THE ARK-SHAPED FORMATION IN THE TENDUREK MOUNTAINS OF EASTERN TURKEY

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About 1959 an object, in shape very suggestive of a ship, was discovered during routine examination of aerial photographs of parts of Eastern Turkey. The shape, and the fact that this object is not very far from Mount Ararat, naturally led to the suggestion that the object might be the Ark. Subsequent examination on the ground, however, showed that the object was a formation in clay, not an artifact of wood. The author suggests here that, while the formation is not the Ark itself, it may be the resting-place of the Ark. For the Ark might have left its impression in mud, which later hardened into clay.

I. Search for the Ark on Agri Dagh

In spite of the fact that more than 30 expeditions have gone to Bu Agri Dagh, the mountain commonly called Ararat, in search of Noah’s Ark over the last decade and a half,1 those expeditions have not turned up any solid evidence or “hard” facts to indicate that the remains of the Ark are located there, or that the right mountain upon which to search has been identified. The identification2 of the mountain now known as Agri Dagh as the one upon which the Ark landed dates at least as far back as Jerome in the 4th century A. D., but there is no evidence older than that for such an identification from earlier Christian sources.

According to the Bible, the Ark landed upon the “Mountains of Ararat” (Genesis 8:4). It seems reasonable3 for historical, geographic, and linguistic reasons to locate the Biblical mountains of Ararat in the same region as that later occupied by the kingdom of Urartu which is especially well known in Assyrian texts from the 9th and 8th centuries B. C. The same region was also referred to, but not located precisely, in one of the early epics of Sumerian literature known as Enmerkar and the Lord of Aratta.4

Beyond this, however, neither the Bible nor ancient texts from the pre-Christian era have provided any evidence for any more precise location of the particular part of the mountains in that area where the Ark landed. From the Biblical viewpoint, therefore, “Mount Ararat” is a misnomer since Ararat was a region, not a solitary mountain.

Aside from these and other traditions, the only additional information available to recent expeditions is that obtained by satellite photography. The only possible substantive evidence consists of wood brought down from Agri Dagh by F. Navarra in 1955, and by Navarra5 in cooperation with the SEARCH expedition of 1969. This wood is obviously hand-tooled, looks very old, is said to be white oak, and radiocarbon dates6 to the 6th century A. D.

The radiocarbon date of this wood is of considerable interest in view of information given to me by an Armenian colleague, who has been entrusted with publication of some of the Armenian Christian inscriptions copied by Ark-searchers in the vicinity of Agri Dagh. Some of these inscriptions are dated to the 6th century A.D. and they indicate that this mountain was already considered a holy place by that time; and other Armenian traditions, both ancient and modern, indicate that regular pilgrimages were made up the mountain. It would come as no surprise, therefore, that such pilgrims might have built a shrine on the mountain, which I would suggest is the source of such wood as has been found.

As far as the satellite photographs are concerned, the only place that I am aware of where the general reading public can see such a photograph is in the second edition of John Warwick Montgomery’s book, The Quest for Noah’s Ark.7 The first problem with this photo, as he explains, is that when it is enlarged the clarity necessary to outline the Ark is lost, but when it is viewed unenlarged the details are not large enough to outline it. This problem is minor, however, in comparison to that presented by the location on the photograph where Montgomery suggests the Ark may be, for he points to a rectangular outline in a thin ridge that extends out into the Ahora Gulch.

The Ahora Gulch is an extensive rift many miles long and thousands of feet deep and wide in the northeastern quadrant of the mountain. Of the event which produced this topography C. L. Burdick has written, a conservative estimate would be that from one to two cubic miles of rock debris and volcanic ash were blown from the mountain. The larger surface fragments were hurled miles away, down toward the lower slopes of the northeast side, where they are yet visible.8 If the Ark did land on the ledge that protrudes into this gorge as Montgomery has suggested, then it seems most likely that it would have been destroyed when the Ahora Gulch blew out.

II. The Tendurek Mountain Formation

These brief comments on the reasons why Agri Dagh has been identified as the mountain upon which the Ark landed suggest that such evidence is far from conclusive. Agri Dagh may have been the mountain, but then again it may not have been. At least those who have nominated it as that mountain have not produced any evidence which makes that proposal convincing. That being the case, I would suggest that other possibilities should also be entertained, if other evidence is available.

