

Elazığ'a



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The Sunken Byzantine Settlement, 2005-2006 Underwater Survey at
Hazer Lake, Eastern Anatolia

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THE SUNKEN BYZANTINE SETTLEMENT, 2005-2006 UNDERWATER SURVEY AT HAZAR LAKE, EASTERN ANATOLIA

Çiğdem ÖZKAN AYGÜN*

Our first expedition to Lake Hazar was in June 2005, and our studies have continued as underwater survey in October 2005 and in September 2006 enlarging our group with the members from Geological and Geophysical Engineering Departments of Istanbul Technical University¹.

Being the first archaeological underwater survey on the site, our survey came out with plenty of information about the sunken settlement and there are still lots of questions to be answered. Also due to the obstacles not depending on our research group, the survey has to be enlenghtened to the forth coming years².

Lake Hazar is a volcanic lake at the foot of Mount Hazarbaba that is 30 km. from Elazığ in Eastern Anatolia. The lake is 7 kilometers wide and 22 kilometers long and its deepest point is 230 meters (measured by sub-bottom profiler during 2006 survey). The closest town is Sivrice which is 3 km. away.

The Eastern Anatolian fault line passes under the Hazar Lake and is still active. Its activity and climatic reasons have caused changes in the water level of the lake during the years. The lake is fed through two rivers from its northeast and southwest.

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- 1 Hazar Lake project is accepted as BAP (Scientific Research Project) of İstanbul Technical University under the direction of the author with the title of "Elazığ Hazar Lake Archaeological, Geological and Geophysical Research" and has been supported financially and technically. We want to present our gratitude to the rectorate of the İstanbul Technical University for their support.
- 2 2006 survey could not cover the northern and eastern sides of the Island. We had to dive together with the under water police as a decision of Museum manager of Elazığ. It was declared by the police that they have seen bombs underwater on the second day of the research and the survey had been stopped by the Museum manager, Haydar Kalsen. We could continue only with the permission from the Governor of Province, restricting our research area. Also the underwater police has carried out some ceramic pots out of the water according to the directions of the museum manager which were given through the telephone without knowledge of the author so we do not have the chance to locate them on the site plan and those pots have been damaged due to the miss carriage and lacking conditions of conservation.

The rising water level was the main reason that the settlement on and around the Kilise(church) island was deserted. The evacuation of the area spreads into a time span from 1795 to 1830.

The focus of our survey was around the island of Kilise Adası (or "Church Island") that is located on the southwestern section of the lake (Fig. 1). Most probably the island was originally a peninsula and was connected to the mainland on the southern side, the inhabitants built the defensive features on the southern side of the site and the lake protected the remainder of the site.

Through this survey a sunken walled settlement was discovered and explored. The area was mentioned in the reports of the travelers as a church/monastery³ which was named Surp Nshan, Cowk, or Dzovk⁴ which became the religious center of its region⁵ in eleventh and twelfth century. The area have continued to be inhabited by Armenian population till its evacuation because of the earthquake in 1784 and gradual raise of water. The existance of a village called Gölcük⁶ with 50-60 houses living on weaving and leathersmith in the XIXth century was mentioned in the municipal archives. It is also mentioned that the inhabitants have moved to Surek village after the raise of water⁷.

The water level of the lake has turned to be falling again due to the construction of a private hydro-electricity central. We were informed by Hasan Karabulut, the Mayor of the Sivrice that the 1255 m. of water level (altitude from the sea level) in 1950, has fallen down to 1236m. in 2005. This change in the level of water is also the reason for that the upper levels of the gate towers of the ancientl settlement are possible to be seen out of water.

During our surveys, the sunken archaeological area of 2,5 km² is explored, all of the architectural findings are measured and drawn underwater and the plan of the sunken walled settlement is prepared by the help of total-station. The referance points are signed on the surface of the water as the projection af the sunken artifacts in order to utilise total-station. (Fig. 2).

