

Found: Possible Pre-Flood Artifacts

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Scientists said today that they had discovered **remnants** of human habitation under the Black Sea that they believe is the first proof that people thrived along an ancient shoreline before it was **inundated** by a great flood thousands of years ago.

Dr. Robert D. Ballard, the undersea explorer whose robotic devices have resolved many underwater mysteries, including the resting place of the Titanic, said an expedition he is leading had discovered a well-preserved structure that might be thousands of years old 12 miles off the coast of Turkey, near Sinop.

An underwater robot, scouting about 300 feet below the surface two days ago, found a rectangular area measuring about 12 feet by 45 feet on which there appeared to be a collapsed wood and clay structure.

"Artifacts at the site are clearly well preserved, with carved wooden beams, wooden branches and stone tools collapsed amongst the mud matrix of the structure," Dr. Ballard said.

The expedition, sponsored by the National Geographic Society and others, is part of a project to survey the coastal waters of northern Turkey for signs of human settlement around the time of a great flood. Some scholars believe that such a flood inspired the biblical story of Noah; it may also be the source of the flood tale in the Babylonian story of Gilgamesh.

Using sonar equipment, the expedition has mapped large areas of the coastline and found hundreds of potential targets to examine more closely with the underwater robots operated from the research ship Northern Horizon.

In a telephone interview from the ship, Dr. Ballard said the site near Sinop could be the first of many in the area that could answer questions about the habits and lifestyles of a little-known ancient culture suddenly uprooted and forced to flee by flooding water.

"Now that we know what these sites look like on sonar, now that we recognize their signatures, we're regrouping to continue the search," he said, noting that the target area was about 200 square miles of what would have been livable **terrain** before the flood. Researchers have already identified a second site seven miles away. Pieces of **ceramics** suggest that it, too, may have been an inhabited area, he said.

Dr. Fredrik T. Hiebert of the University of Pennsylvania, chief archaeologist on the project, also was enthusiastic about the find, occurring two weeks into the five-week mission. "This is a discovery of world importance," Dr. Hiebert said from the ship. "We have the first site with direct evidence of human occupation on the old coast.

"Now we can say there were people living around the Black Sea when it was a freshwater lake before it was flooded."

Remnants = remains
Inundated = flooded

Terrain = land
Ceramics = pottery

Dr. Hiebert said the underwater structure closely resembled the wood-and-clay "wattle and daub" buildings still common in the area. "This style is distinctively Black Sea," he said.

"This discovery will begin to rewrite the history of cultures in this key area between Europe, Asia and the ancient Middle East," he said.

Dr. Ballard said earlier studies of seashells from the area helped to date the underwater coastline. Shells from an extinct type of freshwater creature are all 7,000 years old or older, and shells from saltwater shellfish date from 6,500 years ago.

"We know that there was a sudden and dramatic change from a freshwater lake to a saltwater sea 7,000 years ago," he said, "And we know that as a result of that flood a **vast** amount of land went underwater."

Dr. William B. F. Ryan and Dr. Walter C. Pitman 3rd, two geologists at Lamont-Doherty Earth Observatory in Palisades, N.Y., a branch of Columbia University, **speculated** in their 1997 book, "Noah's Flood" (Simon & Schuster), that melting European glaciers at the end of an ice age **unleashed** a great flood that changed a small freshwater lake into the saltwater Black Sea.

According to the book, melting glaciers raised the level of the Mediterranean, causing water to break through the narrow Bosphorus and rapidly flood the lake. Water poured in so rapidly, the Columbia researchers said, that it would have widened the surface of the lake by as much as a mile a day, submerging the original shoreline and causing any population to flee.

Dr. Ryan said in an interview that he was thrilled to hear of Dr. Ballard's discovery and was surprised that evidence of human habitation on the old shore had been found so quickly.

Dr. Ryan **likened** the discovery to finding Pompeii, the ancient city buried by Mount Vesuvius. "Peel away the ash of Vesuvius and you see life on the day of the eruption," he said. "Here you have Neolithic life on the day of the flood."

Dr. Ballard said that no artifacts had been removed from the first site and that it would not be disturbed until it was thoroughly mapped. The first priority, he said, is finding and mapping more sites.

"We're just beginning our work and understanding what we have here," he said. "At some point, after we fulfill all the requirements of mapping the site, we hope to recover some artifacts to learn what kind of people lived here."

Dr. Jerome L. Hall, president of the Institute of Nautical Archaeology at Texas A&M University, praised Dr. Ballard's work.

"According to the scientific method, you formulate a hypothesis, in this case the flood **spillage** theory for the Black Sea, and then you test it," Dr. Hall said. "One test is finding remnants of a civilization that was affected and looking for evidence to support the flood theory. This is how you do good science."

Vast= very large

Speculated= hypothesized

Unleashed=let go

Likened= compared

Spillage= spreading