A supposed cast of Noah's ark in eastern Turkey

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I have been corresponding with a person who is certain that the 515-footlong ark-shaped structure in eastern Turkey near Dogubayazit is either a fossilized remains of Noah's ark or a cast of its former presence (Fig. 1; Fasold, 1988; Collins and Fasold, 1996). No amount of scientific evidence against this model

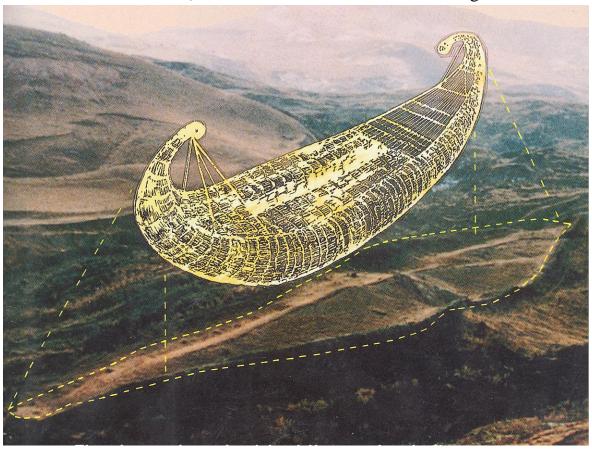


Fig. 1. Possible Noah's ark constructed like an Egyptian reed boat. (From book cover; Fasold, 1988)

changed his mind because the Bible says that Noah's ark did exist, and as he said: "Because it looks like a boat, it must be a boat." Therefore, in his mind, the arkshaped structure in the mountains of Ararat must be the fossilized remains of Noah's ark or a cast of it, such as the cast of an ancient boat buried at Sutton Hoo near Woodbridge, Suffolk, England.

The Sutton Hoo boat was buried in a 6th to 7th century Anglo Saxon cemetery as a tomb for an important person living at that time. Its wood structure has long ago decayed and disappeared. Nevertheless, the outline of the boat and impressions of its wood planking and beams can still be seen although all the wood is now gone (Fig. 2). Many different kinds of man-made artifacts have been found there, including gem-studded jewlery, a ceremonial helmet, a shield, silver plates, an *iron* sword and other *iron* objects, and two bushels of *iron screw bolts* (presumably rivets for the boat).



Sutton Hoo. http://en.wikipedia.org/wiki/Sutton_Hoo. (Last accessed, February 14, 2010)

Fig. 2. Sutton Hoo boat, showing casts of planks and beams.

In eastern Turkey, the ark-shaped structure (called the Durupinar ark) likewise contains neither wood nor petrified wood. The absence of wood or petrified wood is indicated by collections of 12 samples of rock from inside the supposed ark (the "deck," "walls," and the top side-edge or gunnel of the boat) as well as outside the supposed ark in the "ribs" of the boat. David Fasold was told by other investigators at the site that these rock samples were petrified wood. I made thin sections of each sample, and none is petrified wood. All were volcanic basalt or andesite. Therefore, all that exists as evidence for Noah's ark is the broad boat-shaped outline (Fig. 1). This evidence is circumstantial because its 515-foot length matches the 300-Egyptian-cubit length of Noah's ark (Fasold, 1988). Nevertheless, casts or impressions of former wood planking and beams of the ark might be expected to be present, as at Sutton Hoo (Fig. 2), if this "ark-structure" is truly a remnant of Noah's ark.

Supposed vertical fossilized boat "ribs" on the side of the "ark-structure" can be seen to extend to the top edge of the boat (Fig. 3). However, the vertical rib pattern results from erosion of weathered, less-well-cemented rock grains along vertical joint planes that cut horizontal sedimentary layers that extend along the side of the "ark-structure." In two videos of the ark site, one made by Ron Wyatt in 1994 ("Discovered – Noah's Ark") and the other produced by American Media ("The Discovery of Noah's Ark"), these horizontal sedimentary layers can be seen as being continuous through the vertical supposed "ribs." Near the bow of the boat in one of the lower sedimentary layers, a former small stream has cut into the layer, creating a 2-3 foot channel in which rounded cobbles have been deposited. Later this channel and its cobbles were buried by sediments that now occur in the next overlying sedimentary layer. Thus, the "ribs" are not remnants of wood or petrified wood of Noah's ark. They are sedimentary rock layers that have been eroded into a ribbed pattern. Moreover, unlike at Sutton Hoo, none of these



Fig. 3. Distant view of supposed vertical "ribs" on side of "ark-structure." (photo provided by David Fasold)

sedimentary rocks in the layers has any casts of remnant wood planks or beams against which these sedimentary layers could have been deposited and molded to preserve wood outlines.

