

Response to Ken Ham and YouTube Comments by Andrew Snelling

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After my article “Twenty-One Reasons Noah’s Worldwide Flood Never Happened” was published in the March/April 2018 *SKEPTICAL INQUIRER*, the creationist organization Answers in Genesis produced a YouTube video in which Andrew Snelling criticized some of the reasons I presented in the article for why such a worldwide flood could not have happened (see <https://answersingenesis.org/blogs/ken-ham/2018/04/02/christian-equips-atheists-debate-christians/>). Snelling, a geologist, is director of research for Answers in Genesis. As a lead-in to this video, Ken Ham pointed out that there were many people working for Answers in Genesis with PhDs who are well trained in science and who support the interpretations presented by Snelling, and he implied that my science was not as good as theirs.

In the course of the video, Snelling argues that I have preconceived uniformitarianism views that differ from the biblical ones that the young-Earth creationists have. However, in either case, because the creationists call themselves “creation scientists,” our differences in opinion must be based on scientific evidence and not necessarily on our positions with respect to interpreting the Bible. The young-Earth creationists interpret it with a literal translation, whereas I and most other mainline Christians who are scientists do not believe that the Bible was written to be a science textbook. I believe that the Hebrew authors of the Old Testament of the Bible were inspired and wrote their books based on their understanding of what they thought they knew during the time in which they lived. I believe that the Bible portrays who God (the Creator) is, why he created the universe, the Earth, and life (including humans), and how to obtain salvation. It does not answer the questions of when, where, and how creation was done. Science answers these questions.

In Ken Ham’s introduction and in the video, there was no attack on me for being a Christian, but he, Snelling, and others from Answers in Genesis were irked that I had published the article in *SKEPTICAL INQUIRER* and gave ammunition to atheists to attack the young-Earth creationists. Snelling essentially threw down the gauntlet, so to speak, and challenged me to give real scientific evidence. Not replying to his challenge is really not a choice for me, as he claimed that I had not “done my homework.” Therefore, in this follow-up response I have chosen five of the twenty-one reasons to demonstrate that Snelling has not done *his* scientific homework. There

is not enough space in this short response to give scientific justifications for all twenty-one reasons I provided. Here are the five reasons that I address.

The origin of salt and gypsum deposits

Instead of my explanation that deposits of salt had to form by evaporation of marine water in areas where an arm of the ocean had been cut off for some reason and where a desert climate caused the isolated water to evaporate, Snelling claims (at about the 8:30 mark of the video) that the salt was carried in a solution of hot water. (I make an interpretation here because he did not elaborate on where this hot water came from, but it is generally believed by young-Earth creationists that it was ejected from oceanic volcanic spreading centers from which the “fountains of the deep” emerged.) Supposedly, sufficient salt was concentrated in these solutions that the salt became precipitated when the water cooled. But there are no salt deposits anywhere in the world close to oceanic spreading centers. All are in the interiors of continents and occur multiple times throughout the geologic ages in widely different places in every continent.

I heard a young-Earth creationist in a talk say that the hot water that carried the ions of sodium and chlorine of which salt is composed was ejected at high speeds as steam from the oceanic spreading centers. If so, somehow the salt-bearing steam had to cool as a mass of liquid instead of expanding explosively as an extremely hot gas and thereby becoming scattered and dispersed in the atmosphere. Then, this condensed mass of hot water (whether once steam or not) had to land somewhere in large volumes of Noah’s flood waters. The problem for Snelling is that the sodium and chlorine ions in this water mass are so soluble in water that they would become dispersed in the huge volumes of the flood waters and never concentrate to the point of precipitation to form solid masses of layered salt (see <http://www.csun.edu/~vcgeo005/collins.pdf>). What Snelling proposes is impossible and shows that he has not done his homework. The natural laws for chemical behavior must be obeyed.

Sand dunes with giant cross-bedding in the Mesozoic rocks in Zion National Park

Snelling claims (about nine minutes into the video) that the cross-bedding in sandstone dunes was created under water

(like the sand dunes that are created under the Golden Gate Bridge by rushing tidal water). He claims that the angles of maximum dip of cross-bedding are less than 30 degrees, and therefore, this cross-bedding of sandstones in the Grand Canyon area was deposited under water. Figure 1 is a photo of cross-bedding of dunes a few miles north of the Grand Canyon National Park boundary that clearly shows angles greater than 30 degrees—which is clear evidence that these dunes were formed under dry desert conditions instead of under Noah's flood waters. Adjacent to it (right image) is another example from the Vermillion Cliffs in the same area. A similar image is on page 54 of the Grand Canyon book (cited below), also with dip angles greater than 30 degrees. All of these images show that Snelling has not done his homework.

