The Aceramic Site of Aşıklı and its Ecological Conditions Based on its Floral and Faunal Remains

Akeramik Aşıklı Höyük
Yerleşmesinin Bitki ve
Hayvan Kalıntılarına Göre
Ekolojik Koşulları

Ufuk ESİN*

Anadolu Sözcüleri: Aşıklı, Akeramik Neolitik, Orta Anadolu, Ekolojik, Hayvanlar


Antropoloji, arkeo-botanik ve arkeo-zoologik verilere göre Aşıklı Höyükün ekolojisi bu yılarda yerleşmelerin kısa bir tanıtımından sonra incelenmektedir.

Introduction

The aim of this paper is not to overemphasize the effectiveness of the palaeoecology upon the life and culture of ancient man from a deterministic point of view. It is only to try to demonstrate the relations of both sides, between man and his surroundings. In other words, it is to try here at least, to understand the

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relations between the prehistoric inhabitants of the "Aceramic Neolithic" site of Aşıklı and their abiotic and biotic environment in Western Cappadocia ten thousand years ago. This is because, as is known, short before and during this episode, the most dramatic changes in the climate took place every where in the Old World due to the shifting from the Pleistocene into the Holocene. Depending on these climatic changes and on the beginning of neothermal conditions the founding of permanent village-type settlements occurred during the Aceramic Neolithic Period in the Near East and in Anatolia. It became the reason of a "new way of life for the human culture". This has been named by V. Gordon Childe as "Neolithic Revolution", because of the beginning of domestication of plants and animals initiated by the village farming communities (Childe 1958, 59-86).

In this connection it could also be asked not only to what extend the human population of the pre-pottery neolithic site of Aşıklı could make use what was offered to them by the environment for their "new way of life", but also why did they choose Aşıklı as their permanent settlement. In order to discuss these questions, the geographical and cultural setting of Aşıklı mound in Kızılkaya village (province of Aksaray) and in its neighborhood will be described first. Then after according to 14C assessments and archaeo-botanical and archaeo-zoological analyses the possible ecological conditions of ten thousand years ago in the same area will be presented.

Aşıklı Höyük and Its Ecological Conditions

1. Geographical and Cultural Factors

Aşıklı Höyük is situated at the village of Kızılkaya, 25 km south-east of Aksaray in Western Cappadocia which is a part of the high plateau of Central Anatolia. It lies on a bank of Melendiz river which is a branch of the Ulurmak river. The Mamasun-dam’s réservoir on the Ulurmak in the vicinity of Aşıklı will soon raise the water level, so that the Aşıklı mound will become partially submerged in coming years (Esin et al. 1991, 159, pl. 1).

Therefore archaeological salvage excavations are carried out at Aşıklı by the Prehistory Section of the Faculty of Letters, of the Istanbul University since 1989 (1). Aşıklı mound stands on an elevation of 1119. 45 m above the sea-level. It measures 230 m in east-west and 150/240 m in north-south direction. It covers an area approximately 35000/40000 square meters. Nearly one third of the mound seems to have been eroded in the course of time due to many changes in the river-beds of Melendiz, either during the Early Holocene or later on because of several climatic changes and then after due to much ploughing at the site (Op. cit. 161, pl. 3; Esin 1996, 31, fig. 1).

In the course of seven excavation-campaigns ca. 4000 square meters have been unearthed at the Aceramic Neolithic site of Aşıklı (figs. 1-3). On the other hand a small part of an settlement earlier than those on the mound has been discovered directly on the shore of Melendiz river (Esin 1995, 71, fig. 3). It lies outside of the mound to its south and continues into the riverbed of Melendiz, underneath an alluvial deposit of 1.5 height probably accumulated by a sudden flood of the river. The settlement was abandoned because of that flood. In this earlier settlement a few houses made of mud-brick and rectangular in plan formed small living-quarters. These were separated from each other by narrow corridors or small court-yards measuring ca. 1X3.5 square meters (ibid). The burial customs were intramural (Esin 1996, 35, fig. 9). It seems that the mud-brick architecture and the settlement-pattern in this earlier habitation became the most traditional one throughout the later occupations on the mound (ibid).
On the mound, as so far excavated three cultural layers are revealed (figs. 1-3). From top to bottom from layer 1 only a few architectural remains are left. On the other hand the cultural layer 3 has been reached recently at a depth of 7.20 m from the modern surface and not excavated yet. Of the three cultural layers, layer 2 has been exposed more extensively than the others. 10 building phases, (some of them including also suphases) belonging to the layer 2 have been brought to light only in the northern step-trenches (trenches 4 F-H, fig 3). It seems that during the latest 3 subphases of Layer 2, the settlements were surrounded to the east by a monumental enclosure wall (fig. 3). It was built of large tufa and limestone blocks together with mud-brick (Esin 1995, 71, fig. 4; 1996, 34, fig. 6). This enclosure wall of Aşkı is the oldest known example of the city walls in Anatolia (Esin 1996, 42, footnote 25).

