

# The Grand Canyon in the thralls of shallow, doctrinaire uniformitarianism

## *The Grand Canyon: Monument to an Ancient Earth*

Carol Hill, Gregg Davidson, Tim Helble, and Wayne Ranney (Eds.)

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The Grand Canyon, located in the southwestern US, is one of the most beautiful geologic sites on Earth (figure 1).

I began this well-illustrated and much-hyped book expecting to be stimulated and challenged. Instead, I must confess a certain annoyance with its extraordinary superficiality. I invite the reader to compare this book with *The Genesis Flood*<sup>1</sup> and *Grand Canyon: Monument to Catastrophe*.<sup>2</sup> Most, if not all, of the arguments dusted off in this book have long been answered in these classics. And the rest are answered in more recent creationist works. Towards the latter part of this review, I examine some other geologic topics, but need to strongly stress the fact that it would require a full-length book to address all the fallacies of this pro-uniformitarian compromising evangelical missive.

The ‘usual suspects’ are behind this book, as is obvious in the Acknowledgments (p. 5). These include Davis Young, the so-called American Scientific Affiliation, the John Templeton Foundation, and the BioLogos Foundation.

This work is an anthology, with articles written by different authors.

When I use the phrase ‘the authors’ in my review, I am referring to the authors of the specific article in the book.

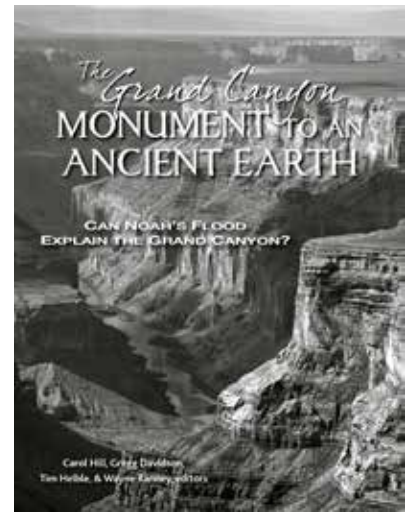
### Really nothing new

The authors repeat the argument that Flood geology is largely a 20<sup>th</sup>-century invention (pp. 23–24). In actuality, it strongly goes back to the very start of the science of geology, as even a cursory examination of the historical evidence makes clear.<sup>3</sup>

The reasoning in this book is nothing more than the same old, same old shibboleths of compromising evangelical thinking:

- because the majority of scientists believe something, it therefore must be true
- the Bible is not a book of factual information (science), only of spiritual truths, and the two can conveniently be dichotomized
- Bible interpretations on scientific matters were sometimes wrong in the past (e.g. Galileo), so therefore all scientifically relevant ones are also, and
- the Flood cannot be universal because universal terms are sometimes used in a non-universal sense, and more.

We hear the old chestnut that there was no petroleum-based pitch, before the Flood, to seal the Ark. The authors insist that it had to be petroleum, and not tree-derived tar, but do not convincingly explain why this is supposed to be so. After all, pitch has historically been made by boiling pine resin with charcoal.<sup>4</sup> Let us, however, for the sake of the argument, suppose



that they are correct. A recent review article on the subject of petroleum origins retains the possibility that some (though not most) petroleum may be of inorganic mantle origin.<sup>5</sup> For that reason alone, it is possible that some petroleum existed before the Flood.

The reader hears, once again, that is impossible for both freshwater- and saltwater-organisms to have simultaneously survived a global Flood. That challenge was met a long time ago.<sup>6</sup>

We are told, once again, that the Hebrew word *eretz* (supposedly) does not refer to planet Earth; it only refers to ‘local region’, ‘soil’, and the like. (p. 26). This would mean that God created the soil of the Middle East, if nothing more, a few thousand years ago—which itself is not in agreement with the ‘settled science’ of standard geology. Moreover, if *eretz* merely refers to the ‘known world’ of the Bible authors, it means that the Noachian Deluge covered, at minimum, the territory between the Nile River and the Persian Gulf. This is as much in conflict with uniformitarian geology as is the global Flood! Such is the *reductio ad absurdum* of compromising evangelical thinking.

But wait, it gets even better. In the concluding chapter of the book, the



**Figure 1.** The Grand Canyon, one of the most photographed, picturesque sites on Earth

authors (p. 209) actually cite Psalm 104:5 as something that would nullify Galileo’s thinking (but not Psalm 16:8, which uses the same Hebrew word for ‘moved’), and then conclude that we should all search for the truth. Is the informed reader supposed to laugh, or what?