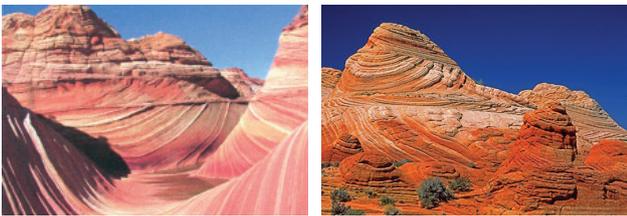


Figure 1: "The Wave," dune cross-bedding in Jurassic Navajo sandstone formation, North Coyote Buttes, Coconino County, Arizona, showing dip angles greater than 30 degrees [https://en.wikipedia.org/wiki/Coyote_Buttes].

Moreover, sand dunes like those formed underwater under the Golden Gate Bridge would not be expected to be formed by Noah's worldwide flood and be stacked like what is seen in these two images. Even the Permian Coconino sandstone that crops out in the Grand Canyon has desert dune cross-bedding with dips of 30 degrees and delicate footprint trails of spiders, scorpions, and millipedes and raindrop prints (Figure 2) that could not have been preserved on the surfaces of dunes formed by the raging torrents of Noah's flood waters. See illustrations on pages 58 and 156 in the book *The Grand Canyon, Monument to an Ancient Earth*, 2016, edited by geologist Carol Hill and others.

Raindrop prints occur in many places around the world

Snelling claims (about twelve minutes into the video) that he has seen raindrop prints in the Grand Canyon when he has led tours down the canyon on rafts. He says that raindrop prints in the canyon do not look like anything that he has observed in the adjacent rocks. He suggests that such may be just concentrations of precipitated minerals. Figure 2 shows fossilized raindrop prints as casts on the underside of the prints.

You can see the clear demonstration of the bowl-shaped impact basins where the globular water drops have collided with mud and the raised splash-rims that result from the impact. In this underside view, the rims project into the rock instead of being raised around the bowls, and the bowls extend upward instead of downward. It is clear that these really are fossilized raindrop prints. Next to this image are fossil raindrop

prints in the Coconino sandstone, which clearly shows that rain fell on the sand in a desert dune in open air. Paleontologist Phil Senter records raindrop prints in several geologic ages (Triassic, Permian, Devonian, and Cambrian) around the world in sedimentary rocks that were also supposedly deposited during Noah's Flood; see Figure 1 in <http://www.csun.edu/~vcgeo005/Flood%20geology.pdf>. Therefore, Snelling has not done his homework, because there are published data that show that raindrop prints do in fact occur in the supposed Noah's flood deposits.

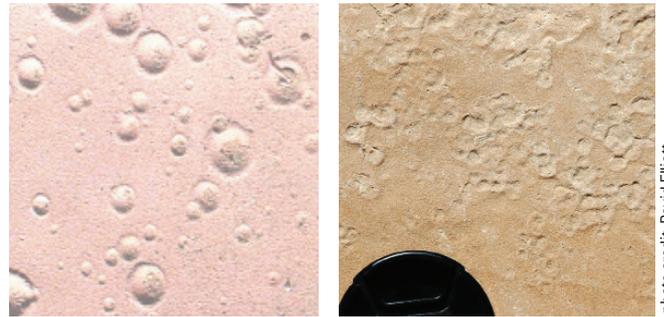


Figure 2: Fossilized raindrop prints.

photo credit: David Elliott

Coccoliths in the White Cliffs of Dover

I suggest that the coccoliths, which are a kind of algae with calcareous platelets in spherical shells, cannot be deposited beneath water thicknesses of over 350 feet during Noah's flood because they require sunlight for photosynthesis and must exist near the ocean surface to obtain the energy from the sun and that having that many coccoliths (trillions and trillions of them) in the oceanic waters at the same time as the one-year flood would cut out the sunlight for coccoliths a few feet below the ocean surface. Snelling argues (at the 13:12 mark of the video) that I cannot use the chalk (composed of coccoliths) in the White Cliffs of Dover as an example because they are on the continent and not like coccoliths that occur in modern oceans.