Nevertheless, it is still theoretically possible that the Durupinar boat-shaped structure (as revealed by its streamlined outline) could be a cast of a large boat in which sediments were later introduced into the hull of the former Noah's ark, thereby preserving its outline when these sediments hardened into rock. For comparison, at Sutton Hoo, dirt that covered the burial boat eventually collapsed and molded around the wooden planks and beams of the burial boat, taking on their shapes. Subsequently, this dirt became sufficiently cemented to preserve the boat shape and the casts of the former planks and beams while bacteria and fungus destroyed the former wood. When this Sutton Hoo site was excavated, the presence of the rounded bottom of the former boat and its wooden frame were clearly evident (Fig. 2). Therefore, did something similar to this happen at the Durupinar ark site? Dr. John Baumgardner went to the site and did seismic studies and drilling at various places along the length of the Durupinar ark-shaped structure and found that the underlying rock is variable from one end to the other (even finding masses of basalt in some places) and that a *rounded bottom* or any boat bottom of whatever shape does not exist, as at Sutton Hoo, which would be expected if this structure were truly a cast of Noah's ark (Snelling, 1992).

Proponents of the "ark-structure" being Noah's ark report flakes or fragments of iron that are scattered throughout the ark and in the "ribs" of the ark, claiming they are remnants of iron "rivets," "washers," and "brackets," supposedly used by Noah to hold the walls of the ark together (Fasold, 1988). Unlike the iron screw bolts or rivets found at Sutton Hoo, these iron-containing flakes and fragments found at the "ark-structure" are not pure iron metal. Instead, they consist of the iron-containing minerals — magnetite or limonite (Collins and Fasold, 1996).

The mineral magnetite is an iron oxide (containing 72.4 % Fe) that is a common component of igneous rocks and is particularly abundant in the basalt and andesite volcanic rocks in eastern Turkey. For example, the thin sections of the basalt and andesite rocks collected by David Fasold (that were supposed to have been petrified wood) contain abundant magnetite grains (1-3 %; Fig. 4).

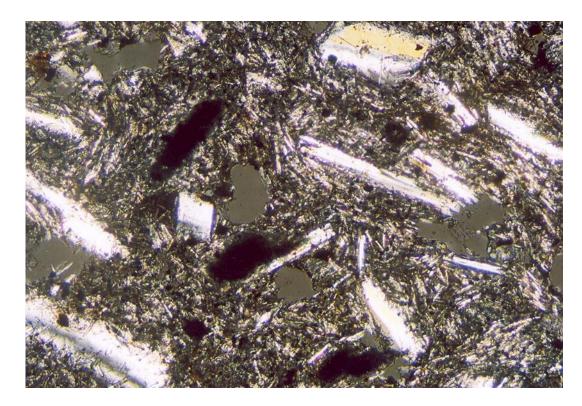


Fig. 4. Black magnetite grains in basalt; plagioclase crystals (white). (40x). This was supposedly petrified wood but definitely is not.

During weathering and erosion of distant volcanic mountains, such magnetite grains could have been loosened by erosion and weathering and then transported by streams to be deposited in the sedimentary layers that now occur in the "ark-structure." Furthermore, such magnetite grains in the sedimentary rocks of the "ark-structure" can also be loosened by erosion by modern-day streams and transported out of the interior of the ark. For example, David Fasold (1988) has a field sketch in his book showing parallel iron readings (from a metal detector) extending beyond the end of the "ark" (Fig. 5). He could not explain why they occurred there because they did not fit his model for how the ark was constructed, as shown on Fig. 1. The explanation is simple. Because magnetite is heavy for its size, when transported by water, it tends to concentrate as placer deposits, like placer gold deposits. (Anyone who has panned for gold knows that the yelloworange gold nuggets and tiny grains are commonly mixed in with black magnetite sand.) Therefore, these parallel iron readings beyond the "ark-structure" are places where the eroded, loosened, transported, and heavy magnetite grains have been dumped by rain water as this water flowed out of the ark interior.

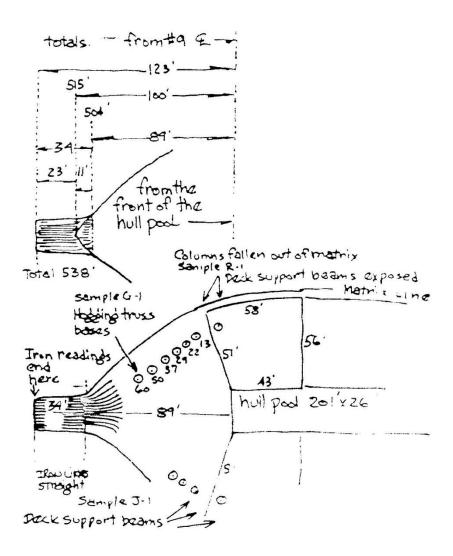


Fig. 5. Field sketch made by David Fasold of the "bow of the ark" showing parallel iron readings extending beyond the end of the "ark" (bottom, left side).