3 Saint-Martin 1819, *Mémoire Historique et Géographique sur l'Arménie*, Vol. 1, pp. 49-50; Andreasyan 1964, *Harput Tarihi, Polanyalı Simeon'un Seyahatnamesi (1608-1619)*, p. 97; Evliya Çelebi 1314, *Evliya Çelebi Seyahatnamesi*, Vol. 3., 218; Sungurluoğlu 1954: *Harput Yollarında*, Vol. 1.

4 'Dzovk' means 'the sea' in Armenian.

5 İnciciyan 1804, *Coğrafya*, p. 240.

6 'Gölcük' means 'little lake' in Turkish.

7 The place that the inhabitants of Gölcük has moved is not the same place as modern Surek village it is actually 'Eski Surek-Old Surek' which is evacuated now.

The investigation of the site was begun from the two towers and the result of the first dives provided evidence of fortification walls as well as the main gate of the city. The two towers were the gate-houses which flanked the city gate and were built 20 m. apart on an east-west axis (Fig. 3). The eastern gate house has a L-shaped floor-plan. A raised road extends from the gate houses towards the mainland⁸.

According to the manual measurements which were also checked through the total-station, the total length of the city wall is 520 m. and the raised road is 206 m. This raised road connects the city walls to the land from south-east direction.

The height of the gate-houses and towers are 5 m. from mud to water level and 4 m. out of water (the measurement is taken in September 2006 from the deepest point) which means 9 m. of height. The area is described as alluvial basin⁹. Some parts of the area is covered with ~3 m. of mud. We can say that the towers had more than 10 m. of height considering the part under the mud.

The brick towers, or gate-houses, and the circuit wall are constructed of bricks that are 37 centimeters long by 35 centimeters wide by 4 centimeters thick and are joined by mortar that is 4 centimeters thick. The dimensions of the brick and the way of construction reminds Vth-VIth century Constantinopolitan work. The gate-houses seem to have been roofed with low vaults as there is evidence of a pennaculum. They are three storied buildings, with the upper two levels containing arched windows (Fig. 4). The lower level walls had embrasured loopholes instead of arched windows. The floor between the two upper stories is quite distinct on the interior where the joist holes for the floor are visible. The floor between the upper two stores must have been separated through a wooden flat. The lower levels are accessed by a circular stairway (Fig. 5). Three table amphora of different dimensions were found at the very bottom of the stairway (Fig. 6).

The protective circuit wall, which is currently underwater, was 5 m. in height till the mud and constructed of brick and mortar (Fig. 7) with ashlar masonry in the lower course of the wall (Fig. 8). The thickness of the circuit wall changes from 2,2 m. to 1,1 m.

The main wall is interrupted by five vaulted rectangular rooms (Fig. 8). Those vaulted buldings have a dimension of 3,7x3,8 m. from outside. They are 2 storied

8 Ç. Özkan-Aygün, "Hazar'ın Batık Şehri", *Atlas Dergisi*, Vol. 157, April 2006, pp.128.

9 This knowledge is given by Prof. Okan Tüysüz during our '2006 Archaeological, Geological and Geophysical Research Project' which we have conducted together in September 2006.

buildings with an embrasured loophole on the upper floor. Those buildings probably had been used as store houses aside from their protective puposes as well as helping as a buttress (Fig. 9).

The doors of those rooms are mostly covered with mud. It is possible to enter in through the window over the door (Fig. 10). The wall extends to the island, turns to the east and runs parallel to the southern shore of the island. There are three more rooms on the wall which runs parallel to the southern shore of the island. Then the wall diappears under the soil flowing from the island.

As a result of our research in September we have found out the second protective circuit wall which runs on the west of the first wall beginning from the western gate-tower and arriving to the island. It is possible to see that this wall is affected by the earthquakes more than the eastern wall and it is repaired in later periods. The later constructions are made of rough stone and brick instead of only brick.

There are other rooms and a very well preserved building collocated with this circuit wall. It was a long and narrow brick building that was constructed in the same method as the city walls that have a base of ashlar masonry with upper levels of brick and mortar. The building ran 26 m. in length and was 4 m. wide and was angled to the southwest by 70° (Fig. 11). The building used barrel vault construction that had eight windows on two sides (Fig. 12). The building is closed with an apsidal wall at the southwest.