The only other area from which evidence has turned up thus far is located some 50 kilometers southwest of Agri Dagh, at the 6,000 foot level in the Tendurek Mountains. As far as I am aware, it is the only other site studied by an expedition searching for the Ark.

The discovery in this area which stimulated that expedition was made in the winter of 1959 by a captain in the Turkish Army, Ilhan Durupinar by name, while he was surveying some aerial photographs of Eastern Turkey taken by Major Sevket Kurtis for the national A

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geodetic survey and NATO. In surveying those films, Durupinar noted an outline in a lava flow that looked remarkably like the outline of a ship. See Figure 1. When news of this find reached the United States, an expedition was organized to go to that site to examine it for the possibility that it might be the Ark. The expedition reached the area in the summer of 1960. It was determined that there were no archaeological artifacts whatsoever at the site.

Since no archaeological evidence for the Ark or human artifacts were found there, the question arises as to whether this formation could be related to the Ark in some other way, i.e., as geological evidence instead. My first impression from looking at the aerial photograph of this formation in the summer of 1974 was that it might be a lava mold or cast of the Ark, similar to tree molds, etc. found in Hawaii and in other volcanic areas. At that time an acquaintance of mine put me in touch with Dr. C. L. Burdick who had visited this site in 1973; and he was kind enough to supply me with some information about it. The idea that this might be a lava mold of the Ark was quickly dispelled by the information that although this formation lay in a lava field it was:

... not lava at all, but hardened clay carried down by a stream. This was in a volcanic area, however; and apparently an earth fault or fracture opened up, some few hundred feet in length; and up through this fracture magma forced its way through the hardened clay, raising up a body of clay about 550 feet in length and 175 feet in width along the body of the extrusion. At the ends of the extrusion the clay formed a pointed shape like a ship.

The clay side of the “ship” was about 50 feet above the wash from which it arose, leaving deep fissures between the “ship” and the surrounding clay bottom of the arroyo or gulch. The clay carried small rocks embedded in the clay sides of the “ship”. Along the center of the “deck” was the raised body of the granitic or rhyolitic intrusion. The whole thing was a remarkable freak of nature.

Upon further inquiry Dr. Burdick informed me,

It is indeed a very strange phenomenon. From the air it could look like a ship, designed for speed like the Queen Mary ... .

There is nothing about the clay and rock extrusive to suggest a mold. The “ship” extrusion has broken away from the surrounding clay beds and left a two foot crevasse that one could fall into very easily if he were careless. There are no wood or ship impressions of a mold or cast. I suppose the pressure of the rising magma caused the fracture in the rock below allowing the molten magma to rise, forcing the hardened clay above it to rise also. This must have been very recent, far more recent than the time of the flood, else the crevasses along the side of the rising mass would have been filled in with sediment ...

This ship-like shape appears to be due to the length and shape of the earth fracture or fault through which the magma rose, rather than because of the actual presence of the Ark itself.

The clay composition of this formation raises the question, what kind of surface did the Ark land upon?
Regardless of what type of rock underlay that surface, it seems likely that the surface that overlay that rock consisted of mud at the time the Ark landed there. This is suggested by the lengthy interval between when the Ark landed and when Noah disembarked, and by the reference in Genesis 8:13 to the drying of the face of the ground where Noah looked. Had the Ark landed in an area of bare rock not overlaid with mud there would have been no need to have delayed departure from the Ark for so long a time while the face of the ground dried up.

If we looked for the mud into which Noah’s Ark settled, what form might we find it in today? Other possibilities might be proposed, but I would suggest that the clay of which this formation in the Tendurek Mountains is composed would be what I would expect. What has been studied then is not the Ark but the mud, now solidified into clay, into which the Ark may have settled. This would explain not only the composition of the formation but also its shape.

One need not be an expert in geology, archaeology, or nautical engineering to see that the outline in the photograph above obviously resembles that of the hull of a ship. This was what brought it to Ilhan Durupinar’s attention, this was what caused some commotion when the aerial photograph of it was published in Life magazine, and this was what led to the 1960 expedition that went to examine it.

