HAS SCIENCE DATED THE BIBLICAL FLOOD?

by Walter S. Olson

Everyone knows the story of Noah who built an ark to save his family and animals from the great Flood. This story, which comes to us from the Hebrew scriptures, has counterparts in the legends of other ancient people. Although sometimes classed as a children's story, it describes a catastrophe of incredible proportions which, in a brief space of time, wiped out most of the human race and animal kingdom.

Those who attempt to explain some of the apparent or inherent improbabilities in the story have a choice of two approaches. One is to consider it as an allegory conveying profound religious truths. Those who prefer this treatment may even say that it is irreverent to seek a physical explanation. The other, which is here given preference, is to treat it as a legend, based on actual events, preserved by oral tradition in prehistoric times until the invention of writing. Any defects would be due to the limited knowledge of the sources and imperfection in transmission. Because the ancient Hebrews had only limited knowledge of ships and navigation, their description of the ark makes it more crude than the ship described by the Sumerians. When the people in the ark saw the Flood stretching beyond the horizon in all directions without a hint of land, they might well have concluded that the entire world was submerged because neither they nor their near descendants had any remote idea of the extent of our planet. Even though their story be considered the testimony of eyewitnesses, it must be weighted against other evidence which can be related to the events considered.

Sir J. G. Frazer, noted anthropologist, is one who has studied this evidence. He concluded that the traditions of the Flood are based on catastrophes which actually occurred and not on solar myths, as some would have it. Edward Suess, a noted geologist, whose treatise, "The Face of the Earth," published 1904–9, is a great classic, devotes several pages to the subject. Analyzing the similar traditions of many peoples,

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he notes the lack of an Egyptian story of the Flood, indicating to him that it never reached the Mediterranean. Chinese and various other stories he considers to be descriptions of local flooding by rivers. Only the Hebrew, Greek, Babylonian, and Sanskrit accounts refer to a Universal Flood and have a similarity of detail which indicates, in his view, a common source. He would certainly have added the Sumerian account to the foregoing, but this was not published until 1914. He concludes that the Flood took place in the lower Euphrates Valley and that no tradition can sustain the proposition that it extended beyond the Tigris-Euphrates basin. He suggests a violent earthquake and tidal wave as the cause, aided by a violent cyclonic storm.

The Ancient Traditions

Before we take up the latest evidence from archeology and geology, we need to consider some significant details from the ancient sources. The area covered by the Flood is described as the original home of agriculture. Modern research points to the region around the Persian Gulf as the original home of the domesticated plants and animals of the earliest cultivators. This is also the traditional site of the Flood.

The chronology of the Sumerian story, taken at face value, places the earliest agriculture nearly as far back as the beginning of the Ice Age. We know that the Sumerians used a lunar calendar, and if we divide the "years" by twelve or thirteen to obtain solar years, we still have a pre-Flood period longer than the biblical account. We need not, however, accept the traditional date of 2349 B.C. for the Flood as calculated by William Whiston, since there is good evidence that the Sumerian accounts were written down before that date. It is not at all unreasonable, on the basis of the traditions, to place these events late in the Ice Age, before 10,000 B.C. At that time, the floor of the present Persian Gulf was above sea level, for the main postglacial rise had not yet taken place.

The area had become highly populous before the Flood. The Bible mentions one city, while the Sumerian account mentions five cities. All people were of one nation, speaking the same language and worshipping the same god. This would suggest a compact area with natural boundaries, such as deserts or mountains, forming barriers to the spread of agriculture and travel.

For some people, or at least for Noah, so the story goes, there was ample advance warning of the Flood, enough to permit construction of an ark. The rest were heedless of any warning, were irreligious people, and therefore perished. We might suppose that there was some

visible condition leading Noah to suspect that a flood might take place.

The flooding was sudden, taking place in a single day, the seventeenth day of the second month, according to Genesis. Afterward, it rained for a long time—forty days and nights, according to the same account. The flooding cannot be explained by the slow flooding of the postglacial rise in sea level as some scientists have tried to do. The most rapid rate of rise amounted to no more than a foot in twenty or thirty years, which can by no means be considered sudden.