This is a ridiculous argument because coccoliths in the past did not grow on continents; they grew in ocean waters. He then proceeds to use an example of coccoliths deposited in Kansas, which is far in the interior of our continent. He points out that these deposits contain fossilized remains of a fish (twelve feet long) with another smaller fish in its stom-



Figure 3: White Cliffs of Dover.

ach as well as fossils of large turtles, birds, and a plesiosaur. He claims that because these kinds of creatures are mixed together, they had to be deposited suddenly during a rapid change in the chemistry of Noah's flood waters that caused all the coccoliths to suddenly plunge down and be buried. He says that they could not have been buried over millions of years by falling dead coccoliths that settle at a few inches at a time over thousands of years.

As I have pointed out, a 350-foot thickness of coccoliths cannot be living at the same time in ocean waters; furthermore, the skeletal bones of the various fish, reptiles, and birds are composed of calcium carbonate, which is the same composition as the calcareous platelets of the coccoliths. The oceanic water was saturated with calcium ions, and therefore there is no chemical reason the bones of these creatures should dissolve and disappear. They could remain on the ocean floor for millions of years without disappearing.

Moreover, Snelling's statement that birds were buried by the coccoliths is misleading because it implies that birds were living at that time (the Cretaceous Age) during Noah's flood. They were not birds in the modern sense but were gliding reptiles (ptero-dactyls) with teeth. One does not know how these various creatures could have been killed, but a toxic algal bloom could have been the cause. Such blooms commonly and suddenly kill thousands of fish and other marine creatures today.

An experiment done on a live olive tree by Charles Munroe III

I suggested that an experiment with the submergence of a live olive tree under water for three months showing that the olive tree was killed by this submergence was evidence that a worldwide flood never happened. Snelling discusses the olive tree experiment (about twenty-two minutes into the video) and asks where the published article is in which this experiment was described. He said that Answers in Genesis would not consider any assertion unless they can see a published article. Figure 4 below at left contains the images in question.

And, thereby, here is the published article. Snelling said



Figure 4: Live olive tree and same tree after submergence under water for three months. Courtesy Charles Munroe III.

that olive trees that lived during Noah's flood could have been hardier than those living today. He also asserts that olive trees would have been like orange trees in that they could reproduce asexually by budding from roots or from fragmented branches. But neither Snelling nor his colleagues have demonstrated by any experimental studies of their own that a live olive tree or any fragmented branches that have been submerged for three months (or even six months during Noah's flood) can come alive again. He is merely speculating without scientific support.

Conclusion

These five examples show that Snelling has not done his homework. I agree that I look at many situations from a uniformitarianism point of view, but geologists recognize that not all processes that occur during geologic history are necessarily slow events occurring over millions of years. Catastrophic events, such as the explosion of Mt. St. Helens, are examples. But young-Earth creationists cannot decide that uniformitarianism does not work during the Genesis week and up until Noah's flood and then decide that they will accept such processes at other times. I note that Snelling never responds to my Reason 21, in which I point out that the Redwall limestone has karst topography (cave formation) in it as well as deep erosion channels of the Surprise Canyon Formation on top of it, neither of which could happen in less than one year during Noah's flood. He chooses data that he thinks fit his model and ignores data that do not fit. Science is not done that way. As I said in my original SKEPTICAL INQUIRER article, it only takes one ugly fact to ruin a beautiful hypothesis. Moreover, a local huge flood that occurred in Mesopotamia during biblical times is certainly possible. For more information, see <http://www.csun.edu/~vcgeo005/Collins2.pdf> and <http://www.csun.edu/~vcgeo005/Carol%201.pdf>.

As a further point, my March/April SKEPTICAL INQUIRER article gave physical reasons Noah's worldwide flood never happened, but there are equally strong reasons from biological evidence such a flood never happened. See article to be published in a forthcoming issue of the SKEPTICAL INQUIRER. This article also gives evidence that the Earth cannot be 6,000 years old, but many billions of years old. •



Lorence G. Collins is a retired professor of geology from California State University Northridge. On the website *Opposition to Creationism*, he has more than three dozen articles describing the views of young-Earth creationists and their scientific errors in interpretations.