The expert in aerial photogrammetry from Ohio State University who read the film said of it before going to the field with the expedition, “I have no doubt at all that this object is a ship. In my entire career I have never seen an object like this on a stereo photo.”13 This formation certainly does have the outline of the hull of a ship, which is a fact that no one has denied; and even Dr. Burdick, who visited the site but does not relate it to the Ark, was impressed with some of its ship-like characteristics, i.e., a prow “like the Queen Mary”.

The logical question that stems from this is, if this is the place where the Ark landed, then where is the Ark? Aerial photographs of this area taken in 1959 show that this formation lies in a lava flow, and this interpretation has been confirmed by surface observation since that time. The answer to this question seems rather evident, therefore, since a ship constructed of wood in such a situation would have burned.

According to the temperatures sampled at active volcanoes and laboratory experimentation, erupting magmas generally reach about 1000°C, or approximately 2000°F. While the wood of the Ark might have been more resistant to heat than modern woods, there does not appear to be any doubt that it would have burned when surrounded by such a flow.

In view of the hypothesis that wood may have burned here the soil that lies within the confines of the walls of this “ship” is of some interest. According to the color photograph supplied me of that area, the soil there looks quite gray. This may not at first appear remarkable because it does not contrast with the surrounding lava field. On the other hand, the color photograph of the outside of this clay wall above the crevasse around its base shows a rather brown color mixed with the red of some iron oxides, as a geologist has pointed out to me.

One might suggest, therefore, that the gray color of the soil inside this formation may be significant and that the color could be an indication that the soil contains considerable ash. In addition, a member of the 1960 expedition to this site told me that it appeared to him that the soil within those walls had a particular greenish hue. If this observation is correct, it would be of interest to see whether that soil contains any evidence for the presence of algae or chlorine-containing compounds.

### III. The Alternative Interpretation

The principal alternative interpretation of this formation to the one proposed here is the one proposed by Dr. Burdick. His interpretation is that the clay which hardened here was first carried down by a stream and then it was uplifted by magma that came up through a fracture in the earth located directly beneath it. This explanation breaks down into two causative forces, the stream that laid the clay down and the magma that lifted it up. Taking the last point first, it still is open to question whether the lava surrounding this formation came out from a fracture under it or was part of a more general flow in the area.

This suggestion was based upon surface observations alone but the aerial photographs of the area demonstrate the direction of flow of the lava in the field in which this formation lies. It seems more likely to me that the lava surrounding it was part of a large flow that passed through this area, hence its appearance as a ship caught in a stream in the aerial photograph.

The more important part of this problem is not how this formation was uplifted, but how it was laid down. According to either of the two hypotheses under discussion it was laid down by water, either as the bed of a stream or as a bed for the Ark as the waters of the Flood receded. Since the stream-laid interpretation is under consideration here the question is, is there evidence to indicate that a stream was responsible for depositing the clay in this formation? It does not seem to me that the geologists who proposed that this formation was laid down by a stream or those who have accepted that interpretation have spelled out the logical consequences of that interpretation.

Any basin that is 500 feet long, 150 feet wide, 20 feet deep, and is oval or tear-drop in shape is no ordinary bed of a stream. In fact, it is not the bed of a stream at all. Rather, it would have to be the collecting basin for such a stream, i.e., it would be the bed of a pond or small lake into which that stream drained. In that case the inlet to it must have been the sharper upper end or “bow”, and the rounded lower end or “stern” must have been the most dependant part of the collecting basin that prevented outflow from it.

There are some problems with this interpretation. The greatest problem with it probably is that no attempt has been made to identify the bed of the stream that supposedly fed this basin and it does not show up in the aerial photographs. From the standpoint of the aerial photographs, this formation is a very solitary phenomenon. The geologist who visited this formation described it as having broken away from clay beds which lay in an arroyo or gulch. Whether those clay beds provide evidence for the bed of the stream which
fed this formation remains to be seen since such evidence has not been described in detail.

One member of the 1960 expedition has told me that he saw no evidence for such a drainage system. Perhaps it has been covered by lava or is no longer recognizable due to erosion. On the other hand, maybe this formation was not formed by a stream and such characteristics of drainage as are present in that arroyo or gulch were formed subsequent to the time this depression was made. Only clarification through field study can settle this matter.

