the concept of a single creation is immediately disproven. Why? Because if the angiosperms (and, for that matter, the mammals, birds, reptiles, amphibians, etc.) were all formed in a single creation event, then we should find all forms present all the way through the fossil record. The oldest rocks should contain the greatest diversity of life, and according to special

creation, all strata would contain the remains of present-day life forms, including man, so that no forms would "appear" suddenly in the fossil record. But the fact of the fossil record, as any student of natural history knows, is entirely the opposite! The greatest diversity of living forms is found in the most recent rocks, and many, many living things, including higher plants (and man) are recent appearances in the fossil record. By any analysis, the teaching of a single creation is not merely unsupported by the evidence—it is disproven!

"Flood Geology" to the Rescue?

How do the special creationists deal with this fatal flaw? By resurrecting a thoroughly disproven concept known as "flood geology." They suggest, in a nutshell, that all of the fossil record and all ancient plants and animals were formed during a single worldwide catastrophic flood. That flood lasted at most 300 days, and produced the entire fossil record as we now know it! The details of this process can be found in several ICR publications, including *Scientific Creationism* by Dr. Henry Morris, ICR Director. To a reader like myself, the remarkable message of this work is that the entire fossil record is merely an illusion produced by the sorting-out action of the flood.

The geologic column does not represent the slow evolution of life over many ages, as the evolution model alleges, but rather the rapid destruction and burial of life in one age, in accordance with the creation model. (Morris 1974)

The flaws and fallacies and contradictions of this model are almost too numerous to recount. For example, every single evolutionary series which has been documented (and, gaps and all, there are hundreds of such series) would have to have been produced by the sorting action of the flood waters. In other words, when a remarkable series of evolving forms like the series leading to the modern horse is considered, the special creationists must teach that all the various forms and species were in fact created at the same time. And further, that the illusion of an evolutionary series was created by a differential sorting action which accompanied the flood. More bluntly put, *Equus* (the modern horse) tread water for a longer time than *Mesohyppus* (an intermediate form), and *Hyracotherium*, a small ancestral form, was a poorer swimmer still. Therefore, they have been buried in the imaginary "sequence" from which we now dig them up. This incredible mechanism must account not merely for the horse series, but for every evolutionary sequence known! Such a mechanism for sorting out animals is incredible enough, but even greater stretches of the imagination are required to account for the late, "sudden" appearance of the higher plants (angiosperms). Did the higher plants "flee" to high ground, and hence appear only later in the geological record of the flood? The more one considers the fossil record, the more laughable the notion of flood geology becomes.

Nevertheless, it is this system of flood geology upon which special creation must base its interpretation of the natural history of this planet. For the special creationist, flood geology is an embarrassment, a skeleton in the intellectual closet. It is absolutely necessary, for special creation to exist as a complete model, that flood geology be included to explain the overwhelming contradiction of the fossil record with a single creation. And yet, this lynchpin of the "creation model" is such an embarrassment that creationists writing on the fossil record avoid it almost completely. Avoiding flood geology is good debating strategy, but it is dishonest science.

It should be emphasized here that flood geology is not an optional feature of the "creation model." Rather, it is the only way in which the doctrine of a single creation event can be reconciled with the fossil record; therefore, it is mandatory that flood geology be accepted along with special creation. Does this flood geology in fact produce agreement with the facts of geological science? It is not even close! In addition to requiring us to believe that every sequence of fossils was accidentally set in order by the sorting action of the flood, it must further demand that every single fossil-containing geological formation was set down in the course of a single year! In the Grand Canyon, for example, one can examine more than a mile of sedimentary rock formations which must, according to special creation, have been formed during this single catastrophic flood. The succession of fossils in the canyon extends far into the past (600 million years), and well-refined radiometric dating methods have been used to confirm the dating of each layer. Special creationists are not fond of radiometric dating, but they must be called upon to explain how a single flood could sort out the isotopes of rubidium, strontium, potassium, argon, lead, and uranium in such a way that each layer appeared just a little older than the one above it, at the same time that fossils were accidentally being formed into an illusion of an evolutionary sequence, stretching back over 600 million years. Flood geology is a total failure, and was abandoned by geologists more than 100 years ago. Today, there is even more reason to reject it than there was in the last century.

