

## ERBABA EXCAVATIONS, 1974

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The excavation of the Neolithic site of Erbaba near Lake Beyşehir in South-Central Turkey was resumed during the summer of 1974 under the auspices of the Department of Anthropology of the University of Pennsylvania and with the financial support of the National Science Foundation. Work in the field began on June 29 and ended on August 19. The crew included, in addition to J. and L. Bordaz, nine graduate and undergraduate students from the University of Pennsylvania and Columbia University and thirteen workers from the nearby village of Gölkaşı where the expedition was also housed. Previously, the Canada Council had funded the first seasons in 1969 and 1971 during which the importance of the site had become evident (Bordaz 1970, 1971, 1973).

Excavations at Erbaba have revealed, to date, a well-preserved village of stone houses extending over approximately 5,000 square meters (1-1/4 acres). The site belongs to the middle of the sixth millennium and does not show any post-Neolithic occupation. A rich botanical and zoological sample provides the opportunity for understanding the ways of life of an Anatolian Neolithic community where subsistence was based on most of the early-domesticated major Southwest Asian plants and animals. Erbaba also provides the only solid archaeological links between the Early Neolithic of Çatal Hüyük (Mellaart 1967) and the

Late Neolithic of Hacilar (Mellaart 1970), respectively 50 kilometers to the east and 150 kilometers to the west of the site.

The main goal of the 1974 season was to increase our knowledge of the plan of the last occupation which dates to the Late Neolithic period. The clearance of the surface architecture in a remarkably well-preserved portion (Area I) in the southeastern quadrant was extended to join the Areas G, A, D, and C excavated during the first two seasons (see plan). By this process, some 28 rectangular rooms comprising approximately 8 architectural units were exposed in an area of approximately 800 square meters, representing 16 per cent of the site. The wall plan of this uppermost level now includes a series of about 36 contiguous rectangular rooms and 11 architectural units oriented 10 to 20 degrees east of North. Several interior doorways have been found between rooms but not in what seem to be the exterior walls of architectural units, thus suggesting that the entrances were in the roofs. Most of these rooms were excavated only to 30 or 40 centimeters below the surface, a level which we know to be slightly above the last preserved living floor on the basis of our previous investigations and limited tests in 1974. These tests also revealed that the walls of roughly shaped limestone blocks set in mud mortar are preserved in this area to an average height of some 70 centimeters.

In addition to the recovery of the settlement pattern in the south-eastern half of the site, further work in 1974 was also carried out in Area C, originally tested in 1969, to obtain more information on the lower levels. The extension of one of the previously productive pits in this section exposed the well-preserved remains of a fallen and burned roof belonging to a structure which will be studied in its entirety during the next season when the removal of the overlying material can be completed. The roof construction appears remarkably similar to those of timber, matting, and mud used in the local houses today.

By the end of the 1974 season, the total volume of the site excavated since 1969 had increased to some 420 cubic meters, representing about 6 per cent of the estimated deposit. About 22 per cent of the surface of the site, approximately 1100 square meters, was exposed in all. Most of this area, however, except for 22 deep stratigraphic-control pits has been excavated only to an average depth of 40 centimeters; that is, to the first level where the pattern of house walls from the last settlement could be ascertained. To date, the contents of only three rooms in Area G out of the total have been excavated with three-dimensional recording of all remains. Considerable attention was devoted in 1974 to the development of more rapid yet accurate techniques of recovery and recording adapted to deal with the specific problems created by the stone architecture and accompanying extensive rubble of the site. These methods will greatly facilitate future efforts to obtain a representative sample of the various occupations.

A program of botanical analysis was initiated in 1974 under the direction of Dr. W. van Zeist of the Biological-Archaeological Institute of the University of Groningen. The material examined to date consists of the extremely well-preserved specimens collected in 1969 from

a deep stratum in Area C (the lower portion of Layer III) which dates to approximately 5800 B.C. Dr. van Zeist has identified the following domesticated species in this sample: emmer and einkorn wheat, bread wheat/hard wheat, barley, lentils, peas, and bitter vetch. This inventory of domesticated plants is very similar to that identified by Hans Helbaek (1964: 121) at Çatal Hüyük East, Area E, Layer VI, except for the absence of lentils at Çatal Hüyük.

Plant processing equipment is amply represented at Erbaba in the pecked stone assemblage which now includes some 420 complete artifacts and fragments. The most common tools of this kind are plano-convex grinding stones of andesite which are usually elliptic in shape and measure approximately  $25 \times 15 \times 10$  centimeters. Also common are hand stones of various shapes which were used in conjunction with the grinding stones. The rest of the pecked stone assemblage primarily includes non-agricultural equipment such as hammer stones for pecking and flaking and so-called small, spherical "sling stones".