The south shore of the island is has 7 more buttresses which have niches of 2,1 m wide niches between them.

It is worth noting that it is only the gate-house towers and the fortified wall that provide defensive features as the area's geography provides natural defenses, such as the Hazarbaba Mountain and the lake. Most probably the island was originally a peninsula and was connected to the mainland on the southern side, the inhabitants built the defensive features on the southern side of the site and the lake protected the remainder of the site¹⁰.

A road, with a width of 1.5 m., leading from the city gate to the main land was found during survey of the region. This road has a length of 206 m. and then it is lost under the plants close to the shore.

10 Ç. Özkan-Aygün, "Hazar Lake Sunken Settlement Elazığ, Turkey 2005 Survey Report", FeRA(Frankfurter elektronische Rundschau zur Altertumskunde) www.fera-journal.eu, August 2006, p. 32.

It was an interesting finding that the road had 6.4 m. interval and had conjunction points for a wooden bridge. This makes a proof for the knowledge about a river given by the villagers that they heard from their ancestors.

On the western side of the island, there are many crudely worked stones, which suggest a man-made construction but because of the nature of scatter, it is not possible to understand the plan. Ceramic sherds have been found on the island, and on the northern side and the pieces of medieval green-glazed graffito plates were discovered that are now housed at the Elazığ Museum (Fig. 13).

Additional archaeological sites in vicinity were reviewed with the aim of researching construction techniques, such as the monastery of Kulvenk, an 11th century church of Venk in Tadım, the fortress of Harput and the church of St Mary. A similarity between the brick-work of the 6th century Byzantine tower fortress of Harput was found with the towers on the island. Apart from that example, the all-brick construction is unique for the area¹¹.

As a result of our under surveys in 2005 and 2006 which had to last short terms under the obstacles which some of them are mentioned above footnotes, we have completed the total-station measurements and underwater drawings of all architectural findings in the area which is allowed for us to work. It has not been found a church which would prove the writings of the ancient travellers. It could be on the island which was the highest point of the peninsula before the area was sunken. But the constructions on the island is totally destroyed. We can make a comment that the soda water of the lake has been a great help to protect the findings with the help of the calcherious layer which has covered the surface of the findings.

Hazar Lake is like a boundary between the Byzantine and Arab forces after VIIth century and then Byzantine and Turkish forces after Xth century. We can explain the powerfull city walls. This sunken settlement is more like a garrison which is also protected by another castle which was located on Hazar Baba mountain at the point called Kesrik-Kale¹². This castle is perfectly located to watch the possible enemies which could threaten the sunken settlement of our day.

11 Ç. Özkan-Aygün, "2005-2006 Underwater Survey at Hazar Lake Eastern Turkey", 20th December 2006, Université Paris I-Sorbonne, Ecole Doctorale d'Histoire, Centres de recherche d' Histoire et civilisation byzantines et du Proche-orient médiéval, http://www.univparis1.fr/recherche/etudes_doctorales_et_financements/ed/ed113_histoire/cr/histoire_et_civilisation_byzantines_et_du_proche-orient_medieval/article6031.html?recalcul=oui

12 Ç. Özkan-Aygün, "Hazar Gölü'ndeki Batık Yerleşim", SBT 2006 (10. Sualtı Bilim ve Teknolojisi Toplantısı) Bildiriler Kitabı, 2006, p. 85.

The geologists and geophysicists were added to the for the 2006 survey. Future results will illuminate the seismic characteristics of the region and will determine how the water level rose and eventually covered the settlement. Our purpose for the future underwater archaeological survey will be completing survey in the area which was closed to our work for the so called existence of bomb under the water.