The Flood lasted a long time. The Sumerian version says it lasted a hundred thousand years. According to Genesis, Noah was in the ark more than a year. This seems to rule out a tidal wave as the cause, since it recedes as rapidly as it comes, gives little advance warning, and does not extend far inland to cover large areas.

The ark came to rest on high land—on Mount Ararat, according to Genesis; on a peak of the Himalayas, according to the Sanskrit versions; and on the island of Dilnun or Bahrain, according to the Sumerian version. The survivors came out of the ark and proceeded to plant a vineyard and till the ground. There is no statement that they ever returned to their original home.

Modern Research

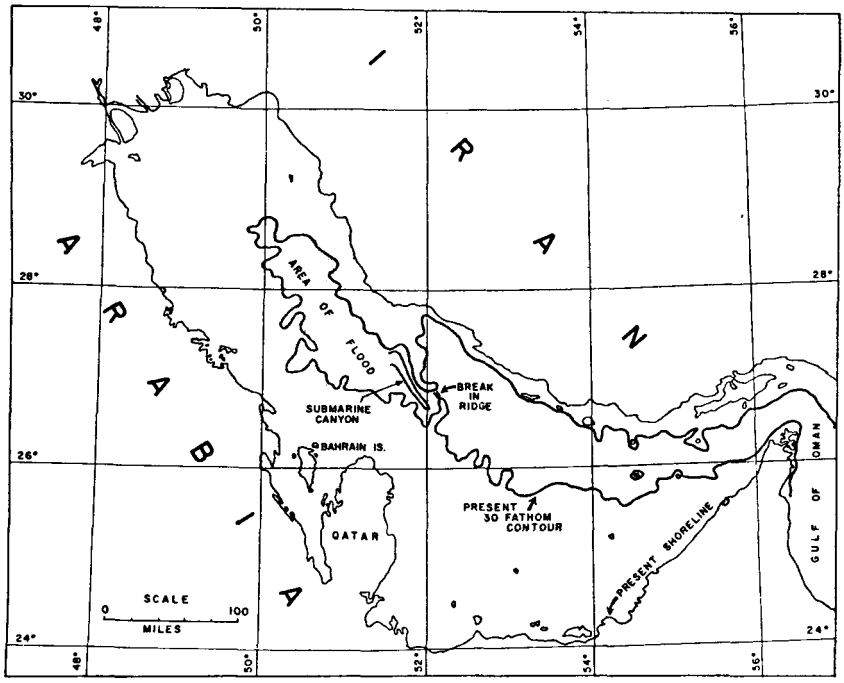
To these details, we may add some significant facts from modern geological and archeological research. The most important are dates derived from radiocarbon analysis. These have revolutionized prehistory by giving us an exact chronology of the past forty thousand years. One series of dates covers the postglacial rise of sea level, another the dates of the earliest agricultural communities in the Persian Gulf region.

During the Ice Age, much of the water from the ocean was extracted and locked up in the northern ice sheets of America and Europe, which caused a lowering of sea level. Coral reefs and strand lines which then stood at sea level are now deeply submerged; the shells and corals left behind at these levels can be dated by the proportion of radioactive carbon which they contain, telling us when the sea stood at this level. About nineteen thousand years ago, sea level stood 390 feet lower than it now does. The Nile Valley and the Tigris and Euphrates Valleys stood this much higher in relation to the sea than now. These three rivers had steeper gradients and became deeply entrenched.

The Alps, the Zagros Mountains, and the Himalayas had long glaciers extending southward. The areas to the north of these ranges were unsuitable for agriculture. Only hunters of the bison, aurochs, woolly mammoth, and cave bear could make a precarious living there. The

entire Persian Gulf was dry land, as was the North Sea and much of the Atlantic Coast of the United States.