A corollary to this problem is the question of why the bed of this pond or lake was lifted alone without any contiguous portion of the connecting stream bed being lifted with it. There is also the question of how this depression could have been formed by a stream flowing down a slope of 11.5°, the current angle of incline according to measurement. Perhaps the pitch of this portion of the slope was less steep before it was lifted. It is also curious that this stream just happened to form a basin the length of the Ark and with the outline of the hull of a ship. Considering these problems with this interpretation it is not surprising that Dr. Burdick referred to it as a “very strange phenomenon” and a “remarkable freak of nature” at the same time that he proposed it was laid down by a stream.

IV. Measurements

Along with the ship-like appearance of this formation, striking features are the measurements. The first estimate of the professor of photogrammetry who studied the photographs in 1960 was that it was about 150 meters in length. He subsequently refined his measurements from the photographs to state that the object was 500 feet in length with a width of 160 feet and reached a height of 20 feet in some places. His plans that appear in R. Noorbergen’s book, The Ark File, are given in meters, 150 x 48 x 7 respectively. In his discussion of the activities of the expedition Noorbergen does not cite the specific measurements they took in the field but he does quote the same expert in photogrammetry as stating in their press release, “our measurements in the field verify our laboratory findings.” (See also page 128 of the reference.)

Genesis 6:15 gives the measurements of Noah’s Ark as 300 x 50 x 30 in terms of cubits. The possibility that these measurements were made using a longer antediluvian cubit cannot be entirely ruled out, but in view of the context of the post-diluvian cubits employed elsewhere in the Pentateuch it seems more likely that a post-diluvian cubit was intended. If these Biblical measurements represent translations into any of the known post-diluvian cubits, then the 300-cubit length of Noah’s Ark and the 150-meter length of this formation correspond in an impressively close degree.

Assuming a Mosaic authorship for these measurements probably would indicate that they were given in terms of the Egyptian cubit of 20.6 inches rather than the shorter Mesopotamian cubit. An Ark of 300 Egyptian cubits would have exceeded the more precise measurement of 500 feet for this formation from the aerial photographs by 16 feet. and if the bow and stern of the Ark were inclined rather than perpendicular they could have projected beyond this 500-foot form. Since minor variables are involved in both figures they should not be pressed too far, but even allowing for such variables it is obvious that the correspondence between the two is very close.

Other details should also be compared between the two. The walls of this formation reach only half as high at their highest point as the sides of Noah’s Ark according to the Biblical 30 cubits, but one need not expect that the mud, into which the Ark settled, reached as high as the gunwales or deck. H. M. Morris suggests on the basis of Genesis 7:20 that the draft of the Ark may have been 15 cubits. If there is some merit to that suggestion, then this figure would fit reasonably well with what has been found here, although one need not expect the Ark to have sunk so deep in mud as it did in water.

Weathering through the years certainly has reduced the height of the walls of this formation. Aside from the rather obvious differentiation between the bow and stern in these walls, there is also the gap in one side of the formation just forward of “midships”. This could be compared to the entrance in the side of the Ark referred to in Genesis 6:16 if a gangplank or something similar was let down such that an imprint was left.

The breadth of the two objects under comparison here is another matter. The 50-meter breadth for the widest distance between the clay walls of this formation in Turkey is wider than one would expect from the 50 cubits in the Bible. As far as I am aware, there are no textual variants in the different Bible manuscripts to explain such a difference. One might suggest, therefore, that if this formation is related to the Ark, then a variant for this figure was introduced into the text early in the course of transmission, similar to those variants for some of the other numbers in the Old Testament, which some believe can be found.

However, this textual problem might be resolved, from the standpoint of nautical engineering the wider the Ark the better, it would seem. In essence, this ship-like formation in the Tendurek Mountains is the same length as Noah’s Ark, but it is twice as wide at its widest point as the figure given in the Bible for the breadth of the Ark. The stability of a vessel in stormy seas is basically a function of the relationship of breadth to height more than length, in conjunction with the weight and distribution of the cargo.