Houses made of mud-brick walls and rectangular, trapezoidal (sometime one of the walls is rounded) in plan, seem to extend from the enclosure wall in three directions, to the north, west and south. A large, free space which seems to be a working and dumping area is located within the living-quarters to the north-east of the mound (trenches 6-7 J-K; fig. 3).

On the other hand a main road of 2-4 m width and paved with pebble stones runs to the middle of the settlements in each phases (trenches 3-7 N-O; figs. 2-3). To the south-west of the main road are situated two large buildings connected with each other by large court-yards and additional rooms (trenches 3-4 N-R; fig. 3). Also stone walls like temenos walls partly surrounds this section on the north-east.

The north wall of one of these buildings consisted of a "chest-wall system" which is the oldest known example of this kind of architecture and the ancestor of the city-wall system of the Hittites (Esin 1994). The exterior wall of this building is made of mud-bricks to the south-west of the main road and its interior wall is constructed of rows of tufa and limestones imbedded in clay mortar (ibid). The second building south of the former one is considerably destroyed. In each phase, floors, interior walls and mud-brick benches are painted in red. In the 4th building-phase the floor is restored and painted partly in yellow. It seems that these 2 large buildings were used for religious purposes (cf. Hauptmann 1993). Therefore this indicates probably a social stratification among the settlers of Aşkı.

The living-quarters of the inhabitants of Aşkı consisted of a few mud-brick houses which had of 1, 2 or 3 rooms. The hearths are usually placed in one corner of the one-room houses (Esin et al. 1991, 166, pl. 8; fig. 2; Esin 1996, 36, 38, figs. 10, 13). The living-quarters were seperated from each other by very narrow passages (50-40 cm wide) or small courtyards (fig. 3). The entrances into the houses seemed to be from the roof. Because the door-ways were only made between rooms of the houses, but not into the passages or court-yards. This settlement-pattern indicates a planning of the space for living-quarters as well as for the religious sector.

The traditional raw material for the architecture of Aşkı was mud-brick. It seems that the use of stone in the architecture occurred during the last 5 building-phases.

The burial customs were intramural throughout the all phases of cultural layer 2 (Esin et al. 1991, 167, pl. 9/1). Bodies were put in earthen pits which were dug into the clay plastered floors of the rooms. They were buried mostly in hooker position and a few lay on one side of the body with legs were bent backwards. On one skull of a young woman a brain operation (trepanation) was observed (Esin et al. 1991, 167, pl. 9/1). Burial gifts were mainly necklaces or bracelets consisting of pierced beads made of semi-precious, simple stones or of hot-worked native copper and deer-teeth (Esin 1995, 73, 74; figs. 6, 8, 10).
Because of a consistence series of $^{14}$C assessments in the cultural layer 2, Aşıklı can be dated in calibrated system to the 8th Mill. B.C. or ten thousand B.P. (calendar years; fig. 4).

The industries of the inhabitants of Aşıklı consists mainly of obsidian, bone/horn tools (Esin et al. 1991, pls. 12-16). Ground and polished stone artefacts have been also used (ibid. 169, pl. 11). The raw material for the obsidian, bone and ground/polished stone utensils and weapons were brought to the site from the vicinity of Aşıklı. The occupants of Aşıklı even knew how to prepare and use half-baked and baked clay objects or figurines. This may indicate how they invented hot-working of copper (ibid. 168, pl. 10; Esin 1995).

Although the domestication of game animals had not started yet, hunting existed throughout the cultural layer 2 (Buitenhuiss 1996). A few cultivated cereals and legumes together with collected plants were attested at the aceramic site of Aşıklı (van Zeist and de Roller 1995). Thus, the subsistence economy was based mainly on intensified hunting and collecting of edible fruits and greens together with cultivated plants.

2. Ecological Factors

As far as the ecology of Aşıklı concerns, today a continental climate prevails in the Aksaray region and the economy is mainly based on crops, gardening, wine and animal husbandary of sheep and cattle. In addition fishing is possible in the river. The average rainfall in winter is about 330 mm and it makes possible the lower end of the range for dry farming. The Central Anatolian steppe terrain is dominant in the surrounding area. Groves of mixed hackberry (ceiltis) and oak occur at intervals in the alluvial, narrow valley of Melendiz that leads to the slopes of the Hasanadağ mountains. According to satellite maps, it is likely that some small shifts have occurred in the main bed of the Melendiz river since the beginning of the Holocene. However no major changes seem to be happened.

Information on the climatic conditions and the ecology of Aşıklı and its environs ten thousand years ago is based on analyses of pollen, plant remains, phytoliths and animal bone remains from the archaeological excavations (Respectively, Woldring 1998; van Zeist and de Roller 1995; Buitenhuiss 1996).

