

# A Layman Looks at the Fossil Record

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## Introduction

My purpose below is to show the significance of the fact that every complete organism which becomes a fossil must be preserved rapidly for fossilization to operate. Otherwise, it succumbs to decay or is eaten and no body exists to preserve. Teeth are very durable but soft body parts start to decay in a matter of hours. Thus, the fossil record--the centerpiece of the uniformitarian model--is actually evidence against that model. Throughout this paper, unless stated otherwise, when I speak of fossils I mean complete fossil organisms.

God has two books--His written Word and nature. Both testify to actual events. So to the extent they deal with the same events they should agree. And yet we must realize that the enemy has a vested interest in making them appear to disagree. By misrepresenting the one he can attack the other. Thus, the qualities of faith and humility are just as necessary when studying nature as when studying Scripture.

The deepest students of science are constrained to recognize in nature the working of infinite power. But to man's unaided reason, nature's teaching cannot but be contradictory and disappointing. Only in the light of revelation can it be read aright. "Through faith we understand." Hebrews 11:3.<sup>1</sup>

Some points will undoubtedly continue to occupy us in eternity. There will always be more to learn. And so the present task is not to finish the discussion but to point out one area of research where the above concepts offer a useful starting point.

## Rock as a Means of Preserving Fossils

For rock to form, something must make its component substances formable. The two most common means of doing this are intense heat and the abrasion of particles borne in water. Basically two kinds of rock result from such processes: igneous (from the Latin word *ignis* meaning "fire") and sedimentary (laid down by water). Metamorphic rocks start in one category and are later redeposited in the other.<sup>2</sup>

Igneous rock is rock that has been either melted or fragmented by volcanic activity and which has reached the earth's surface before solidification. The sources of volcanic magma are the mantle and lower crust of the earth. Magma comes to the surface at temperatures ranging from 700 to 1200°C (approximately 1300 to 2200°F). Any living things overtaken by a lava flow are therefore incinerated rather than preserved for eventual fossilization. Igneous rock requires no further discussion here.

## The relationship between fossils and sedimentary rock

Fossils that reside in rock reside in sedimentary rock, i.e., rock whose formative substances were deposited by water. There is no shortage of fossils on our planet.<sup>3</sup> Otherwise, there could be no geologic column (see below). There is a special relationship between sedimentary rock and fossils. The two are routinely associated with each other.

One question that anyone studying sedimentary rock must eventually ask is why there should be so much of it. By one estimate as much as three fourths of the earth's surface consists of sandstones, shales (or mudstones), limestones, conglomerates, or the like.<sup>4</sup> A second question is why it should be characteristic of sedimentary rock to preserve fossils. These questions should be answered together. It is entirely reasonable to suggest that the vast quantity of sedimentary rock on our planet is related to the number of fossils captured in it, i.e., that whatever accounts for the one fact accounts for the other also.

A third question is whether the relationship between sedimentary rock and fossils is continuing to develop now as it did in the past. If it is not, or if the rate of preservation has slowed down significantly, then something happened in the earth's past that is not happening now. And if this is the case, the fact bears directly on the present argument.

## Is the geological column an objective reality in nature?

There is no single location on our planet where one can go to observe fossils in a continuous series from each of the proposed geological ages. The Grand Canyon goes all the way down to Precambrian times and of course, at the rim, extends in the opposite direction up to the present, but some of the layers that one would expect to find in a complete geologic column are missing.<sup>5</sup> Why is this?

One receives the impression from geological textbooks that the strata are essentially harmonious everywhere, with the oldest on the bottom, each stratum succeeded in turn by one representing the next period. Of course this is not so, and everyone familiar with the facts recognizes that it is not so. The geologic time series is built up by a hypothetical superposition of beds upon each other from all over the world.<sup>6</sup>

What I am saying is not that there is a place where one can go to find a gap in the column but rather that there is no place where one can go to find the absence of gaps. Locally one can see partial contiguous sequences, but nowhere the full array that one would expect. In this regard the Grand Canyon is typical of what geologists find--or fail to find--everywhere. One site has these layers, another has those layers. But no single site has all of the proposed layers.

## Is the geologic column still continuing to form?

If the present is the key to the past, as Charles Lyell asserted, the geologic column should be continuing to form, which means not only more rock but--crucially--more fossils.

(Without fossils there would be no column.) So the question is not whether sediments now being deposited would become rock given sufficient time. They would. But that is not a test case for Lyell's model. The question is whether such sediments preserve fossils now as they once did in the past.<sup>7</sup>

The argument can now take one of two directions. On the one hand, if rocks currently forming do not have fossils or do not have them in proportions similar to those found elsewhere in the geologic column, the processes by which that column formed initially are not at work now. To yield this point in a robust sense is to accept the falsification of Lyell's uniformitarian model. On the other hand, if the same processes are in fact at work now which produced so rich an array of fossils in the past, what are those processes? Let us learn from them. Below I proceed under the latter set of assumptions.

