THE SUBERDE EXCAVATIONS, SOUTHWESTERN TURKEY AN INTERIM REPORT

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The excavation of Suberde on the northwestern shore of Suğla lake is a part of the general field of study dealing with the ecological circumstances and the cultural conditions under which sedentism and the domestication of plants and animals developed in southwest Asia.

The Beyşehir - Suğla lake region is a clearly defined natural region of Anatolia, (see figure 1), where a long range ecological and archaeological study of representative sites from various periods should lead to a better conception of the origin and development of sedentism and domestication, first on a regional scale and second by comparison with other areas from the whole of Southwestern Asia.

The excavations were done with the authorization and the assistance, here gratefully acknowledged, of Mr. Mehmet Önder and Hikmet Gurçay, successive heads of the Directorate of Antiquities and Museums in Ankara.

Also deeply appreciated is the help provided by many of our Turkish colleagues, especially Mr. Raci Temizer, Director of the Ankara Museum, Mr. Kemal UĞUR, Director of the Konya Museum, Mrs Bülent Erdem, the representative of the Directorate at the site, and Professeur Kenan Erim, New York University, who gave us the first opportunity to work in Turkey in 1962 (Bordaz 1963).

The site of Suberde was first reported by professor Ralph Solecki (Columbia University), after a survey made in the Beyşehir-Suğla area in collaboration with Professor William Farrand, now of the Department of Geology at the University of Michigan.

With Dr. Solecki's encouragement, which is here gratefully acknowledged, a project was submitted to the National Science Foundation, which financed the research at the site in 1964 and 1965. In 1966 the Foundation generously made possible the study of the excavated material stored at the Konya Museum and the study by Dr. Dexter Perkins, Jr. Columbia University, of the faunal remains.

Topography:

The Beyşehir - Suğla lake area is an intermountain valley in the northeastern part of the Western Taurus. The valley measures approximately 150 kms in length and varies in width between 25 and 50 kms. It is oriented northwest to southeast between the two first mountain folds of the northeastern part of the Western Taurus immediately above the western part of the Konya Plain (see figure 1). A low ridge of hills approximately 1200 to 1300 meters high runs perpendicularly to the long axis of the valley separating the Beyşehir basin from the Suğla lake basin. The elevations of Beyşehir and of Suğla lake are respectively 1100 and 1040 meters. The mountain ranges which frame the valley rise to approximately 3000 meters in the west and 2500 in the east.

A stream had originally cut across the hill range and brought water from Beyşehir lake into Suğla lake. A canal now captures this stream and bypasses Suğla lake. It is joined by the Suğla lake outlet

which enters the Çarçamba gorge leading to the Konya Plain. Suğla lake is dry in years of normal precipitation and its area is occupied by wheat fields except in the marshy western edge of the basin.

Professor Farrand noticed, in the Beyşehir and Suğla basin, ancient beaches about three meters above the lake's maximum level prior to the construction of the canal. When the Suğla lake was at its maximum level, Suberde must have been an island. Wave erosion is noticeable on the slopes of a number of other neolithic sites in the Suğla lake basin. However, little evidence could be found at Suberde for an exploitation of water resources, and it is possible that the rise of the water-level is the reason for the early abandonment of the site.

Environment:

The climate of the area is characterized by warm and dry summers and cold and humid winters. The yearly precipitation is between 300 and 500 mm yearly with much of it occurring in the spring. According to Dr. Peter Davies, Royal Botanical Garden at Edinborough, to whom a collection of plants from the tepe was sent, the vegetation is of a degraged Mediterranean type most probably the result of deforestation and grazing. It is invaded by herbaceous steppe species of the Irano-Turanian type which are found over most of the Anatolian Plateau.

The first mountain fold rises immediately to the west of the site. It is quite rochy with a relatively sparse tree cover, consisting mainly of junipers. At higher altitudes, eastward, the forest cover becomes denser. Of special interest is the presence of wild goats in the high area of the eastern mountains. Wild boars are relatively abundant along the western marshy edge of the Suğla lake area. Skeletal specimens of these animals were secured for comparison in the study of the Suberde faunal remains.

General stratigraphy:

The site of Suberde (37° 20.8 'North and 31° 56.2' East) is located on top of a limestone ridge called Görüklük tepe, which is approximately 700 meters long by 70 wide and 30 meters high. The tepe, oriented northeast-southwest, is immediately west of the village of Suberde. The test pits, sunk over most of its surface, indicated that the prehistoric settlement seems to have been restricted to the area between the two highest points at its northeastern end (see figure 2). The area immediately to the south could not be tested since relatively recent burials prevented investigations, but it is probable that maximum extent of the prehistoric occupation was approximately 5000 square meters or about 1.25 acres.

The excavations conducted at Suberde indicated the presence of three main layers referred to as the surface layer (I) and the upper and lower prehistoric layers (II and III); layer IV is the sterile soil (see figure 3).

The surface layer:

The surface layer contains a large number of late burials which had repeatedly disturbed the ground and it did not yield any clear indication of permanent settlement. The tepe was apparently abandoned during the early neolithic period and thereafter parts of it served largely as a burial ground until the present times. Most of the surface of the site was covered with stones laid approximately in a rectangular outline oriented east-west, indicating Islamic burials. The villagers had no claim to the burial grounds in the area except in the southwestern part of the site which may have been occupied in prehistoric times.