Proponents of the ark claim that they have found "iron brackets" that Noah used to help hold the walls of the ark in place. A thin section of this "bracket" (Fig. 6) shows that no iron metal is present and that it consists of black magnetite grains altering to limonite.

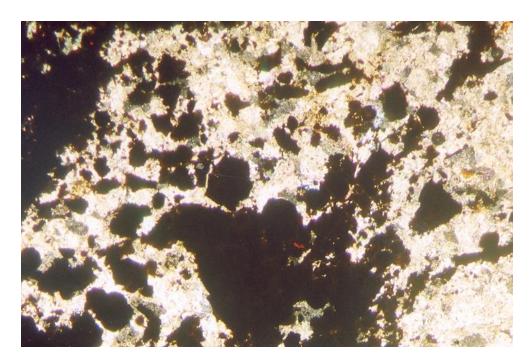


Fig. 6. Close-up view of magnetite grains (black) in a supposed "iron bracket" that have been altered to limonite (brown fringes) and cemented with calcite (white), chlorite (bluish-green), and clay (gray) minerals. No iron metal is present. (40x)

Like the streams of magnetite deposited by rain water beyond the ark, some magnetite grains could have been washed into right-angle fractures in the rocks. There, their concentrations in the fractures make them look like "right-angle brackets" (Fig. 7). Magnetite frequently alters to limonite (a yellow- to orange-brown, rusty-looking, hydrated, iron oxide), so the brownish fragments scattered throughout the "ark-structure," look like rusted metal.



Fig. 7. A slice through a supposed "iron bracket" (about actual size) that is composed of magnetite grains that have been altered to brownish limonite.

Proponents of the ark also claim that they have found rivets and washers in the "ark-structure" which Noah is alleged to have used to hold the walls of the ark together. One example is shown in Fig. 8. In the two videos (mentioned above) the black rocks were alleged to be petrified wood. However, the black rock surrounding the washer and rivet (Fig. 8) is volcanic basalt and not petrified wood. The evidence for this identification are the tiny white laths of plagioclase feldspar (like the white laths in Fig. 4) that occur in the matrix. It would have been impossible for Noah to have screwed an iron rivet into volcanic basalt. On that basis, that black material in the supposed "washer" and "rivet" consists of magnetite grains that were deposited on a fracture face, like the magnetite grains that occur in the iron bracket (Fig. 7). If Noah had really used such rivets and washers, thousands of them should have been found and not just one or two. Moreover, the rivet head would have projected above the plane of the washer and not be in the same plane.



Image from

http://www.throneofgod.com/NoahsArk/natlgeo.html. (Last accessed, February 14, 2010)

Fig. 8. Supposed "rivet" and "washer" found at the "ark-structure." What looks like pieces of iron metal are likely black magnetite grains on basalt. White plagioclase crystal laths, like those in Fig. 4, can be seen in the surrounding black basalt. Thus, the underlying rock is not petrified wood.

Therefore, the belief by proponents of the "ark" that the "rivets," "washers," "iron brackets," and other iron-rich, rusty-looking flakes and fragments are evidence that the Durupinar "ark-structure" is Noah's ark lacks scientific support.

One rock that occurs a few kilometers from the ark site and which was alleged to be either fossilized reeds (or bark) or a cast of bundles of reeds (Fasold,

1988; Collins and Fasold, 1996) is a remnant block of "crinkled" orthopyroxeneolivine peridotite, a rock typical of what is found in the upper mantle (Fig. 9). No preserved wood cell-structure exists in this peridotite rock – only iron- and



Fig. 9. Supposed "cast of bark." This rock is metamorphosed (crinkled) peridotite, formed only at high temperatures and pressures in the mantle. Image from http://www.throneofgod.com/NoahsArk/natlgeo.html. (Last accessed, February 14, 2010)