## Initial Preservation of Organisms Pending Fossilization

Fossils are still being formed today. The process has not entirely died out. But what does it mean for something to become a fossil? And under what circumstances does this happen? There are a number of ways in which fossilization can occur. By this I mean that the whole organism or a cast of its overall form is preserved and not only its skeleton (especially teeth), its component carbon, or a cast of its tracks.

Entire organisms can be preserved variously by rapid deposition in sediment, by freezing, or by petrification. But one thing that all fossils have in common is the fact that they are preserved in some manner. What they are preserved from is the normal process of decay. When a fish or an animal or whatever dies it can be eaten, deteriorate normally, or be preserved from these eventualities in some way. However long it takes for these other things to happen, a time less than that by some margin is the window of opportunity for the initial stages of fossilization to occur. Whether we are talking about freezing or deposition in sediment, the process of preserving must operate faster than the process of decaying. My point is that, although complete fossilization takes a long time, the initial act of preservation must occur rapidly.

### Rapid actions frozen in time

In the *National Geographic* for August 1985 there is an article entitled, "Fossils: Annals of Life Written in Rock."<sup>8</sup> One picture in that article shows the skull of a large sabertooth cat with one fang embedded in the leg bone of another similar cat.<sup>9</sup> Whatever we might believe in regard to trilobites and dinosaurs, it does not take a million years to finish a cat fight. They are very quick. But these cats died in the act of fighting. It is of course possible that the one cat's fang became so deeply embedded in the other's leg that the two were unable to disengage and died where they were of exposure. I say this is possible, but there are good reasons to believe that it is not the best hypothesis.

Another picture in the same article, representing the same site, shows two fossil fish (*Gosiutichthys parvus*), the larger one swallowing the smaller. This action is preserved in exquisite detail--frozen perfectly in time. So while we might argue that the two cats in the previous paragraph met their fate slowly, how can the same reasoning be extended to account

for the two fish? How long does it take for a fish to swallow? Once we finish obtaining that information, the time available for both of them to be buried in sediment was about half that long. The smaller fish was half way down when the action was stopped in midcourse.

These might be unusual examples, but they illustrate a principle having general applicability, i.e., that the initial preservation of fossils must occur rapidly. Teeth and other bones taken in isolation do not require such an explanation but whenever soft parts or actions are preserved we can be sure that the process which initially preserved them did not take long.

*The uniformitarian rule.* In a paper such as this one I cannot exhaustively document a case for flood geology based on fossils. But taking this one example further, the Green River formation in which the above cat and fish fossils were found--along with many others--"is part of a series of freshwater lake-bed sediments turned to rock . . . which covers 25,000 square miles to a depth of 2,000 feet."<sup>10</sup> Oceanic sediments on the continental shelves today reach a maximum thickness of about 20,000 feet, or ten times that of Green River, but pelagic sediments in the deep oceans even today measure only 1000 to 1200 feet, or about half that of Green River.<sup>11</sup> Clearly we are talking about a big lake.

Granting this, however, raises a problem. Any lake which achieves oceanic levels of sediment with deposition occurring at no more than current rates<sup>12</sup> is doing so under the most extraordinarily stable of conditions. How then are we to account for the geologically instantaneous disruptions required to capture rapid fossil actions such as those documented above?

My argument does not depend crucially on the fact that fossil actions are occasionally frozen in time, although when this happens it does illustrate the point nicely. The fact that entire living organisms are preserved at all--with or without obvious motion--illustrates the same point. Nothing that flies, walks, or swims can have been trapped by a gradual silting up process measured in centimeters per year. So no completely preserved fossil fauna can be accounted for under such assumptions. And neither can any completely preserved fossil flora. See appendix.

Geologically I am sure that my back yard is undergoing normal change. But every year my wife's beautiful flowers grow, enhance our lives for less than a fraction of a geological moment, and then wilt, die, and decompose quite naturally without being overtaken and preserved in the ongoing accumulation of dust or whatever. When nothing much is happening geologically, it of course takes a long time to see results. But there are two factors here, either of which could be systematically varied. It is not necessary to assume that, because scientists find what they do in nature, the only way to account for it is to increase the amount of available time. One could just as reasonably posit a higher level of geological activity. At the outset either explanation is equally plausible. The question is which one accounts for more of the data, where by data I mean not only nature in isolation but nature taken together with Scripture.

*The unavailability of exceptions.* The above facts leave nothing at all whose fossilization can be convincingly accounted for on uniformitarian principles--not one complete fossil organism, ever, anywhere. In every case local catastrophes must be invoked.