Finally we want to add that this project has a wholistic approach with the aim of bringing utilities to the life of the people and future of the region. We have developed projects and shared them with the local authorities in Elazığ and Sivrice through 'Valilik-Governorship of Province', 'Kaymakamlık- Governorship of District' and 'Belediye-Municipality' and also added those to our reports that we gave to the Ministry of Culture and Tourism of Turkey. Those projects can be summarized as follows:

1-The continuing education for the local population regarding the history and preservation of the archaeological site

2-The reintroduction of pottery production in the village of Uslu

3-Projects for building diving tourism around the sunken city walls through guided tours and tranparent ascencore for those who do not scuba dive.

We have been in contact with CEKUL (The Foundation for Preservation for the Environment and Culture) for the realisation of those projects.

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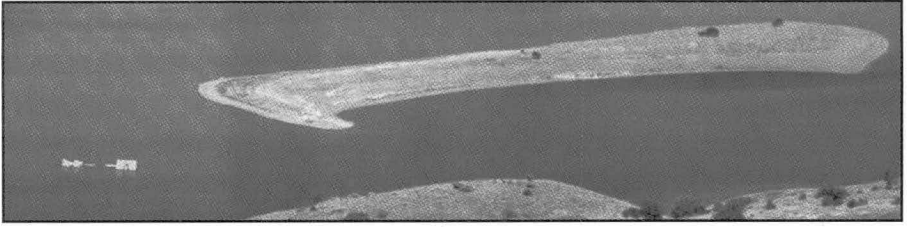


Fig. 1: Kilise Adası (or "Church Island") that is located on the southwestern section of the Hazar lake (Photo: by Prof. Dr. Okan Tüysüz).



Fig. 2: Plan of the sunken walled settlement which is prepared through the help of total-station



Fig. 3: The gate-houses which flanked the city gate and were built 20 m. apart on an east-west axis (Photo: by Dr. Çiğdem Özkan Ayygün)

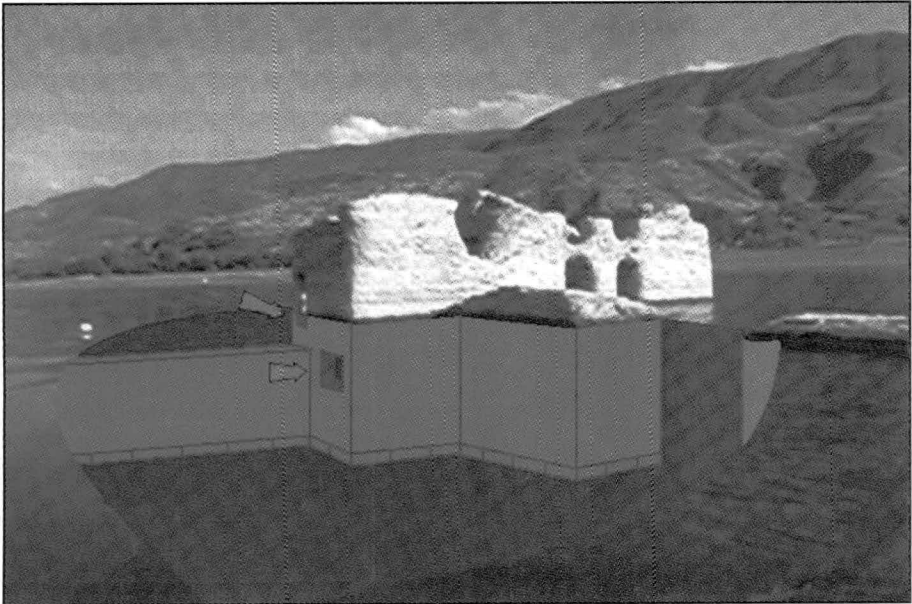


Fig. 4: The three-storied gate houses (Illustration: by Engin Aygün)