In other words, the most important single measurement for a ship’s stability in stormy seas is breadth, and the wider the ship the more stable it should be. Thus a ship built along the lines of this formation would have been even more stable than one 50 cubits wide and 30 cubits high, which was quite stable already according to Morris’ calculations.

The 6:1 ratio for the length to breadth of Noah’s Ark in the Bible has been compared favorably with that of modern ships. It should be remembered, however, that modern ships are designed to be propelled through the water and, generally speaking, the faster the better within certain limits. The Ark, on the other hand was prepared for the purpose of floating on the waters of the Flood in order to insure the safety and survival of the passengers.

While the 3:1 ratio of the formation in the Tendurek Mountains might have produced more drag in a ship...
designed with such proportions that was meant to be propelled through the water at a reasonable rate of speed, it would have been superior for the simple purpose of flotation. Not only would such a design have been more stable, but it probably would also have accommodated a larger volume of animals and food for them.

V. Criticisms

Through the kind office of one of my colleagues, the preceding draft of this study and three photographs of the formation (one aerial, one inside surface, and one outside surface) were submitted to three geologists, two paleontologists, and one geophysicist. I have benefited by their criticisms and some of the information from their comments has already been incorporated in what has been written above.

But I would like to review briefly their other criticisms, and for this purpose I have chosen to designate them simply as ScA, (Scientist A), ScB (Scientist B), etc. ScA said my suggestion did not make good geological sense to him and he followed the stream-laid interpretation of the formation proposed by Dr. Burdick. He also appears to be of the opinion that the mud into which the Ark settled should now be actual rock and not clay.

ScB also gave a negative evaluation of my proposal, largely because he is strongly of the opinion that the Ark was rectangular in shape; but that is far from certain from the text. ScC did not offer an interpretation of the formation, but he did think that both Agri Dagh and Tendurek were unlikely landing spots for the Ark because of where they would fit in a flood model as volcanic mountains.

Both ScC and ScD think that carrying the search for the Ark to 14,000 feet of elevation (Agri Dagh) or even 6,000 feet (Tendurek) is looking for it too high. ScE said he did not feel there was adequate evidence to make a decision upon the nature of this formation without further first-hand examination of it. ScF concurred that "this could be the mold of a ship, namely Noah's Ark; that the wood could have been destroyed by fire or decayed until no evidence is now available; and that the natural or geological interpretations for this phenomenon at present appear strange and 'unnatural' ".

He still held out the other possibility, however, that this formation might have been created by stream action: "It may be that actual observations would indicate that stream action is an unreasonable explanation. However, based on what little data we have we cannot rule out stream action as a possibility."

In summary then, of the six evaluations received two were negative, one specifically so as far as the nature of the formation was concerned, three were neutral to the extent that they did not wish to make any judgement upon the nature of this formation without more detailed information about it, and one was sufficiently positive to concur with the idea that this might be a mold of the Ark, although he held out that it could also be something else.

Since five out of six of those who responded did not feel there was sufficient evidence currently available upon which to make a judgement of whether this formation relates to the Ark or not, it seems reasonable to suggest that a more careful and detailed examination of this site would be worthwhile to obtain whatever evidence is available to determine what that relationship may be.

VI. Conclusion

A review of the results accomplished in the field by those who have been searching for the Ark on Agri Dagh indicates that searchers have not yet produced any evidence for the presence of the remains of the Ark there. Since the identification of the mountain upon which the Ark landed still is in question, any evidence from the general area, not just that one mountain, should be carefully scrutinized. Under the influence of accounts related by a few elderly Armenians and Russians, all of whom are now dead, Ark-searchers have been looking only for the Ark, or a sizeable portion thereof readily recognizable as the Ark.

Given the volcanic nature of the area involved and the ravages of the elements in the course of time, however, that may be placing too high a demand upon the evidence for the Ark that one might expect from the field. Not only should other locations be considered, therefore, but other types of evidence should also be taken into account.

If the scope of the search for the Ark is widened thus, then the ship-shaped formation in the Tendurek Mountains ranks as the only undisputed evidence that has ever been found in the Middle East thus far that could possibly be related to the Ark. My approach to the interpretation of this formation is admittedly simplistic. Any object that obviously resembles the outline of a ship, that corresponds very closely to the length of the Ark given in the Bible, and that certainly is located in the Biblical mountains of Ararat should be given serious study for the possibility that it may be related to the Ark.