A paradigm example of such an invocation appears in Stephen Jay Gould's book entitled, *Wonderful Life: The Burgess Shale and the Nature of History*.<sup>13</sup> The Burgess Shale is located in British Columbia. The layer that has been studied most extensively is little taller than

a man and in length less than a city block, but it contains, in Gould's words, "more anatomical disparity than all the world's seas today."<sup>14</sup>

Darwin wrote that our imperfect fossil record is like a book preserving just a few pages, of these pages few lines, of the lines few words, and of those words few letters. Darwin used this metaphor to describe the chances of preservation for ordinary hard parts, even for maximally durable teeth. What hope can then be offered to flesh and blood amidst the slings and arrows of such outrageous fortune? Soft parts can only be preserved, by a stroke of good luck, in an unusual geological context—insects in amber, sloth dung in desiccated caves. Otherwise, they quickly succumb to the thousand natural shocks that flesh is heir to—death, disaggregation, and decay, to name but three.<sup>15</sup>

The Burgess Shale preserves not only a wide range of specimens but does so in the smallest detail. It is a paleontological treasure.<sup>16</sup> I wish that I could discuss this assemblage at greater length, but my reason for mentioning it at all has to do with Gould's explanation of how these fossils were initially preserved. He mentions three prerequisites for doing so:

. . . rapid burial of fossils in undisturbed sediment; deposition in an environment free from the usual agents of immediate destruction—primarily oxygen and other promoters of decay, and the full range of organisms, from bacteria to large scavengers, that quickly reduce most carcasses to oblivion in nearly all earthly environments; and minimal disruption by the later ravages of heat, pressure, fracturing, and erosion.<sup>17</sup>

One reason why the above prerequisites do not all come together more frequently in the fossil record is that the abundant light and oxygen that make it possible for organisms to live also make it almost impossible for them to be preserved as fossils after they die. Their surroundings must change from those where light and oxygen are both present to one where they are both absent. Gould speculates that this is in fact what happened at the Burgess quarry so long ago.

The pinpoint distribution of the Burgess fossils supports the idea that they owe their preservation to a local mudslide. Other features of the fossils lead to the same conclusion: very few specimens show signs of decay, implying rapid burial; no tracks, trails, or other marks of organic activity have been found in the Burgess beds, thus indicating that the animals died and were overwhelmed by mud as they reached their final resting place.<sup>18</sup>

Thus, a local mudslide accounts for the marvelous diversity of the Burgess Shale. Presumably other local mudslides will account for the layers found elsewhere along something less than two hundred feet of exposed surface at the same site. But there the fossils are not of the same quality as those in the main layer discussed above.

*Problems with the local catastrophe theory.* Let us apply Gould's principle to what we have learned about Green River. At the Burgess quarry we are talking about a fossil bed which, as Gould emphasizes, is small. The Green River deposits, by contrast, cover vastly more territory. The same level of fossil integrity is achieved at both sites. Can the same explanation that Gould offers in the one case be made to apply in the other? Let us attempt to do so. But how local is a mudslide covering 2500 square miles to depths of up to 2000 feet? Perhaps there were many local mudslides. How many would be required? Such an explanation must be multiplied

countless times as more and more fossils are found buried in Green River sediment. Eventually one suspects from this pattern that a generalization is being missed. But let us continue on with local mudslides as a working hypothesis. What special insight does Gould's model give us into the extremely stable conditions required to allow oceanic depths of sediment to accumulate there at current agonizingly slow rates?

There is something in the local catastrophe theory that does not apply well at Green River. Even if it did, the only point we could hope to make by applying it is that the initial preservation of entire fossil organisms is always an exception to uniformitarian principles. But if everything is an exception, there is no rule. To account for the fossil record--in every case where it attempts to do so--the uniformitarian idea must be extended to include an appeal to local catastrophes. And so, with complete consistency, it is the exception and not the rule which accounts for the data. This is not the classic profile of a useful model.<sup>19</sup>

### Mammoths frozen in permafrost

What I have discussed above is not an isolated phenomenon. Consider the celebrated case of Siberia's frozen mammoths. According to Scott M. Huse, a creationist writer, Charles Lyell "suggested that they were caught in a cold snap while swimming."<sup>20</sup> That particular cold snap has lasted to the present day. Nor will a rapid change of temperature alone suffice to account for what happened to them. These mammoths are buried in permafrost. Permafrost is made up of frozen silt and other frozen soils.<sup>21</sup> Something caused the silt to gather around them and whatever that was happened rapidly enough that they could not escape from it by walking or running. While most give evidence of decay, showing that they were exposed prior to burial, others have undigested food in their stomachs. Some burials took place under extremely violent conditions.

