

GENERAL SCIENCE NOTES

LOCAL CATASTROPHES, OR A WORLDWIDE DELUGE?

L. James Gibson
Geoscience Research Institute

The story of Noah and the flood has sparked intense interest and seemingly endless discussion for hundreds of years. The historical reality of a global deluge was accepted without question by most Christians until the beginning of the 19th century. Until the early 1800s, geological information was, more often than not, used as evidence of the biblical flood.

Belief in the traditional biblical account of the flood changed radically during the period from 1800 to 1850.¹ As geologists explored the sedimentary record and debated its meaning, the flood gradually became reduced from a catastrophic global deluge responsible for the stratigraphic column to a more tranquil flood responsible for only a surficial layer of “diluvium.” By about mid-century, the flood had been reduced to a local event that affected only humans. By the end of the century, it was even doubted that the flood affected all of humanity, and was restricted to the Mesopotamian Valley.²

Various factors were suggested as possible causes for a local flood. Rising sea level might have flooded the Mesopotamian Valley,³ or perhaps it was flooded by a tsunami generated by volcanic activity in the Mediterranean. Melting glaciers might have supplied water for a local flood.⁴ In an interesting repeat of history, new forms of these ideas have resurfaced recently, with some new twists.

The idea of inundation by rising sea level in the Persian Gulf has recently been revived by an international team of geologists.⁵ They attribute the rise in sea level to glacial melting, which is believed to have raised sea level more than 100 meters. As the Persian Gulf is only about 100 meters in depth, it would have been dry land during the height of the Ice Age. According to the proposal, it would have taken some 1000 years to fill the Persian Gulf, but the rising waters would have driven the inhabitants from their ancestral land and provided the basis

for stories that were handed down through the generations. It is not clear how seriously this theory will be considered. The gradual rise of sea level seems difficult to reconcile with the catastrophic event described in Genesis.

Another flood theory has been suggested by Glen Morton.⁶ Morton proposes that the biblical flood occurred when the Mediterranean basin was catastrophically filled during the Pliocene, some five million years ago. According to the Mediterranean flood theory,⁷ the Miocene collision of Africa and Europe sealed off the Mediterranean basin. The basin eventually dried up, leaving a deposit of salt on the basin floor. Then, at the beginning of the Pliocene, the dam broke, and Atlantic Ocean water poured through the strait at Gibraltar, cutting through the dam, and filling the Mediterranean in a hundred years or so. Morton's proposal is that the Mediterranean basin was populated by primitive humans in the form of erectines, or possibly australopithecines, and this accounts for the story told in Genesis. It is doubtful that this theory will become accepted, since australopithecines are not generally regarded as humans, and there is no evidence for the presence of either erectines or australopithecines in the area at the beginning of the Pliocene.

A more widely known flood theory was published in 1998 by William Ryan and Walter Pitman.⁸ Their theory is similar to that of Morton, except for the location and the timing. In their theory, the catastrophic filling occurs in the Black Sea, and occurred over seven thousand years ago. Because Ryan and Pitman have attracted considerable interest in their theory, presented in a video and a book written in a popular-style narrative, a more detailed review of their arguments follows.

In their book, Ryan and Pitman survey the history of flood exploration, beginning with the deciphering of cuneiform writing and ending with attempts to link the biblical flood to Woolley's discovery of a clay layer in the city of Ur.

The authors then lay out their own theory of a rapid inundation of the Black Sea basin when sea level breached the natural barrier separating the Black Sea basin from the Aegean Sea. They present evidence that the Black Sea was once a freshwater lake, much smaller than the present Sea. The argument is built from data collected from underwater currents, seafloor sediments, fossils, and paleomagnetism. Their conclusion is that about 7600 radiocarbon years ago, the lake was rapidly inundated with sea water, cutting a channel through the former barrier, and raising the level of the lake to that of the global ocean.

Archeological evidence, cultural legends, and considerable speculation is invoked to support a story of destruction of a lake-shore farming community due to sudden flooding of the Black Sea basin. The former residents migrated away from the Black Sea, scattering throughout Europe and southwestern Asia. Finally, the authors review the story they have created and compare it with ancient Mesopotamian flood legends.