### When scientists disagree

The authors have a tendency to reckon the positions of some creationists as if they held for creationism in general. The authors bring up catastrophic plate tectonics and the insuperable heat problem—disregarding the fact that not all creationist geologists accept catastrophic plate tectonics—in part for this very reason.

On a separate issue, the authors seem to be obsessed with the idea of Earth-circling giant tsunamis, evidently not realizing that some Flood geologists (myself included) prefer to think in terms of regional tectonically driven movements of floodwater. (It should be added that ‘continent-sized sheet sandstones’ need not imply singular depositional events. Local and regional sandstones can overlap in shingle fashion, creating the illusion

of a single, massive sheet sandstone—even within the context of standard geology.<sup>7</sup>)

The authors (pp. 176–177) strongly object to Flood geologists pointing to the fundamental disagreements between evolutionists as evidence of the weakness of the evolutionary-uniformitarian position by bringing up the considerable disagreements between Flood geologists. This fallacious argument treats the two positions as being on a par. They are not. There are only a handful of active Flood geologists in existence against thousands of uniformitarian geologists, and so the research capabilities of the former are very much smaller than those of the latter. For this reason alone, disagreements, especially over fundamental issues, are a much, much more serious problem for uniformitarian geology than they are for Diluvialist geology.

This is not to say that all disagreements among creationists are of an innocent, developmental nature. For instance, the infighting among creationist geologists as to which fossiliferous strata is pre-Flood, Flood, and post-Flood, over which some of the authors gloat (p. 33, 177, 212), only illustrates the pitfalls of the uniformitarian concessions

that are behind the non-recognition of the Flood as the cause of much of the Phanerozoic sedimentary record. Taken to its logical conclusion, this neo-Cuvierism leads to the vanishing Flood. Not surprisingly, neo-Cuvierism is commonly a way station between Flood geology and the abandonment of the Flood in favour of the complete package of uniformitarian geology.

### The straitjacket of uniformitarianism

The principle of uniformitarianism asserts the temporal continuity of the regularities of nature (‘natural laws’), the configurations of geologic actions (e.g. rivers, deltas), and the overall rates of geologic processes. The authors would have us believe that Flood geologists themselves use uniformitarianism when they compare Mt St Helens with the Grand Canyon. This is very much mistaken. Using present-day geologic processes in order to decipher the past is not, in and of itself, uniformitarianism. It is common sense. It only becomes uniformitarianism when it becomes an all-encompassing ideology that shackles the geologist’s thinking into a Huttonian-style steady-state mentality of Earth history, and causes him to disregard or explain away the plain teachings of Scripture about the earth’s past.

Let us make the foregoing clear. Consider the well-worn dictum, ‘The present is the key to the past.’ To paraphrase, ‘the present is *one* of the keys to the past’, but ‘the present is not the *only* key to the past’. *That* is the essential difference between the Flood geologist and the uniformitarian-serving compromising evangelical geologist.

Furthermore, the uniformitarianism employed by the compromising evangelical geologists of this volume is not merely a mental box, it is a

straitjacket. The comments of some of the authors (p. 65) are not only revealing, they are glaring. They write:

“The sedimentary layers found in the Grand Canyon can be easily explained by a succession of rising and falling sea levels. No fantastic or undiscovered natural processes need be invoked to account for what is observed.”

In other words, if present-day geological processes (supposedly) account for the Grand Canyon strata, there is nothing else to even consider! The author’s one-track adherence to doctrinaire uniformitarianism is positively lock-step in character.

The authors (p. 65) continue:

“The flood geology model, on the other hand, requires many fantastic or never-before-seen explanations, including sediments accumulating at phenomenally high rates . . . . It’s remarkable that such speculations are even necessary, given the total absence of any descriptions of global tsunamis, catastrophic continental upheavals, massive gravity flows, or violations of natural laws in the Genesis account of Noah’s flood.”

Am I reading a 21<sup>st</sup>-century compromising evangelical geologist, or am I reading Hutton and Lyell, or some other 18<sup>th</sup>- or 19<sup>th</sup>-century rationalist?

The authors’ understanding of Scripture *itself* is woeful. Why should the Bible have to mention *every single* detail of what happened during the Flood? In addition, the obtuseness of the authors’ reasoning about the Flood is something to behold. How could a global Flood, by its very nature, *not* produce ‘never before seen’ phenomena? How could a global Flood *not* include large currents, catastrophic continental upheavals, etc.? Are we effectively hearing the old ‘tranquil Flood’ nonsense once again—which would be as miraculous as a tranquil explosion? How could a miracle-working God (in whom, by

the way, compromising evangelicals profess to believe) *not* sometimes induce ‘violations of natural laws’ (or more properly, *additions* to natural laws), and otherwise circumvent the ‘principle of least astonishment’?