"This is exactly the state of affairs we find in Alaska, where the mammoths and other animals, with one or two significant exceptions, were all literally torn to pieces while still fresh. Young and old alike were cast about, mangled and then frozen. There are also, however, other areas where the animals are mangled, but had time to decompose before being frozen; and still others where they decomposed down to bones and were then either frozen or not. Beyond these again, there are similar vast masses of animals, including whole families or herds, all piled together into gulleys and riverbeds and other holes, but where only bones remain."<sup>22</sup>

We should now ask whether there is any connection between what happened to the fossils in the Green River formation of Wyoming and what happened to the mammoths and other animals from the Lena River drainage in Siberia all the way across to Alaska? The question can be asked another way. If the Green River fossils were buried rapidly, and if the entire 2500 square mile area represents a single assemblage, as the use of one name to describe it would imply, then the forces required to bury this area under as much as 2000 feet of sediment quickly enough at any given point to stop a cat fight in midcourse and prevent a fish from completely swallowing its last meal must have been violent beyond all imagination. Is it reasonable to assume that such forces, once unleashed, would operate nowhere at all beyond the 2500 square miles in question? Or could we expect what happened there to have at least some broader geological implications?

Once again, what sort of forces would be required to tear living mammoths apart, bury possibly millions of them in silt over an area some two to three thousand miles across (whatever

its area might have been), and then permanently change the climate of the region so dramatically that not all of these animals had time to decompose? Can forces on this scale operate without having at least some effect on what was happening at the same time, for example, in Wyoming? In the mangled condition of many of the above mammoths we once again have motions of fossils frozen in time, not merely the fossils themselves. And if these two isolated events are in fact related, what implications must that fact have for the rest of the planet? Local mudslides did not simultaneously bury countless mammoths other animals from Siberia to Alaska, some under extremely violent conditions.

### Mapping geological time onto biblical time

So far I have tried to show that it is reasonable to place geological events in a recent and tightly constrained timeframe. It is just as easy to explain past events by positing an increased level of activity as it is to posit an extension of time. But whichever factor we allow to vary, the level of variance will be the same. Those who increase the available time place the Cambrian explosion (of new life forms) at about six hundred million years ago, or five orders of magnitude earlier than the Bible places creation. Those who increase the level of geological activity in response to the world-wide Genesis flood must do so on a comparable scale. So if there is much time but little activity, there must be vastly more time. And if there is much activity but little time, there must be vastly more activity. This is one point.

Creationists must also argue that the various proposed geological ages are not ages (distinguished primarily in time), but different phases of the flood's activity (distinguished primarily by what was happening then). There is a way to test such a hypothesis. If the geological ages are ages, it would be inconceivable for them to occur out of sequence. If they are something else, they could be in sequence or out. So the question is, Do the various parts of the geologic column occur in sequence or not? Let us put the matter to the test of hard empirical data.

It turns out that the geologic column is not so neatly organized on the ground as we might suppose from reading about it in textbooks. It has not been laid down everywhere in the same sequence. For that matter, it has not been laid down everywhere in any sequence. Flood geologists take this fact as evidence that the geologic periods are not chronologically distinct epochs but (starting at the end of the Paleozoic) are merely different phases of the flood's extraordinarily diverse activity, all occurring more or less at the same time, over the course of about a year. If the topic were computers instead of rocks, we could use the term "parallel processing" to describe the relationships among the various geological ages.

Thus, while all the events recorded in the geologic column really did happen, they did not occur so long ago as uniformitarian geologists suppose. And although consistency is not completely absent from the geologic column, it is not completely present either. This is a problem for the uniformitarian model. It is not enough for the evolutionist to point out that there is some order in the column. On a small scale of course the order of layers could be reversed by later overthrusting. But, just as in our earlier comparison of the Burgess quarry and the Green River formation, such explanations only take us so far. When the sheer mass of material to be rearranged goes beyond a certain point we must consider other explanations.

*The Heart Mountain Thrust.* The geological record is replete with major discontinuities. One example of this is found at the Heart Mountain Thrust in Wyoming, which, if what I am

saying here is true, has been misnamed. At issue is whether it illustrates thrusting or initial deposition out of sequence.

This supposed thrust occupies roughly a triangular area, 30 miles wide by 60 miles long, with its apex at the northeast corner of Yellowstone Park. It consists of about 50 separate blocks of Paleozoic strata (Ordovician, Devonian and Mississippian) resting essentially horizontally and conformably on Eocene beds, some 250,000,000 years younger! . . .

Although there are some brecciated sections near the contact line, the supposed thrust blocks certainly give every appearance visually of having been deposited more or less normally on top of the beds beneath.<sup>23</sup>

*The Lewis Overthrust.* Another similar example of deposition out of sequence (or later overthrusting) is the Lewis Overthrust of Montana, approximately 135 miles long and 15 miles wide, which includes the Glacier National Park area. The fault plane of the Lewis Overthrust dips at an angle of about three degrees. Again the problem is that there is little or no brecciation (tearing) along the contact line between the Cretaceous shales below and the Precambrian limestones above.

