

A detailed but incomplete analysis of research related to creation and the Flood

A review of
*Faith, Reason, & Earth
History, 2nd ed.*
by Leonard Brand
Andrews University Press
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John Woodmorappe

This single volume presents a diverse range of information on many subjects. Brand begins with some theology. He shows, for example, that Genesis 2 does not contradict Genesis 1. The two chapters are complementary. The plants in Genesis 2 refer to agricultural plants, a fact obvious from the Hebrew. Consequently, Genesis 2 is not repeating the Creation account of Genesis 1 in reverse order.

The nature of science

The author focuses on the philosophy of science. He presents examples of unconscious bias in scientific investigations. For instance, based on his own research, salamanders submerged in water were found to often walk on the sediment below. This had not been appreciated earlier because of the preconception that salamanders mostly move in water by swimming. Another example of observer bias is that of fossil vertebrate trackways in the Coconino sandstone. An untrained biology student spotted them, as he had not been constrained by preconceived notions. Geologists had missed the tracks because they had believed that the conditions under which the sandstone had been deposited were inconsistent with track making.

Brand then discusses the essential testability of scientific premises. For instance, “God created life” is not a testable hypothesis. However, it can be *turned into* a testable hypothesis by rewording it as follows: “All living and fossil organisms fall into discrete groups without a series of evolutionary intermediates between major groups.”

The fact that we understand how something works does not mean that God is not behind it. Thus, Brand rejects the God-of-gaps appellation that is often leveled against creationist thinking.

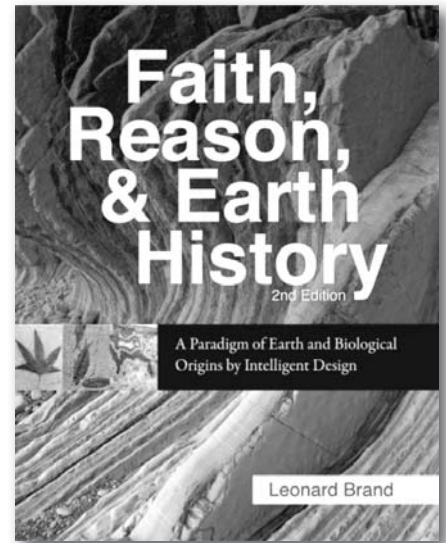
Complexity of life

Brand focuses on intelligent design. He is careful to distinguish between general complexity and specified complexity. For example, a random string of letters is an example of general complexity, but a string of letters arranged to form a book is an example of specified complexity.

The author also considers the subject of irreducible complexity, discussing the work of Michael Behe. Critics point out that there are simpler examples of phenomena that are usually recognized as examples of irreducible complexity. Even so, the simplest of living systems have to possess a series of components functioning simultaneously before the entire system can function at all. Most definitely, critics of the irreducible complexity concept have not shown how complex living systems can originate spontaneously from less ordered systems.

Major biological issues

Brand discusses such things as embryology, sociobiology, homology, vestigial organs, and biogeography.



He compares the predictions of evolutionary theory and creationist theory in each case.

Consider living things as a nested hierarchy. Some features of living things obey such a hierarchy, but others clearly do not. For instance, if we adhere to an evolutionary nested hierarchy, we would predict that human and pig molecules would be more similar to each other than either of them would be to a shark molecule. Now consider the molecule relaxin, responsible for widening the birth canal during birth. It turns out that shark relaxin is no more different from pig relaxin than pig relaxin is different from human relaxin.

Dysteological arguments are frequently raised by evolutionists. This follows from the premise that evolutionary processes are minimum-solution solutions for the immediate survival of the organism, and are lacking in foresight. (This, of course, contrasts with Special Creation, in which all things were designed deliberately, and so with foresight.) The author refutes the arguments about the eye being poorly designed. For instance, the ‘backwards’ retina is not an impairment to the function of the eye. To the contrary, the cell arrangement within the retina allows for highly efficient transmittal of light.