Dr. Dexter Perkins and Mrs. Patricia Daly continued their on-going examination of the faunal remains from Erbaba with a study session in 1974 at the site. They were able by the end of the season to offer some preliminary conclusions concerning the sample which now consists of some 15,000 identifiable specimens. Nearly all of the faunal remains recovered consist of sheep and goat (84 per cent) and cattle (14 per cent). Pigs, deer, birds and fish are comparatively very rare. Although the analysis is still in progress, all methods of examination used thus far—that is, thin section study (Drew, Perkins and Daly 1971), classification by age, and morphological comparisons—indicate that cattle, sheep and goat were domesticated. Since the domestication of sheep and goat could not be established at Çatal Hüyük, probably due to an insufficient faunal sample, Erbaba constitutes accor-

ding to Perkins (1973: 281) the earliest known example of multiple animal domestication in the Near East.

At this stage of assessment, there are indications that the distribution of fauna changes throughout time at Erbaba. Sheep and goat seem to decrease gradually in numerical importance relatively to cattle and appear, simultaneously, to survive to an older age in the upper levels. This observation, which must be tested through excavation, suggests an increasing reliance on cattle for meat and a gradually greater exploitation of sheep and goat for their secondary products, that is wool and milk.

The inventory of worked animal bone consists, to date, of some 284 whole or fragmentary specimens. Many of the awls, the most numerous category of bone tool, were made from the metapodials of sheep and goat slaughtered at a young age. On present evidence these appear to be concentrated in the lower levels of the site, a distribution which would seem in apparent agreement with the tentative faunal observations noted above. Spatulas represent the next most common worked bone artifacts, with a few needles completing the repertoire. The specimens excavated in 1974 were examined during the field season by Ülge Göker, a doctoral candidate at the University of Istanbul concentrating on the early Anatolian worked bone industry.

Additional archaeological confirmation of an economy based on domestication has been provided by a preliminary study of the chipped stone artifacts. By the end of the last season, the total of chipped stone pieces had reached approximately 6200, 1900 of which were collected in 1974. Projectile points at Erbaba are among the rarest specialized tools (3 per cent) while at Suberde, in contrast, they constitute the most important part of the chipped stone industry (20 per cent) in a community where hunting was the exclusive mode of animal

exploitation (Perkins and Daly 1968, Bordaz 1969). At Erbaba, the most important categories are notched blades (20 per cent) and sickle blades (15 per cent). Truncated blades, flake scrapers, backed blades and borers which are the remaining the major categories represent, together, 35 per cent of the total number of specialized tools. Approximately three-fourths of the unspecialized and one-half of the specialized tools are made of obsidian; the rest are of flint. The projected detailed comparison of the assemblages from Erbaba and Suberde will no doubt help to clarify such questions as the relationships between different modes of subsistence, the various methods of manufacture and use of chipped stone tools, and the distances from settlements to obsidian and flint sources.

The pottery retrieved since 1969 has been useful in dating Erbaba relatively to the neighboring sites of Çatal Hüyük East, Hacilar and Suberde. At the end of the 1974 season, the collection numbered some 32,000 sherds which represent two main wares. The thin, gritty monochrome fabric, usually black-smudged but also brown-buff and red in color, is the only ware found in the lower levels at Erbaba (Layer III). This pottery is very similar to the thin, grit-tempered burnished ceramic of Çatal Hüyük 0-VIII (Bordaz 1973: 284) thus providing a good correlation between these two sites. The shapes of the ritty monochrome ware, to a large extent shared by both wares at Erbaba, were predominantly hole-mouth jars, bowls with straight sides, and jars with slightly everted necks. The majority of the bases are simple, flat, and direct, forming an angle of 40-60 degrees with the body of the vessel. The appendage most characteristic of this ceramic is the horizontal semi-circular lug, often perforated.

The thin, gritty monochrome ware also constitutes approximately one-third of the ceramic assemblage in the upper

levels (Layers I, II). The remaining pottery in these strata, representing the second main ware, is of a clay containing large quantities of gastropod shells. The surface of this ceramic is usually grey-buff in color with brown and some red examples also present. Gastropod ware appears to be distinguished in shape from the gritty monochrome pottery by the greater proportion of ring and pedestal bases and the predominance of crescentic ledge handles and vertical semi-cylindrical perforated lugs. Rarer attributes of this ceramic include carinated profiles, appliqué decorations (including *bucrania*) and minuscule, perforated semi-cylindrical lugs. A few isolated bands of red paint near the rim have also been observed on several sherds. The Erbaba gastropod ware is clearly related in form and technique to the Late Neolithic pottery from Hacilar VI to IX, differing primarily in

the gastropod inclusions which are characteristic of certain local clay deposits in the Lake Beyşehir region.

The correlations noted above linking the lower levels of Erbaba with the Early Neolithic of Çatal Hüyük (0-VIII) and the upper levels with Late Neolithic Hacilar (VI-IX) are confirmed by several other considerations including the radiocarbon dates from the three sites (Bordaz 1973). On the basis of this evidence, the occupation of Erbaba seems to extend from about 5800 to 5400 B. C. (Libby half-life, uncorrected). The geographical and chronological position of Erbaba, intermediate between Çatal Hüyük East and Hacilar, constitutes the first bridge between these two important sites. Continued work at Erbaba will no doubt increase very markedly and clarify significantly the evidence relating to the south-western Anatolian Neolithic.

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