The undisturbed condition of the underlying shales is attributed by Kulp to their softness, but it is not explained just how this property would inhibit deformation or grinding of the shales. The overlying limestones are said to have been much deformed. If this deformation were caused by sliding over the shales, the latter must have been competent to transmit the necessary shearing stresses and therefore not too soft to undergo distortion by those same stresses. This is basic mechanics.<sup>24</sup>

*The research of George McCready Price.* Seventh-day Adventists will immediately recognize the name of George McCready Price, whether from his books and articles on flood geology or his expositions of Bible prophecy (which incidentally are of the highest quality). In his capacity as a geologist this grand old gentleman wrote widely on such discrepancies in the geologic column as those found at Heart Mountain, the Lewis Overthrust, and other comparable sites.

Long ago, George McCready Price made an extensive study of areas of this type around the world. He discussed these in many books written by him on the general theme of deluge geology. Although his examples were very impressive and well-documented, his writings were largely ignored by geologists, ostensibly because of his largely self-made geologic education.<sup>25</sup>

If Price's claims were demonstrably false, someone would quickly come forward and demonstrate the fact. His work has stood the test of time not because it is unworthy of the attention of his peers--they know about it--but because no one has been able to falsify it. One person acquainted with both Price's work and the Lewis Overthrust states:

"After careful observation [of the Lewis Overthrust] I am convinced Price is even more right than he thought--at the actual contact line very thin layers of shale were always present. Furthermore these were cemented both to the upper Altyn limestone (oldest of the Pre-Cambrian series) and lower Cretaceous shale layers. In fact, in some places along the almost one-quarter mile line of exposed contact the limestone and Cretaceous have split apart at the contact line.



Often where this has occurred the thin band of soft shale sticks to the upper block of Altyn limestone. . . .

"Another amazing fact was the occurrence of two four-inch layers of Altyn limestone intercalated with Cretaceous shale. These always occurred *below* the general contact line of Altyn limestone and shale. Likewise careful study of these intercalations showed not the *slightest* evidence of abrasive action such as one would expect to find if these were shoved forward in between layers of shale as the overthrust theory demands."<sup>26</sup>

All of this suggests that the geologic periods are not periods at all, but different phases of geologic activity capable of manifesting themselves out of sequence. Not all examples of discontinuity can be accounted for by deposition in sequence and later overthrusting. Once again, with smaller discontinuities such an explanation might work. But there are too many to explain in this way and some of them occur on too large a scale. The simple fact is that some strata were initially laid down out of sequence. This appears to have happened frequently, but if it happened no more than once--ever--that would be enough to falsify a model which claims that it could never happen.

## Reversing the Argument

Christians bewildered by the scientific claims that are urged as evidence against their faith in a biblical creation should neither withdraw from the debate nor allow their positions to become entrenched in an unreasoning manner. If what they believe happened actually did, the evidence--correctly understood --will support their views. Let me give one example of this from the book, *Geology of Coal*, by Otto Stutzer:

Generally speaking, the climate of the Carboniferous age must have been very favorable to plant growth. From the enormous masses of plant debris preserved during that time it may be inferred that vegetation was extremely abundant. Extremes in cold or drought could not have existed, because either would have obstructed the growth of plants.

The climate of the coal age was in general very uniform. There were no cold, temperate, and warm zones, corresponding to our present climatic zones. This is made evident by the discovery on Buckley Islands, close to the South Pole (85° southern latitude), as reported by Seward (1910), of coal-bearing strata with typical representatives of Gondwana flora.

It is generally accepted that the climate of the Carboniferous period was free from frosts and was very humid. The Carboniferous plants which have built up the coal deposits must have grown in wet places and in moist air. A great number of observations support this theory.<sup>27</sup>

The "Carboniferous period" includes both the Mississippian and Pennsylvanian periods toward the end of the Paleozoic. "Gondwana flora" means plant life once shared by Africa, India, Australia, and Antarctica. The same author goes on to state that:

2. Annual rings are absent in the woods of the Carboniferous trees. These must, therefore, have grown in a climate favorable for uniform and continuous growth. Such a climate exists only in tropical countries having plenty of moisture. A climate with seasonal changes of temperature and moisture could not have existed during the Carboniferous era.