Brand presents many examples of species that have formed in less than

1,000 years. He also touches on the genetic changes that occur as a result of population bottlenecks. Unfortunately, Brand did not consider other extensive research on rapid speciation and the genetics of bottlenecks.¹

Catastrophism in geology

For a long time, uniformitarianism was taken to imply that virtually all significant geologic processes worked slowly and required vast spans of time to cause significant geologic changes. This long-entrenched thinking got a major shock, thanks to the studies of J. Harlan Bretz. He studied the Channeled Scablands of Washington State in the US. Bretz showed that the channels had been excavated by a series of large floods that had resulted from the melting of glaciers. Some 2,000 km³ of water were suddenly released from glacial lake Missoula. This has since been called the Spokane flood.

The 'geologic processes are slow' thinking needs to be re-examined in other contexts. Brand discusses the so-called Yellowstone fossil forests (figure 1). Detailed geologic field work suggests that the trees were washed-in and did not grow in place. We therefore have a succession of transported trees rapidly deposited, not a succession of superposed slow-growing forests that were buried in place. This is, of course, consistent with a global flood. A similar burial of transported, erect trees took place during the Mt. St. Helens eruption in 1980, proving the feasibility of catastrophic deposition as an explanation for 'fossil forests' elsewhere.

The author studied the Bridger Formation in Wyoming. This vertebrate-fossil-rich deposit is conventionally believed to require millions of years to have been deposited. Fossil turtles were found in large numbers, and in an excellent state of preservation, which indicated that they had been buried rapidly. However, the events that produced such occurrences were assumed to be local, with each event separated by a long period of time

from the next event. Brand mapped limestone layers in the formation, and found that they spanned the basin. This implied that the turtle-rich deposits had formed at about the same time, and over much of the basin; not locally and episodically over long periods of time.

Do graded beds require a long time for deposit? Brand elaborates on turbidity currents, and how beds that were once thought of as requiring years to be deposited were actually deposited in a matter of minutes.

What about reefs? Brand presents evidence that modern reefs could have grown in only a few thousand years.

The erosion rates of continents, based on the corresponding sedimentation rate in oceans, are inconsistent with the conventional uniformitarian geologic time scale. According to radiometric dates, the US Appalachian Mountains are 300 million years old. If so, they should have been completely removed by erosion several times over.

Isotopic dating has its own problems. For instance, C¹⁴ dates can be measured from items, such as coal, which are supposedly many millions of years old. The half-life of C¹⁴ is only some 5,700 years, and anything close to millions of years old should be free of measurable C¹⁴ many times over. This cannot be explained away as contamination. It instead points to items such as coal being much, much younger than millions of years.

The C¹⁴ dates typically go back a few tens of thousands of years. They can be compressed into a much shorter time interval when one realizes that C¹⁴ gradually built up after the Flood. For this reason, the closer the age of the object to the Flood, the greater its false built-in C¹⁴ age.

Thus, an object that is 5,000 years old will have a C¹⁴ age of several tens of thousands of years. An object that is 4,500 years old will have an apparent C¹⁴ age of about 5,000 years. Finally, according to this model, the C¹⁴ became equilibrated with living things at about 2000 BC. Thus, an object that is 4,000 years old has a C¹⁴ age of 4,000 years.

Creationist research overlooked

The remainder of my review critiques this book. Brand briefly mentions Dr. Austin's research on the Grand Canyon, and the Catastrophic Plate Tectonics concept. He also mentions the Snelling and Woodmorappe work on the rapid cooling of plutons. With these exceptions, Brand conspicuously ignores virtually all creationist research outside of Seventh-Day Adventist circles. He completely ignores the excellent geologic field studies conducted by Michael Oard and published in the *Creation*



Figure 1. Upright petrified tree from near Specimen Creek, northwest Yellowstone Park. The tree is sticking out about 4.5m above the volcanic breccia.

