

CHAPTER 5

GENESIS: CONCORDIST INTERPRETATIONS

CENTURIES OF GEOLOGICAL EVIDENCE FOR AN OLD EARTH

During the 1700s and 1800s, geologists greatly increased their knowledge of the earth. They began their studies by assuming a model of a young earth and a single global flood. But as the new data poured in, it became apparent that their original model did not fit this large body of observation. By 1840, there were many lines of evidence that contradicted the young earth model.

- ▶ Fossils of marine life are not found in the same layers as fossils of land-based life. This is contrary to the theory of a catastrophic flood, in which the turbulent waters would mix together fossils of both types in a single layer. Instead, the fossil record in many locations has alternating layers of marine and land-based fossils, indicating that these locations have changed several times from sea to land throughout their history.
- ▶ Some sequences of thin sedimentary layers are found to be continuous over many miles of countryside. A catastrophic flood would have stirred up sediments and deposited a thick chaotic layer. A flood may cause a thin layer in patches, but a violent flood does not make widespread thin layers. These thin layers could be produced in a calm, wide sea in which sediment is deposited gradually year after year. The time required to build up so many layers of thin sediment in a calm sea would take millions, not thousands, of years.
- ▶ The formation of certain kinds of rocks is particularly difficult to explain in short time scales. Sandstone is one example. It requires four sequential processes, each taking a long time. First, hot magma cools to form quartz-rich rocks like granite, then the granite erodes over time to make quartz sand (a long slow process since granite is a hard rock that doesn't erode easily), then the sand is transported by wind or water to a place where it settles, and finally, the sand is compacted and chemically cemented into sandstone.
- ▶ Some river valleys are carved into granite or other types of rock that are hard and difficult to erode. While flooding can explain the erosion of a valley if the rock is soft (like sandstone or limestone), granite and other hard rock types do not erode quickly unless they previously contained many fractures. A single year-long flood would have made only a small dent in unfractured hard rock; it would not have carved an entire river valley.
- ▶ Contrary to Woodward's prediction from 1695, sedimentary rocks (and the fossils they contained) were *not* stratified with denser material in lower layers and less dense in upper layers. Indeed, differences between the lower and upper layers were present, but these differences could not be explained by density.

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- ▶ Some rocks indicate multiple floods or at least multiple wet periods. Samples of stratified conglomerate rock had been found in which smooth, rounded pebbles were embedded in the layers of fine-grained sediment. In itself, this is not surprising; a pebble could settle into the layers of mud that later hardened into sedimentary rock. But in some cases, the pebbles themselves were found to be a different type of sedimentary rock, such as sandstone or limestone. Thus, the pebble itself must have formed in an earlier wet period of sedimentation, dried and hardened into rock, and the rock broken apart into pebbles. Then in a later flood or streambed, water eroded the pebble to a smooth surface and it settled with other sediment to make the conglomerate rock. Rocks like this could not have formed during a single global flood.
- ▶ Some stratified rock contains so many layers that it is hundreds of feet, even miles, deep. Geologists in the 1700s were not able to drill for samples miles below the surface, but they could study mountain ranges in which the rock layers had been tipped at an angle to the horizon and exposed above the surface. In some places, the layers were documented to be miles thick when measured perpendicular to the layers. For instance, the sedimentary rocks in the central Appalachians of Pennsylvania are at least 40,000 feet thick. A single year-long flood would not have eroded enough material to deposit layers that thick.
- ▶ Volcanic cones were discovered under grasslands in south central France. Since no human record or legend tells of volcanoes in that area, the last volcanic eruption must have been before human history. Upon close inspection, geologists were able to map multiple layers of lava flows, showing that the volcanoes in that area had erupted repeatedly, hardening after each eruption and forming additional structures. Evidence also shows significant water erosion taking place between the various volcanic eruptions. This area tells of a longer and more dynamic history than could be fit into a few thousand years, even with a flood.

Because of this kind of evidence, by about 1840 virtually all practicing geologists, including Christian geologists, believed that the earth must be at least millions of years old. These geologists were not atheists who set out to disprove the Bible, nor did they necessarily have a “soft” view of Scripture. Many started out with a firm commitment to interpreting Genesis as literal accurate history, and pursued this view for well over a century. If the rocks of the earth had been consistent with a young earth and a global flood model, these scientists surely would have found it. Instead, the earth itself testified otherwise, over and over again. Christian geologists did not, however, abandon the Bible. While investigating the book of nature, they also investigated the book of Scripture, considering other ways to understand the meaning of Genesis 1.