3. Many Carboniferous plants have their blossoms directly attached to the stem. Similar structures are found at present only in tropical rain forests.<sup>28</sup>

The above descriptions of the late Paleozoic are very similar to those given by Ellen White, speaking of the earth shortly after it was created.<sup>29</sup>

As the earth came forth from the hand of its Maker, it was exceedingly beautiful. Its surface was diversified with mountains, hills, and plains, interspersed with noble rivers and lovely lakes; but the hills and mountains were not abrupt and rugged, abounding in terrific steepes and frightful chasms, as they now do; the sharp, ragged edges of earth's rocky framework were buried beneath the fruitful soil, which everywhere produced a luxuriant growth of verdure. There were no loathsome swamps or barren deserts. Graceful shrubs and delicate flowers greeted the eye at every turn. The heights were crowned with trees more majestic than any that now exist. The air, untainted by foul miasma, was clear and healthful. The entire landscape outvied in beauty the decorated grounds of the proudest palace. The angelic host viewed the scene with delight, and rejoiced at the wonderful works of God.<sup>30</sup>

Thus, the earth's surface and its climate were both more nearly uniform when first created than now. The mountains were not abrupt and rugged, nor were there any barren deserts or vast oceans. There was an abundance of flora and the trees were much larger than at present.

## Discussion

There is a difference between seeing the Bible in terms of the geologic record and seeing the geologic record in terms of the Bible. We must not fit the Bible in where we can and take the geological record as our primary source of information, nor can we ignore the evidence of geology. It also must speak. But it must be correctly interpreted. Both lines of evidence should be studied. Some set of events did actually occur. The record of those events is preserved for us in two forms. If we do not have enough information to see how they agree, we do not have enough information. But when we do have enough information, the Bible and nature will indeed each support the testimony of the other.

Stutzer has given us some glimpses of what can only be the newly created earth. This follows an earlier period of substantial uniformity during which,

Sedimentation may have taken place in a huge ocean ("Pantalassa") covering most of the planet. This is suggested by the absence of clearly expressed facies zonation (at least of linear type) and of any evidence of extensive land areas. The proto-ocean was probably not very deep so that in some areas the sea-bottom was exposed as banks and low islands. This is suggested by a general lack of conglomerates among the Archean strata. . . . True terrigenous strata appear to be present only in the uppermost parts of Archean sequences. These rocks were pelitic sediments before metamorphism.<sup>31</sup>

What Pantalassa (All Sea) reminds me of is Gen 1:2, which says: "Now the earth was formless and empty, darkness was over the surface of the deep, and the Spirit of God was hovering over the waters." That Gen 1:2 is describing the earth prior to creation week follows

from the reference to "darkness." God's first words in all the Bible are, "Let there be light" (Gen 1:3). But before this inspiration tells us that there was a dark and watery planet which was "formless and empty" until God formed it and filled it with life.<sup>32</sup> Thus, it is significant that vs. 2 follows vs. 1 and also that vs. 3 follows vs. 2. Did God create matter out of nothing during creation week? Yes. Does this fact contradict Gen 1:2? No. See also Heb 11:3 and 2 Pet 3:5.

There is more that could be said in this regard but notice one fact in particular. In *Great Controversy* Ellen White points out that the ultimate effect of Satan's rebellion is to undo much of what God had accomplished in creating the world initially:

That the expression "bottomless pit" represents the earth in a state of confusion and darkness is evident from other scriptures. Concerning the condition of the earth "in the beginning," the Bible record says that it "was without form, and void; and darkness was upon the face of the deep." Genesis 1:2. Prophecy teaches that it will be brought back, partially at least, to this condition.<sup>33</sup>

There is a dramatic contrast between an inhospitable globe with little oxygen and no land, with both surface temperatures and atmospheric pressures much higher than at present on the one hand,<sup>34</sup> and on the other hand a verdant paradise supporting life of every description with abundant light, oxygen, and land, and a climate so mild and uniform that trees lacked annual growth rings. The contrast between these two widely different conditions is fairly clear from geological evidence alone but it comes into very sharp focus when studied in the context of Gen 1:1-31. There we learn that the events of creation week did not occupy ages but days, and that higher as well as lower life forms were involved. Then, just as suddenly as it began, it was done (Ps 33:6-11).<sup>35</sup>

None of this could have offered any difficulty to God. The only thing in Gen 1-3 that was hard for Him to do was sending Adam and Eve from the garden. When God said, "It is not good for the man to be alone" (Gen 2:18) He was telling us one aspect of what it means for man to be created in the image of God. The above statement is an act of self-revelation on His part as well as a description of His two highest and most godlike creatures on the new planet.<sup>36</sup> God also has an inner need not to be alone, just like we do. In view of this fact, creating a world was a natural expression of His will. But taking away the good things He has made for us is foreign to that loving, beneficent nature and therefore difficult--even for omnipotence. God's strange act in Gen 3:23 has its sequel in Isa 28:21.

## Conclusion

In this paper I draw attention to the fact that fossils must be preserved more rapidly than they would otherwise have decomposed, or they would not have been fossilized. Even more significant than the preservation of soft parts is the stopping of fossil actions in midcourse. The lesson to be learned from such evidence has been turned around exactly backwards by those working within a uniformitarian framework.