Photo courtesy of David Oard

Research Society Quarterly and other publications. He also ignores my detailed work on Flood Geology.²

Ecological zonation and the Flood

Brand also entertains misconceptions about the Ecological Zonation Model. He sees it as perhaps satisfactory for explaining the stratigraphic separation of land from marine life, but questions how it could explain the stratigraphic separation of different *forms* of marine life. Harold Clark, the originator of the concept, actually considered this. He pointed out that life zones at different elevations can include bodies of water with their specific forms of marine life.³ Consequently, different forms of marine life should be buried in succession, and consistently from place to place, during the Flood. Identical reasoning applies to the stratigraphic separation of microfossils.

Of course, ecological zonation is not the sole explanation for the stratigraphic separation of fossils. Decades ago, I developed a model based on an association of tectonic provinces with types of fossils (TAB).² It posits that sections of crust downwarped in a consistent sequence from continent to continent, itself effecting a consistent pattern of stratigraphic deposition of organisms.

Why not more mixing of fossils?

Brand wonders why there are not more 'exceptions' in stratigraphic order. In fact, many 'exceptions' already exist, but are built into the conventional geologic-age system. There are many fossils (even a majority) that stratigraphically range across more than one geologic period, and there are even some that span the entire Cambrian-Tertiary sequence. As more and more fossils are collected, stratigraphic ranges of known fossils are extended all the time, and often to a spectacular degree.

As for the stratigraphic separation of microfossils, 'exceptions' occur on an almost-routine basis. They get explained away by invocation of reworking or downwash of fossils, often on an ad hoc basis.

Finally, questions about mixing of life forms must take into account the fact that most sedimentary rocks are sparsely fossiliferous to unfossiliferous. On this basis, 'exceptions' should not be expected so much when one realizes that 'properly' occurring fossils are themselves exceptions in a sense! For more on all this, see my work on Flood Geology.²

Limited Flood-mixing action

Brand focuses on the turbulent action of floodwater, and wonders how any kind of stratigraphic order could occur under those circumstances. Such an objection is commonly raised, and it seems to ignore the boundary conditions under which floodwater actually operated.

An analogy may help. Imagine a bathtub filled nearly to capacity. Put a drop of red ink and one of blue ink into the water some centimeters apart. They will quickly mix, even if the water is not turbulent. If sediment was falling out of the water, it would be mostly colored red mixed with blue. Now repeat the experiment with the water in the bathtub being only, say, 2 mm deep. The red and blue spots will take a long time to expand and overlap each other. If the 2 mm sheet of water is moving, there will be a slowly expanding blue and a slowly expanding red plume, with potential mixing occurring only at the peripheries of the plumes. The sediment deposited will be all-blue and all-red; very rarely will the two colors be mixed.

The Flood resembled the second situation. Floodwater was hundreds to thousands of kilometers wide, but only perhaps 1 km deep. For this reason, its ability to mix organisms from large distances away was rather limited, especially if water tended to be driven in consistent directions, as posited by my TAB model. The

boundary conditions operating during the Flood also help explain how beds of singular composition, such as pure coccolith beds, could be deposited with little contamination from other sources. Since the source-area of sediments, measured in hundreds of kms width, was very large compared with the depth of floodwater (1 km or so), opportunities for large-scale mixing of sediments were rather limited.

Why no early fossil humans?

Brand repeats the question as to why human fossils are found only at the very highest portions of the geologic column. He entertains the idea that a plate on which all humans lived was subducted deep into the earth, erasing all human remains.

Actually, the absence (or virtual absence) of human remains over most of the Phanerozoic geologic column has a prosaic explanation. Dividing the total volume of sedimentary rock by the total number of plausible human remains makes it obvious that human remains were so diluted in the sediments that the chance of finding even one of them would be very remote.²

Conclusion

This work will be of particular interest to the reader who desires a broad-based overview of issues surrounding biology, geology, the Creation, and the Flood. Those interested in an in-depth understanding of the Flood will have to look at other sources of information to supplement this work.

References

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2. Woodmorappe, J., *Studies in Flood Geology*, Institute for Creation Research, El Cajon, CA, 1993.
3. Clark, H.W., *Fossils, Flood, and Fire*, Outdoor Pictures, Escondido, CA, p. 59. 1968.