To get an idea of the situation and topography of the Persian Gulf as it existed during the Ice Age, we may study the U.S. Navy Hydrographic Chart of the area (H.O. 3647), realizing that changes have taken place in the intervening time (see the map below). These changes



THE PERSIAN GULF

A map of the area flooded catastrophically by a rise in sea level. (Based on interpretation of bathymetric data from Hydrographic Chart H.O. 3647 of the Persian Gulf.)

would largely represent deposition of sediments in the low areas plus erosion by the Flood itself.

Now assume that sea level stands at the fifty-fathom contour, or three hundred feet lower than now. Tracing the forty-fathom contour around, we find that there is a ridge running across the Persian Gulf from the Qatar Peninsula northward to the Iranian coast. The lowest part of the ridge appears to be a little less than thirty fathoms, but may have been higher originally. This ridge divided the Persian Gulf into two basins: an eastern basin opening into the Gulf of Oman and the

Arabian Sea, and a western basin extending to the head of the Persian Gulf.

The eastern basin had a river running along the Iranian shore which was fed by mountain streams and melting glaciers and had built a delta seventy miles long into the Gulf of Oman.

The western basin was an area of internal drainage, like the Jordan Valley and our own Imperial Valley. It was a richly alluvial area, fifty miles wide and a hundred and fifty miles long, as large as the state of New Jersey. It was originally longer and deeper, but has been gradually filled by sediments from the Tigris and Euphrates Rivers which are building a delta into the basin.

During the late Ice Age, this basin had an agreeable climate, much like the Mediterranean coast or our own California coast. With a rich soil, nearly continual sunshine, and brief periodic flooding by the Tigris and Euphrates Rivers during the spring rains, it was an ideal place for growing cereals. It might even be the site of the Garden of Eden. No place in the world better fits the conditions and description of our antediluvian homeland.

About 11,500 years ago, or 9500 B.C., the sea had reached a level around two hundred feet below the present and was still rising according to data published in the Bulletin of the Geological Society of America in 1961 by McFarlan, Curray, and others. The eastern, or lower, basin was flooded. Some of the inhabitants of the western basin must have been aware that the rising sea threatened to breach and overflow the ridge separating the two basins and engulf the western basin. This might explain why Noah was forewarned into building an ark to escape the Flood.

Apparently the waters did break through during a considerable storm and swiftly eroded a deep channel, fifty miles long, running northwestward from the ridge. This channel may be seen to start from a point located at longitude 52 degrees East and latitude 26 degrees, 35 minutes North. The entire cultivated area was flooded permanently. Nearly all the people and domestic animals drowned. Whether by ark or by land, some few survivors reached the foothills of the Zagros Mountains and were forced to start afresh to establish their agriculture and build new homes.

Considerable archeological work has been done, and accurate dates are available for villages in these areas. These dates are consistent with the dates indicated for the Flood. The earliest date, 9000 B.C., for the

settlement at Karim Shahir, in Iraq, would be five hundred years after the Flood. Jarmo and Tepe Sarab in Iran are dated about 6750 B.C. By this time, the agriculturists had spread far, reaching close to the Mediterranean, near Aleppo and Jericho, and, not much later, Anau, in Turkestan.

Between 5000 and 4000 B.C. the sea had risen to near present levels. The deeply cut channels of the Nile, Tigris and Euphrates, and Indus Rivers filled with alluvium, and the rivers spread out over their valley floors. The annual cycle of flooding in the Nile Valley became established. The farmers came down from the hills into Mesopotamia and found conditions now ideal for growing cereals, much like their original homeland situation. Immigrants from Syria established themselves in the Nile Valley; others from the Iranian plateaus descended into the Indus Valley.

While these people no longer had a common language, their cultural similarities were great. They had the same kind of tools and implements, the same domestic animals and plants, common religious elements in the worship of the sun and dragons—all indicating a common center of origin. This we believe was in the western part of the Persian Gulf, still submerged under the waters of the Great Flood.

There is no certain proof for any event of the past. It is impossible to return and see how it actually happened. The evidence exists only in the present; but, of all events of prehistory, the Flood appears best supported by tradition and now by scientific evidence. These point to a date around 9500 B.C. for this most awesome experience of our prehistoric ancestors.

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