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Note: All Scripture quotations in this paper, except when noted otherwise, are from the Holy Bible, New International Version. Copyright (c) 1973, 1978, 1984 International Bible Society. See also Hardy, "The Old Testament Basis for New Testament Rock Symbolism," *Historicism*, No. 16-38.

<sup>1</sup>Ellen White, *Education* (Mountain View: Pacific Press, 1952), p. 134. In the concluding lines of his book, *The Forces of Nature* (2nd ed. [Cambridge: Cambridge University Press, 1986]) P. C. W. Davies states that, "Mathematics and beauty are the foundation stones of the universe. No one who has studied the forces of nature can doubt that the world about us is a manifestation of something very, very clever indeed" (ibid., p. 169). The next step is to move beyond the term "something" and acknowledge that God has placed his infinite wisdom on display in the things He has made, i.e., that they tell us about Him.

<sup>2</sup>Existing metamorphic rock can also serve as a basis for the formation of newer metamorphic rock. The forces which operate to form metamorphic rock are either physical (fragmentation) or chemical (recrystallization or reconstitution) in nature. See *McGraw-Hill Encyclopedia of Science & Technology*, 6th ed., s.v. petrology. Virtually all rock has undergone some kind of change. "The Archean quartzites are always completely recrystallized and are commonly microclinized. No relic clastic textures are preserved. The fact that they are distinctly layered and are commonly interbedded with high-alumina rocks indicates that they are definitely of sedimentary origin. The fact that these quartzites are commonly associated with volcanic rocks suggests that the silica was a product of volcanic activity and was formed as a gel" (L. J. Salop, *Precambrian of the Northern Hemisphere and General Features of Early Geological Evolution*, *Developments in Palaeontology and Stratigraphy*, no. 3, trans. G. M. Young [New York: Elsevier, 1977], pp. 300).

<sup>3</sup>There is, however, a shortage of soft-bodied fossils. "When my colleague and former student Jack Sepkoski set out to catalogue the history of all lineages, he found that 20 percent of major groups are known exclusively by their presence in the three greatest Paleozoic *Lagerstätten*--the Burgess Shale, the Devonian Hunsrückschiefer of Germany, and the Carboniferous Mazon Creek near Chicago" (Stephen Jay Gould, *Wonderful Life: The Burgess Shale and the Nature of History*, (New York: Norton, 1989), p. 61).

<sup>4</sup>See Scott M. Huse, *The Collapse of Evolution* (Grand Rapids: Baker, 1983), p. 34.

<sup>5</sup>There are at least fourteen major unconformities, or gaps in the geological column, at the Grand Canyon (see Ron Redfern, *Corridors of Time: 1,700,000,000 Years of Earth at Grand Canyon*, with an Introduction by Carl Sagan [New York: Times Books, 1980], p. 66). The oldest of these is the one that Redfern calls the "Great Unconformity" (ibid., p. 67), which leaves a period of some 1,130,000,000 years blank. Another gap spans the Silurian and Ordovician periods (105,000,000 years). There are five more major Paleozoic gaps, five gaps during the Mesozoic (including much of the Upper Jurassic and Lower Cretaceous), and two during the Cenozoic. A caption states, "Some of the major gaps in the geological record are shown here. If they had been drawn to the same scale as the other rock formations shown, their total thickness would be greater than the overall diagram" (ibid., p. 66).

<sup>6</sup>John C. Whitcomb and Henry M. Morris, *The Genesis Flood: The Biblical Record and Its Scientific Implications* (Grand Rapids: Baker, 1961), pp. 205-6.

<sup>7</sup>The answer is that they do not. And the reason why is that there is comparatively little geologic activity at present which could provide a basis for the kinds of rapid deposition required to preserve organisms pending eventual fossilization.

<sup>8</sup>James L. Amos and David Jeffery, pp. 182-91.

<sup>9</sup>Ibid., p. 191.

<sup>10</sup>Amos and Jeffery, "Fossils," p. 189.

<sup>11</sup>*Encyclopedia Britannica*, s.v. Ocean and Oceanography, II. Marine Sediments.

<sup>12</sup>In the open ocean "a sand grain of diameter 0.02 in. sinks about 15 ft. per minute, a clay particle of 0.00004-in. diameter settles at a rate of less than 7 ft. in a month. Thus, these fine clay particles take centuries to reach the bottom of the deep ocean, in the course of which time they are carried by currents to all parts of the earth" (ibid.).

<sup>13</sup>See n. 3 above.

<sup>14</sup>Ibid., p. 69.

<sup>15</sup>Ibid., p. 60.