The Strategies of Creationists

How then have special creationists attained their limited successes in advancing their alternative "model"? In part, their arguments have depended on not saying exactly what special creation really is—in not being specific about their model. When the fact that a fossil record of gaps and sudden appearances is contradictory to special creation is understood, one must then bring forward the hapless corpse of flood geology, and the whole "scientific theory" collapses like a house of cards. This is the great problem which the special creationists must deal with. Dr. Gish and his colleagues at the ICR and the rest of the special creation movement can only fashion co-

herent arguments when they avoid being specific about the nature of the "creation model." In rhetorical terms, they have been successful in doing exactly that, and in pretending that the fossil record is on the side of special creation. However, when they are forced to discuss their model in detail, suddenly the facade collapses. The central fallacy of special creation is exposed and the "scientific theory" can be understood for what it really is: a religious doctrine supported only by a literal reading of the book of Genesis, and not by scientific fact!

Why Scientific Creationism is a Religious Idea

There is a remarkable point worth making here. The proponents of special creation claim to be scientists interested in showing how valid facts of science can be interpreted by an openminded person in a way consistent with creation. To the genuinely openminded, the fossil record is indeed consistent with direct divine intervention, but of a different type. One could propose, for example, that every appearance of a new living form represented an act of divine intervention. In this "model," a creator would have made a very small three-toed horse, then a few million years later, a larger three-toed horse, then a few million years later, a one-toed horse, then eventually our modern horse. Such a model would fit the fossil record perfectly. Indeed, such a model could fit any observation. Yet, this model is rejected by the special creationists. Is it rejected on scientific grounds, because it does not fit the facts? Of course not. It is rejected because it does not match a literal reading of the Book of Genesis. At the same time, the single creation doctrine (along with the great burden of flood geology) is embraced, despite its problems with facts, precisely because it does match the Book of Genesis. This point is why special creation or "scientific creationism" is a religious concept, even if it is presented without using the word "God" or quoting scripture. It is religious, because religious doctrine and not scientific fact has been used to make the basic choices which have formed the "model."

When we discuss the theory of evolution, it is worth keeping in mind that there are really two questions which we are asking at the same time. These are: "What happened in the past?" and "How did it happen?" Even before the work of Charles Darwin, the answer to the first question was clear: life had changed; the life of the distant past was very different and had changed (evolved) into the life we know today. Darwin's contribution was to suggest an answer to the second question—to provide a mechanism by which the record of changes could be understood for the first time. When we speak of evolutionary theory, we are dealing with the question of mechanism, and are very much on theoretical grounds. However, the first question, "What happened in the past?" can indeed be addressed in factual terms, and we need not be tentative in giving our students an answer.

It is fair to say that we do not have a basic understanding of the mechanism of evolutionary change. Special

creationists are therefore correct when they point out the inadequacies of our best evolutionary theories to explain every facet of the living world. But it is also true that the richness of the fossil record has given us a remarkably good picture of what the world of the past was like. And, the basic argument between special creation and evolution is centered on whether life has changed (evolved) during the history of this planet, or whether it has remained fixed throughout the ages. To that question the tens of millions of fossils in the museums of the world give only one answer: *evolution took place*.

Evolution is a fact.

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Difficulties

. . . from p. 84

have underscored these findings. With this in mind, the following summary is offered, along with suggestions for instruction:

1. Most students will be able to solve monohybrid cross problems although a subset of this group will be doing so in a non-meaningful fashion. That is, they lack adequate knowledge of how meiotic division and segregation of chromosomes (and genes) are related to their manipulation of symbols in Punnett squares.

2. Even students who do monohybrid cross problems meaningfully may not be able to relate what they do in a dihybrid cross problem to meiosis and gamete formation. The difficulty appears to be related to an algebraic problem-solving method, which makes the identification of gamete genotypes less clear. Biology teachers must take steps to tie such algebraic methods to meiosis if meaningful problem solutions are to be reached.

3. The difficulty that many students experience in solving dihybrid cross problems was not related to their inability to use combinatorial reasoning to generate gamete genotypes. Their problem lay in not being able to indicate why combinations, other than correct combinations, were incorrect. This was taken to mean that what they lacked was an adequate knowledge of genetics and meiosis and not the ability to correctly use combinatorial reasoning.

4. Students may understand complex processes such as segregation even though they do not attach the linguistic symbol (that a teacher uses) to their understanding.

5. With few exceptions (see 4 above) students were able to provide acceptable definitions of most concepts used in instruction. However, they did have difficulty describing how concepts are related. The obvious suggestion for teachers, if their goal is to provide students with a coherent view of genetics, is to make their instruction much more explicit in terms of concepts interrelationships.

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