What’s more, the quoted ‘principle of least astonishment’ is a repackaging of the ideas of the atheist philosopher David Hume. This rationalist said that any miracle, by its very nature, is so fantastic that the ‘principle of least astonishment’, which dictates that whoever reports it, no matter how credibly, either must be mistaken or untruthful, has to be applied. If the compromising evangelical authors of this book were to actually apply uniformitarianism and its ‘principle of least astonishment’ consistently, they would have to reject the bodily Resurrection of Jesus Christ. After all, scientists know of no process that can make an unambiguously dead organism resurrect, and no trained biologist has ever observed an unambiguously dead organism come back to life.

### Transported nautiloids and other body (and trace) fossils

Extensive suites of aligned nautiloid fossils have been found, in the Grand Canyon, indicative of current transport (figure 2). Faced with this evidence, the authors point to all those Grand Canyon fossils which lack preferred orientation, and tell the reader that this means that there were no currents when they were being deposited. This is a *non sequitur*. To begin with, it is naïve to suppose that currents must have *constantly* been in operation during Flood-related deposition. Obviously, a slackening of the current would have caused the organisms to

be deposited without a preferred orientation. However, let us, for the sake of argument, assume that currents *were* constantly in action. In this case, preferred orientation is proof of current transport, but a *lack* of preferred orientation is *not* proof for the absence of current transport. In fact, organisms, notably those having long axes, are commonly interfered with by entrained sand grains, or readily interfere with each other during current transport, and thus end up deposited in a non-preferred orientation.<sup>8</sup>

Now consider those body fossils that are (or appear to be) ‘in place’. They are so few and far between, in relation to the numbers of fossils obviously not in place, that they can largely, if not entirely, be explained as fortuitous depositional events.<sup>9</sup>

Predictably, the authors bring up the order of fossils in the fossil record as incompatible with the Flood, and uncritically cite simplistic anticreationist papers that are caricatures of the scientific creationist position on this subject. They also overlook my TAB (Tectonically-Associated Biological Provinces) model, which adds to previous creationist models, and which especially explains why today’s flora and fauna have little in common with that of the early Phanerozoic fossil record.<sup>10</sup>



Figure 2. Nautiloids showing preferred orientation in the Grand Canyon

The authors clumsily try to deny the circular reasoning behind using fossils to date rocks. No matter; it is undeniable. For instance, certain strata are redated as Cambrian (and not Pre-Cambrian) upon the discovery of a trilobite, and then the circle of reasoning closes when the insistence is made that said trilobites are limited to the Cambrian.<sup>11</sup>

Let us now move this discussion from body fossils to trace fossils. We once again hear about vertebrate footprints as an insuperable problem for the Flood. They are not. The authors conveniently ignore the many creationist studies on this subject. The matter is elementary; minor changes in elevation can successively expose, bury, and re-expose large areas of land undergoing flooding, and a single medium- to large-size land vertebrate can make 10,000 footprints in one day.<sup>12</sup>

An analogous chain of reasoning holds for the construction of trace fossils, by marine organisms, at the sediment/water interface. Consider also the disruption of sediment by burrowing organisms. What if extensive bioturbation can simultaneously occur, at different tiers, within thick layers of deposited sediment?<sup>13</sup>

### **Miscellaneous geologic interpretations hurled at the Flood**

This book brings up a number of geologic features that—according to conventional geologic thinking—need long periods of time to develop—much longer than a year-long Flood. All such conclusions in this book involve subjective interpretations masquerading as facts, and all of them are completely steeped in uniformitarian reasoning. Moreover, most of them are based on superficial reasoning; furthermore with not so

much as a glimmer of questioning of canned uniformitarian explanations.

The authors dust off the argument that the Flood cannot explain pure carbonate rocks, as its unavoidable turbulence would necessarily have mixed different types of sediment together. A little appreciation of scaling disposes of this trivial objection. A source area of pure carbonate mud may be 100 km x 100 km in area, while the depth of the Flood may be only 1 km. We thus have a plume of floodwater that is at least 100 km long, 100 km wide, and only 1 km deep. So long as the current flows in a linear course, it does not matter how turbulent the water is within it; only pure carbonate will be entrained in the plume (except perhaps at its boundaries), and so only pure carbonate mud will be deposited, over a large area, when the current slackens (again, except perhaps at its boundaries).