<sup>16</sup>"Acknowledging the pioneering work of our German colleagues, we designate these faunas of extraordinary completeness and richness as *Lagerstätten* (literally 'lode places,' or 'mother lodes' in freer translation). *Lagerstätten* are rare, but their contribution to our knowledge of life's history is disproportionate to their frequency by orders of magnitude" (ibid., p. 61).

<sup>17</sup>Ibid.

<sup>18</sup>Ibid., p. 70.

<sup>19</sup>According to Gould, "The majority of fossil mammals are known only by their teeth" (ibid., p. 60), for which no special explanation is required. Teeth do not readily decompose and so require no catastrophic event to preserve them. But there is a question whether fossil teeth are fossils. Near La Vida Mission in northern New Mexico, where I worked from 1969 to 1972, there are places where sharks' teeth can be found in the high sandstone bluffs. They are not noticeably different from younger teeth except for some discoloration. One could argue that fossil teeth are just teeth and not products of fossilization.

<sup>20</sup>*Collapse of Evolution*, p. 48.

<sup>21</sup>"The entrapped waters in these sediments, cut off from the warm waters of the open ocean, froze rapidly, forming the 'permafrost,' the permanently frozen soils and subsoils of the Arctic lands, and it was in these that the mammals and other animals of the region were buried. As Charlesworth says: 'The frozen mammoths are found on the timbered banks of rivers and in a soil that nearly always contains fragments of trees. Bacterial decay was hindered by the cold climate and by quick interment in fine silts. . . .'" (Whitcomb and Morris, *The Genesis Flood*, p. 290).

<sup>22</sup>Quoted from Ivan T. Sanderson, "Riddle of the Frozen Giants," *Saturday Evening Post*, January 16, 1960, p. 83 in ibid., p. 291. <sup>23</sup>Ibid., p. 181.

<sup>24</sup>Ibid., p. 187.

<sup>25</sup>Ibid., p. 184.

<sup>26</sup>Ibid., pp. 189-90.

<sup>27</sup>Trans. Adolph C. Noé (Chicago: University of Coal), p. 168.

<sup>28</sup>Ibid., p. 170.

<sup>29</sup>The Carboniferous period is not unique in this regard. "The climatic conditions during the Jurassic and Cretaceous periods at the time of their coal formations must have been similar to those of the Carboniferous era" (ibid., p. 171). The Jurassic and Cretaceous are Mesozoic periods.

<sup>30</sup>Ellen White, *Patriarchs and Prophets*, p. 44.

<sup>31</sup>Salop, *Precambrian of the Northern Hemisphere*, p. 299.

<sup>32</sup>*Great Controversy* (Mountain View: Pacific Press, 1950), pp. 658-59.

<sup>33</sup>"Most workers acknowledge that the Archean atmosphere was very thick, dense and consisted largely of water vapour, CO<sub>2</sub>, HCl, HF, H<sub>2</sub>S, NH<sub>3</sub>, CH<sub>4</sub>, S and other minor components (Vinogradov, 1964, 1967). Intensive volcanic activity in the Archean probably supplied these products. Under these conditions the so-called 'greenhouse effect' would have been very important so that temperatures in the lower atmosphere and in the surface waters would have been higher than at present by some tens of degrees (at the very beginning of the Archean it could even have been more than 100°C). High atmospheric pressure (some tens of atmospheres) would have prevented seawater from boiling" (ibid., p. 301). "Many peculiarities of older rocks, of Archean, Paleoprotozoic and partly of Mesoprotozoic age, suggest that Early Precambrian sedimentation took place in the absence of free oxygen in the hydrosphere or atmosphere" (ibid., p. 302). "The proposed dense, thick atmosphere of Archean time would have effectively prevented penetration of sunlight" (ibid., p. 304).

<sup>34</sup>Robert V. Gentry points out that traces of earlier radioactive elements in Precambrian granite require the conclusion that such rocks were created instantaneously out of nothing (see *Creation's Tiny Mystery* [Knoxville: Earth Science Associates, 1986], p. 32). I like what Gentry

says. But do his findings pertain more to Gen 1:9 or to Gen 1:1? Scripture does truly state that a dark, watery globe occupied this part of space prior to Gen 1:3 and Ellen White states that the earth will revert to a similar condition during the millenium (see n. 32 above). Heb 11:3 appears to be talking about more than our planet ("By faith we understand that the universe [*tous aionas*, lit. "the ages" (=Hebrew <sup>o</sup>lam)] was formed at God's command, so that what is seen was not made out of what was visible"). Peter states "that long ago by God's word the heavens existed and the earth was formed out of water and with water" (2 Pet 3:5). Unless I am misinterpreting this passage, the apostle appears to be writing with the water of Gen 1:2 specifically in view.

<sup>35</sup>This fact should be allowed to inform our understanding of the doctrine of the trinity. If God had never exercised His power to create, He would be alone.