Is the Tendurek formation then, as has been suggested above, a mold or cast of the Ark? The answer to this question must eventually be "yes" or "no", but those answers may be qualified by the kinds of evidence that can be obtained to substantiate them. Logic extends the possibilities here to four:

1) This formation may not be related to the Ark, but there may not be adequate evidence from the field to substantiate that interpretation.

2) This formation may not be related to the Ark, and there may be adequate evidence from the field to substantiate that interpretation.

3) This formation may be related to the Ark, but there may not be adequate evidence from the field to substantiate that interpretation.

4) This formation may be related to the Ark, and there may be adequate evidence from the field to substantiate that interpretation.

The range of these possibilities supports the suggestion of ScF who wrote: "This site needs to be studied in much greater detail by archaeologists and geologists who would be able to take sufficient time to get some definitive data." As far as obtaining that data is concerned, one might contrast the situation here with that involved in exploring Agri Dagh.

The Tendureck Mountain site is much more accessible and therefore less expensive to study; it does not carry
the risk of life and limb that is involved with work on Agri Dagh; and given the current political climate and the irritations caused by the overeager actions of groups interested in working on Agri Dagh, a permit to work on this formation could be obtained probably with less difficulty than one to work on Agri Dagh.

To conclude, one might put these two sites in perspective by reflecting upon what would have happened had this formation been found on Agri Dagh. I may be wrong, but I suspect that news of it probably would have been heralded far and wide as the discovery of the site where the Ark had rested. What a difference a mountain makes.

(EDITOR'S NOTE: Schmich, J. E. 1974. The Flood and the Ark, Creation Research Society Quarterly 11(2): 120-122, has suggested another fate which might have overtaken the Ark. He suggested that it might have been cannibalized for building material soon after the Flood.)

References


On Understanding Ancient Writings

Many speakers, even preachers, have stated that, in order to understand what ancient writings really mean, the reader must get behind the thought-patterns of the writer, or try to fit into his world-view, or something of the sort. In so far as this means that the idiom must be understood, and that it helps to have some knowledge of the unexpressed presuppositions which may be present in any writing from any age, few would dispute the mentioned position.

In practice, though, the statement seems often to be in preparation for, or an excuse for, taking the writing, especially if it is Scripture, in almost any sense except the plain meaning of the words stated. If the statement is intended in this last sense, it should be challenged.

The most important reason for reading Scripture is for the sake of instruction. Now there are other cases in which one derives instruction from old works, but nobody has ever proposed that one must get behind the words of classical writers, say, or try to get inside the author's processes of thought.

For instance, Euclid's Elements seem to have been written about 300 B. C. Thus it is much older than the New Testament, and not too much younger than the last books of the Old Testament. Now the Elements was used as a book of instruction, a text-book of geometry, until less than a century ago. And nobody ever denied that it is possible to learn about geometry from the Elements, understanding what is written there in a plain and ordinary sense. The Elements has been superseded as a textbook, not because it is impossible to learn from it, or because it was necessary to perform the feat of getting inside Euclid's mind, but merely on the grounds that other treatments were easier for the students.

Again, surely logic is a factual matter, if anything is. Few would deny that it would be possible to learn logic from the original treatment, Aristotle's Analytics, especially the Prior Analytics, which was written presumably about 330 B. C. The fact that almost no one tries to do so is again a matter of convenience. It is true that the matter is complicated by the fact that there is a tendency to follow the way in which logic was expressed in the Middle Ages, which differed somewhat from Aristotle's treatment in the way in which it was expressed. But nevertheless one could obtain true and valid instruction in the subject from Aristotle's works.

It would not be hard to give other examples of ancient secular writings from which a person could still get valid and true instruction. So it simply is not true that ancient writings, just because they are ancient, must be approached in some special way. Like any other writings to which one turns for instruction, they must be approached above all with a will to learn. And since this is true even of human and secular writings, how much more is it true of Scripture, whose Author does not change?

—Editor Armstrong