Pure carbonate rocks can also have formed, during the Flood, through primary processes. Note that the solubility of carbonate increases with pressure, while the solubility of most solids is essentially pressure-independent. Deep flood water might have selectively dissolved calcium carbonate; especially likely when the source as proposed is already enriched in carbonate. When the pressure is relieved as the water slackens and shallows, calcite can precipitate. Pressure-dependent solubility of carbonates explains why the oceans have a “calcite compensation depth”, below which no calcite forms, although this ~ 4 km.

Now consider alleged paleokarst. So-called paleokarst has also been interpreted as the results of tectonically induced movement between layers of rock, which could happen if the breccias can be tectonic in origin without showing fault fabrics or evidence of deformation.<sup>14</sup> So-called paleokarst breccia can

also be colluvial deposits.<sup>15</sup> Finally, the leading karstologist Dr Emil Silvestru argued, “All ‘paleokarst’ interpretations are to be treated with caution because true paleokarst is unlikely to have been preserved for the length of time implied.”<sup>16</sup>

On a related subject, consider so-called paleosols. They, too, are subject to multiple interpretations.<sup>17</sup> In fact, Knauth warns that “Interpreting ancient depositional environments is a tricky business, and a stratigraphic layer without telltale root fossils may be a paleosol only in the eye of the beholder.”<sup>18</sup> (However, even undisputed root traces are not evidence of paleosols, at least not necessarily. Roots can be allochthonic, as proved by indicators of current transport.<sup>19</sup>) On another matter, Callow<sup>20</sup> points out that so-called tubules, putatively caused by pedogenic bacteria, may actually have been caused by microbial mats, and warns that Miocene paleosols may be unsafe homologues, or even analogues, to their presumed counterparts under the inferred very different geologic conditions of the Proterozoic. (This, itself, is revealing. It shows the influences of uniformitarian thinking in the identifications of so-called paleosols.)

The authors trot out the old argument that mud cracks, in the fossil record, are conclusive evidence of long-duration subaerial exposure, and that they are distinguishable from syneresis cracks. They are not. Recent research confirms earlier studies that demonstrate that there is no clear-cut morphological distinction between subaerial desiccation cracks and syneresis (subaqueous shrinkage) cracks.<sup>21</sup> Furthermore, the geologist must rely on other evidences of subaerial exposure (e.g. raindrop prints) before concluding (actually, supposing) that said cracks are indeed desiccation cracks. This, of course, is tacit admission that such cracks cannot

stand alone as evidence of subaerial exposure. Finally, the divergent geologic thinker can contemplate a fortuitous co-occurrence of such cracks and things such as raindrop prints. And/or he can consider a chain of causality in which the same tectonic movement that caused a surface to emerge very briefly (and receive raindrops) also caused a chemical strain within the sediment that generated the adjacent and/or subjacent syneresis cracks.

Were Grand Canyon sediments soft when the strata were folded, and the Canyon itself eroded? The authors object to the evidences of soft-sediment folding and erosion of Grand Canyon sediments—based on the existence of fracturing, and on the absence of certain supposedly expected indicators of soft-sediment deformation and erosion. This is seriously wrong-headed, at multiple levels of reasoning. To begin with, brittle deformation, such as the existence of an extensive network of fractures, most definitely does occur in unlithified (semiconsolidated to consolidated) sediment.<sup>22</sup> Furthermore, fractures and faults are common in unconsolidated sediments.<sup>23</sup> In addition, there is often no sharp boundary between soft sediments and lithified rocks to begin with, and the nature of deformation (brittle or plastic) is partly governed by deformation velocity.<sup>24</sup> What's more, according to van Loon:

“SSDS [soft-sediment deformation structures] may look surprisingly similar to deformations formed in hard rock ... [and] It has now been recognized, for instance, that specific types of deformation are not restricted to hard rock or even to crystals, but can also occur in unconsolidated, even water-saturated deposits.”<sup>25</sup>

What else have we overlooked?

Not surprisingly, the authors paint a self-congratulatory portrait

of isotopic dating, and dismiss the difficulties as poor sample selection, contamination, etc. This borders on the farcical. In actuality, the entire field of isotopic dating is beset with a systematic parsing and manipulation of evidence.<sup>26</sup>

## Conclusions

Despite its lavish illustrations and photos, this book is little more than an uncritical rehash of the same set of old arguments that are imagined, by atheistic geologists, by compromising evangelical geologists, and by neo-Cuvierist geologists alike, to nullify Flood geology. They are, in the context of this book, nothing less than a monument to the virtual enslavement of compromising evangelicals to rigid uniformitarian ideology.

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