I was struck by the story-telling ability of the authors – their book reads more like a novel than a scientific report. The personal stories of the authors add to the captivating writing style. The basic story line seems plausible. The Black Sea basin once held a freshwater lake, isolated from the sea by a narrow land barrier. The barrier was breached by the sea, presumably by rising sea level. Inflowing sea water cut through the barrier, creating the present connection between the Black Sea and the Mediterranean, and converting the lake into a brackish sea. This flood might well have made a lasting impression on any human inhabitants of the region. However, it is a long stretch to identify this event with the biblical flood.

Several features of this and other alternative flood scenarios are in conflict with the biblical flood description. Most obviously, the biblical flood ended, while the Persian Gulf, Mediterranean basin, and Black Sea basin each remain flooded. The biblical flood left no refuge for escape, and so killed all but eight of the human race. The other proposed flood locations are virtually surrounded by potential refuges, and the proposed floods would have killed at most a small proportion of the human population. The biblical ark landed in the mountains of Ararat, which is geographically distant from the Black Sea or the Mediterranean Sea. In the biblical story, the human population was given advance warning of the impending flood. An ark would be unnecessary to escape a local flood, since the population could simply migrate to a new area.

It seems clear that catastrophic floods have occurred on a scale not seen in modern history,⁹ and their stories are interesting and informative. However, these local floods do not explain important features of the biblical flood.

LITERATURE CITED

1. Stiling RL. 1991. The diminishing deluge: Noah's flood in nineteenth-century American thought. Unpublished PhD Thesis. University of Wisconsin-Madison.

2. A local Mesopotamian Valley flood theory enjoyed a period of popularity resulting from discovery of a layer of clay in the city of Ur, but this was eventually shown to be too localized to be linked to the biblical story.
3. Stiling, p 152, citing: Smith JP. 1840. On the relation between the Holy Scripture and some parts of geological science. NY: D Appleton and Co.
4. Stiling, p 340, citing: Wright GF. 1889. The glacial period and Noah's deluge. *Bibliotheca Sacra* 46:466-474.
5. Teller JT, Glennie KW, Lancaster N, Singhvi AK. 2000. Noah's flood and its impact on the Persian Gulf region. *Geological Society of America Abstracts with Program* 32(7):A276. Annual Meeting of the Geological Society of America, 9-18 November 2000. Reno, Nevada.
6. (a) Morton GR. 1995. *Foundation, fall and flood: a harmonization of Genesis and science*. Dallas: DMD Publishing. See especially p 128-145; (b) Morton GR. 1997. The Mediterranean flood. *Perspectives on Science and Christian Faith* 49:238-251.
7. Hsü KJ. 1983. *The Mediterranean was a desert: a voyage of the Glomar Challenger*. Princeton NJ: Princeton University Press.
8. Ryan W, Pitman W. 1998, 2000. *Noah's flood: the new scientific discoveries about the event that changed history*. NY: Simon & Schuster.
9. Several prehistoric catastrophic floods have been identified. The most famous may be the Missoula Flood, for which an interesting history is given in: (a) Allen JE, Burns M, Sargent SC. 1986. *Cataclysms on the Columbia*. Portland, OR: Timber Press. Other examples are given in: (b) Barber DC, Dyke A, Hillaire-Marcel C, Jennings AE, Andrews JT, Kerwin MW, Bilodeau G, McNeely R, Southons J, Morehead MD, Gagnon JM. 1999. Forcing of the cold event of 8,200 years ago by catastrophic drainage of Laurentide lakes. *Nature* 40:344-348; (c) Baker VR, Benito G, Rudoy AN. 1993. Paleohydrology of Late Pleistocene superflooding, Altay Mountains, Siberia. *Science* 259:348-350. A more recent example is described in: (d) Worsley P. 1997. The 1996 volcanically induced glacial mega-flood in Iceland — cause and consequence. *Geology Today* 13:222-227.