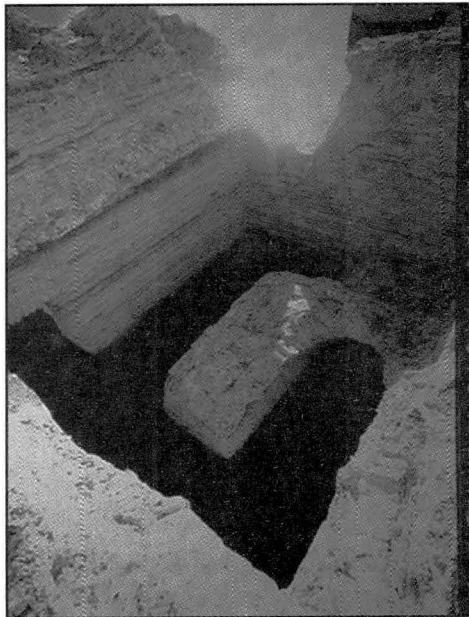


Fig. 5: The circular stairways reaching to the lower levels of the gate-house (Photo: by Engin Aygün)

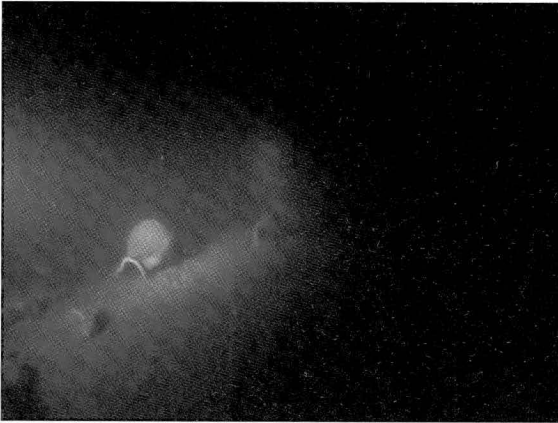


Fig. 6: The table amphora in the gate-houses
(Photo by Engin Aygün)



Fig. 7: The protective circuit wall made of brick and mortar
(Photo by Engin Aygün)

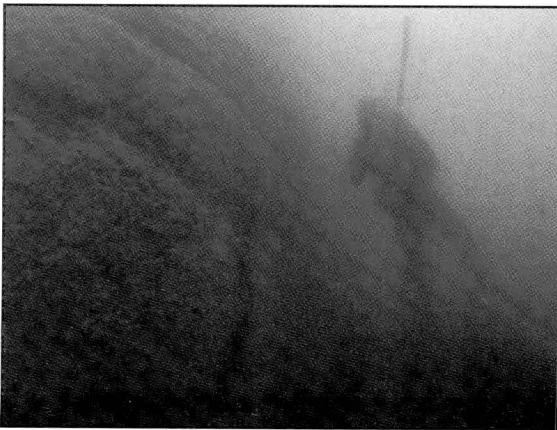


Fig. 8: The ashlar blocks at the foundation of the circuit wall
(Photo by Engin Aygün)

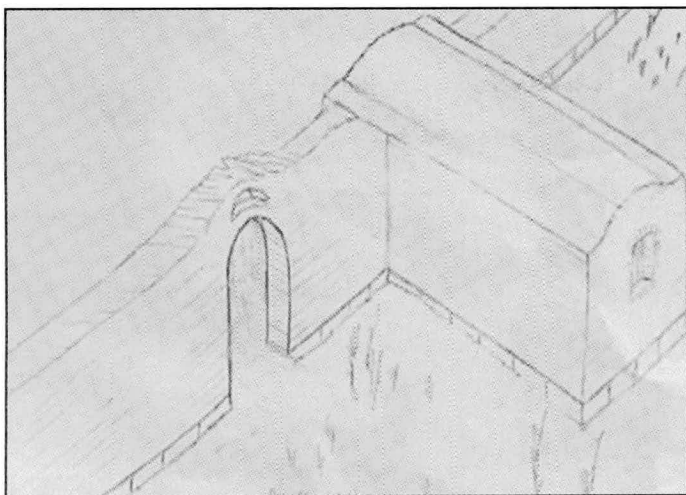


Fig. 9: The store house-buttresses on the circuit wall (Illustration by Engin Aygün)



Fig. 10: It is possible to enter in through the window over the door of the buttresses (Photo by Engin Aygün)