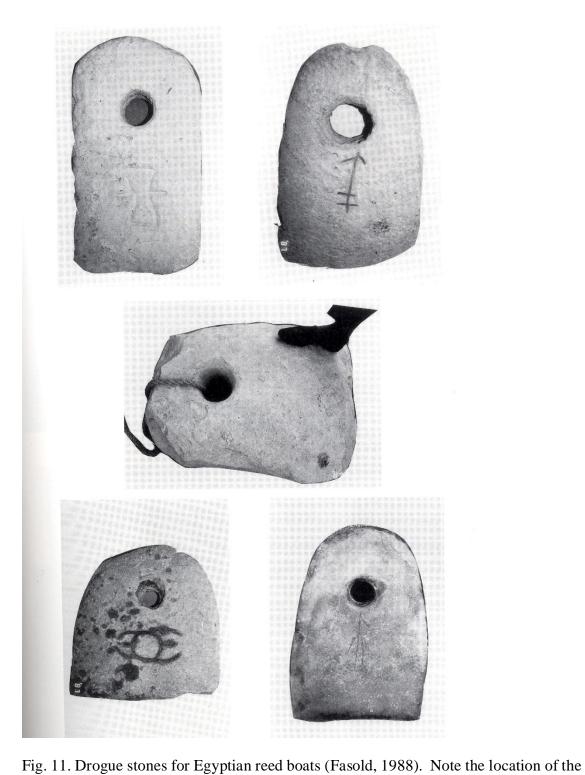
magnesium-rich silicate minerals formed at great depth and at the high temperatures (greater than 1,000°C) that occur in the mantle.

Supposed "drogue stones" for Noah's ark, with a hole at the top, occur nearly 24 kilometers away from the "ark-structure" near Kazan (Fig. 10; Fasold,



Fig. 10. Supposed "drogue stone" for Noah's ark (Fasold, 1988).

1988; Collins and Fasold, 1996). These stones (as many as 11-14) consist of anorthosite that contains plagioclase crystals with tiny black magnetite inclusions. However, similar stones with a hole at the top are also found as religious monuments in scattered cemeteries in eastern Turkey and Armenia (Snelling, 1992). Therefore, the stones at Kazan are not unique and unlikely to be drogue stones, particularly when the holes are too close to the upper edge for inserted ropes to support stones weighing as much as 4 to 10 tons. The anorthosite of these supposed "drogue stones" (Fig. 10) probably came from the same mantle rocks from which the "crinkled" peridotite (Fig. 9) would be found. Moreover,



holes well below the top in comparison to the hole in the supposed "drogue stone" of Fig. 10.

anorthosite or peridotite masses do not occur in Mesopotamia in or near the Garden of Eden where Noah could theoretically have built the ark.

Drogue stones used by Egyptian sailors for much smaller reed boats weigh 200 to 400 pounds and have holes farther inside from their outer edges (Fig. 11).

The Durupinar "ark" (as seen in the landslide, Fig. 12) is a perfectly natural geologic formation that is composed of basalt and andesite volcanic rocks (revealed by drilling done by Dr. John Baumgardner), lahars (former mud-flows containing boulders of basalt), various river-deposited sedimentary rocks (as seen in the side of the "ark-structure"), and microfossil-bearing white limestone. The microfossil-bearing white limestone lens, which can be seen near the midpoint of the "ark-structure" as a resistant outcrop that projects at right angles to the length of the boat (Fig. 1), matches similar outcrops of microfossil-bearing white limestone near a Visitor Center, a few hundred meters away. The flowage of the landslide debris (Fig. 13) around this limestone and other resistant rocks eroded these rocks into a streamlined boat shape (Snelling, 1992). Outside the "ark-structure," adjacent to the white limestone lens, the landslide debris is raised into a gentle ridge (Fig. 1), and this area may represent a continuation of the resistant limestone ridge under the landslide toward the Visitor Center.



Fig. 12. Aerial view of landslide that eroded resistant anchored rock into a streamlined boat-shaped structure (center of image). (Image provided by David Fasold)

John Adams once said: "In the end, most people believe what they want to believe, not what a rational evaluation of the facts would lead them to believe." And, "Our passions cannot alter the facts, only hide them from us."

Glossary

Anorthosite – a coarsely crystalline igneous rock predominantly composed of plagioclase feldspar.

Drogue stone – an oblong heavy stone with a hole in it near one end where a thick rope could be threaded through the hole. Such stones (weighing 200 to 400 pounds) were lowered through a central well in reed boats and used by early Egyptian sailors to keep the long ends of their boats turned at right angles to incoming storm waves so that the boat would not be hit broadside and overturned.

Egyptian cubit – a length of about 20.6 inches.

Magnetite – a magnetic iron oxide mineral commonly found in basalt and other igneous rocks. The iron is easily detected by a metal detector. Although magnetite consists mostly of iron, it may also contain small percentages of titanium, manganese, and magnesium.

Resources

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