In addition pollen samples obtained from Akgöl which lies about 100 km west of Aşıklı in the district of Ereğli in the province of Konya, have also aided in a reconstruction of the ecological conditions (Bottema and Woldring 1984). A palynological study by H. Woldring indicates that the pollen record from Aşıklı and that derived from the latest phase of the Last Glacial Age of Akgöl are comparable (Woldring 1998).

At the time Aşıklı was being settled, important changes occurred, particularly in the environs of the volcanic mountains of Hasandağ, Karacadağ and Karadağ almost between 9600-8420 years ago (uncal.; Bottema and Woldring 1984). During this period oak trees which were attested before on those mountains disseminated. Junipers multiplied, hazelnuts, hornbeam, alder and hop hornbeam appeared on the scene. Grasses of various species began to multiply and diffused over the plains. This affected also rainfall and the climate had become warmer.

The plant remains that were recovered in the settlements of cultural layer 2, at Aşıklı are witness that the rainfall and temperatures between almost 9966-9400 years ago (cal. 8016-7479 B.C.) were favorable for the cultivation of legumes and grains like wheat and barley (cf. van Zeist and Roller 1995). Wild pistachia, elm, hackberry trees and a rather wide variety of grassy plant species become available some of which could be used for food and others for medical purposes.
Analyses of the bones of the game and wild animals that were recovered from the excavations of Aşklı further demonstrate that a highly varied animal world existed in the vicinity. None of the animals had yet been domesticated (Buitenhuys 1996). Making their home in the local area of Aşklı and caught as game during the period when it was being settled, were aurochs, wild sheep, wild goat, fallow and red deer, wild horse, wolf, fox, rodentia (mouse-type), hare, beaver, duck, bustard, crow, vultule, falcon, red-falcon, owl, tortoise, various fresh-water fish and some species of snail (Buitenhuys 1996). In the light of the above mentioned plant and animal remains from the settlements here obtained during the course of excavations at Aşklı, climatic and economic conditions were obviously favorable to support the life of human societies.

NOTES

(1) These excavations are supported by funding from the General Directorate of the Ancient Monuments and Museums of the Ministry of Culture, by the Turkish Academy of Sciences (TÜBA) and by the Research Fund of the Istanbul University (Project Nos: 595 and 994).

Also a side project undertaken by the Biologichis, Archeological Institute of the State University at Groningen has been running since 1990 with the aim of archeo-botanical and archeo-molluscan analyses of the pollen, plant and animal bone remains and for 14C dates of Aşklı. The collaborators in this project are Professors Dr. S. Bottema, Dr. W. van Zeist, Dr. H. Woldring, Dr. H. Buitenhuys, Dr. J. de Rroller and Dr. van der Plicht.

REFERENCES


Conclusions

Parameters that can assist our understanding of why the human communities of ten thousand years ago abandoned a seminomadic way of life and could for the first time ever make a transformation to a permanent settled village-life at Aşklı are clear. Because they had a water resource like Melendid river and the meadows in its valley. They had tracts of land suitable for farming, however limited, small woods of mixed trees in the valley and at higher altitudes steppe cover on the treeless volcanic earth, existed. A variety of animal species lived in this environment, some in the woods and some on the steppe, meadows, in the water or on the banks of the Melendid river. Finally sources of raw materials adequate to supply construction needs, preparing artefacts and weapons were also available for the inhabitants of Aşklı.

In 1995 a new project was undertaken by the Prehistory Section of the Istanbul University together with the Anthropology Department of Hacettepe University and the Biology Department of Barcelona University in Spain for anthropological studies. DNA and 13C analyses. Also research for phytoliths, obsidian micro-wear, trace and element analyses and geomorphological studies for Aşklı are being made in collaborations with many other specialists and laboratories especially with those scholars coming from CNRS in France such as Mme. Cl. Caquin, P. Anderson, Catherine Kusucuoğlu and others.

Thus I wish to extend my sincere thanks to all these collaborators and institutions for their valuable support and assistance.
Figure 3: Schematic Plan of Ağıklı 1977. Cultural Layer 2.
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(*) For calibration *CALIB rev.3.0.5* has been used with calibration dataset 1 and calculation method A: Intercal with curve (M.Stuiver P. Reimer: Quaternary laboratory/University of Washington)

Figure 4: Some of the Calibrated 14 C Assessments of the Cultural Layer 2 of Aşıklı.
TÜBA-AR
Türkiye Bilimler Akademisi Arkeoloji Dergisi

YAYIN KURULU
Ufuk ESİN
Yayın Kurulu Başkanı

Mehmet ÖZDOĞAN
Sema BAYKAN

Bruce HOWE
Zafer KARACA

ONURSAL YAYIN KURULU
Ekrem AKURGAL
Sedat ALP
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