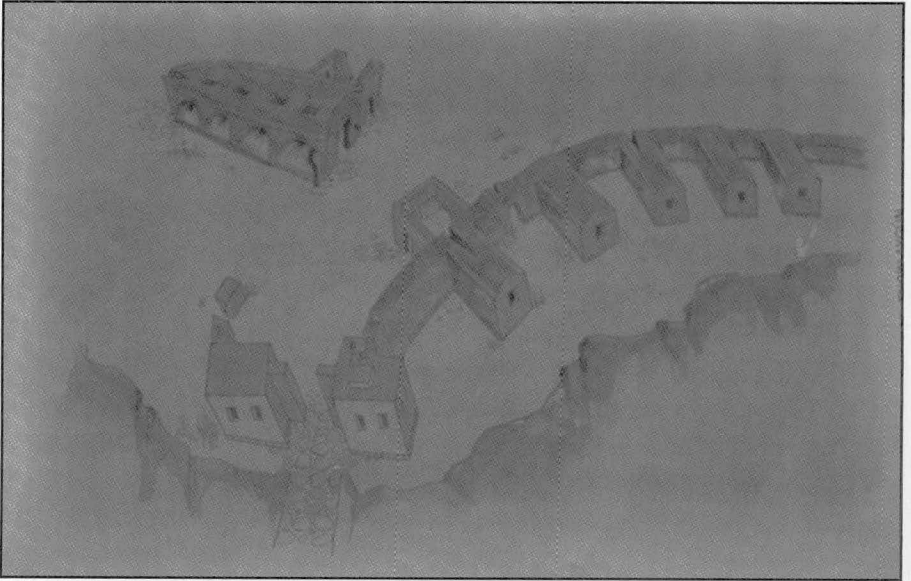


Fig. 11: The building with 26 m. of length and 4 m. of width angling to the southwest by 70°
(Illustration by Engin Ayygün)

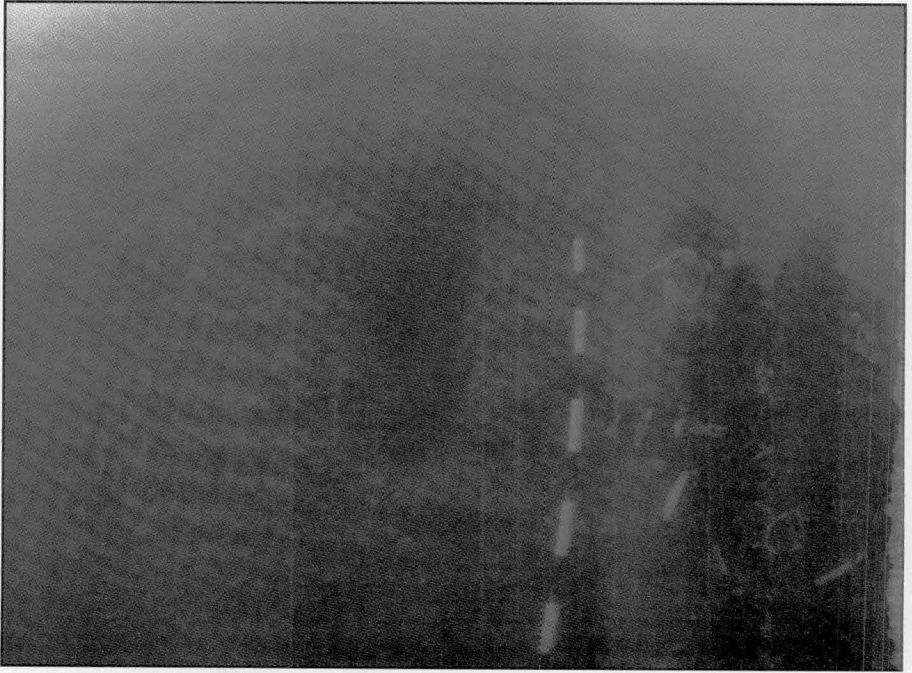


Fig. 12: Embrasured loophole windows