The excavations were started in raea no. O by widening a pit which had been dug looters slightly before Professor Solecki's survey (Solecki 1965 : 133). The surface or burial layer was approximately one meter deep in most areas but went, in some cases, to a depth of one and a half meter. Among the earliest burials were seven well preserved wault tombs probably from the Roman period. They

were covered with heavy architectural stone slabs part of a destroyed structure apparently located near area no. O.

The many overlaping burials had unfortunately largely destroyed the upper prehistoric settlement, which was characterized by houses with plaster floors and mud walls. The surface layer, therefore, contained a large quantity of prehistoric material along with late historic materil consisting mainly of pottery sherds, iron nails, fragments of glass, some Islamic coins and a few pieces of copper jewelry. The only burials with offerings were the preserved vault tombs, some of which contained bracelets of twisted glass on the forearms of the skeletal remains. The pottery sherd collection was kindly examined by Miss Machteld Mellink and Miss Louise Alpers, Bryn Mawr College, to whom we owe, with gratitude, the following information.

Sherds from the Byzantine, Selcuk and Islamic periods were present in considerable quantity. Most of these are of the simple turquoise, green and blue varieties but a number of examples are fine, white-slipped and incised "sgraffiato" types. A number of thin-walled, black and red polished bowl fragments and coarser light-ground wares, decorated with bands of distinctive streaky dilute brownish-red paint apparently belonging to the Roman to Hellenistic periods, were also found.

In the burial layer were a number of fragments of bowls and jars of Phrygian monochrome gray ware with wavy line incisions, exterior grooves, small impressed wedges at an oblique angle, horizontal plastic bands decorated with rope-like incisions and furrows on the interior surface. These sherds seem to belong to the Phrygian Yazilikaya types. Fine painted Phrygian ware, decorated with small concentric circles, and plain or dotted lattice motifs executed in a reddish-brown paint on a highly polished light yellow surface, were also present. In addition, numerous sherds of a coarse, local version of these painted sherds were found. Very rare fragments of red Polished strainer jars and sherds of buff and red polished, trefoil-mouthed pitchers can be attributed to the Bronze Age period around the early second millennium.

No sherds from the Chalcolithic period were found. However, the burial layer yielded six sherds of dark reddish-brown fragments of fine, well-fired, grit-tempered ware, that had a highly burnished surface. These fragments seemed to have been parts of simple straight-sided vessels with simple inarticulated whole mouths. These few sherds which appear to be the only examples of the "dark Neolithic" wares from Anatolia, were absent in the Suberde prehistoric levels.

The prehistoric material found in the disturbed surface layer will be referred to later in the course of the description of the material from the upper and lower prehistoric layers.

Upper Prehistoric Layer:

The extent of the upper prehistoric layer is estimated to have been 1300 square meters. It consisted of a layer of red-brown loam, averaging 50 to 75 centimeters thick and containing the occupational refuse and remains of mud-walled, plaster-floored structures. Approximately 75 cubic meters of this layer were excavated.

Unfortunately, hardly anything remained from the houses of the Upper Prehistoric Layer. Many small fragments of plaster floors broken up by the burials were found dispersed in almost all excavations units in the burial layer. In layer II itself, not one complete structure or plaster floor was found. The largest preserved part of a floor was in area no. 32. It measures about 4 square meters and belonged probably to a square structure about 2.5 meters long.

In the same area and layer, two corners of a mud wall with fragments of a plaster floor were traced. The excavated remains indicated a structure with one

wall oriented due north, about 5.25 meters long, and the other, at right angle, at least 2.80 long. A mud wall-partition, approximately 1.05 meter long projected inside the room at approximately 0.95 meter from one of the corners.

Small lengths of wall from the Upper Prehistoric Layer were also found in areas 4 and 8. The largest, in area no. 4. was 1.10 × 0.70 × 0.35 m. It was built on a foundation of flat stones about 5 cms thick and a fragment of plaster floor abbuted against it.

The preserved wall fragments were usually made of alternating courses of mud of two different colors. The wall remains in area no. 4 for instance, was nine courses high with reddish brown loam courses of "bricks", approximately 7 cms thick separated by light brown courses of "mortar", about 4 cms thick. No horizontal divisions could be seen.

Plaster floors were usually made of a coat of plaster, 1 to 2 mm. thick, smeared over a layer, 10 to 15 mm. thick, made by mixing plaster and small stones. These two layers were generally laid on a foundation of clayey loam, approximately 10 thick, or directly over smoothed earth.

Lower Prehistoric Layer:

The Lower Prehistoric Layer extended over a larger area than the Upper Prehistoric Layer. Its surface is estimated to be about 1500 to 2000 square meters and approximately 50 cubic meters were excavated in this layer. The Lower Prehistoric Layer was generally overlaid by the plaster floor layer, except in the eastern area of the site. Its outer edge was traced in area 42 (see figure 4).

Some areas of the upper part of the Lower Prehistoric Layer were of greenish-brown earth. The layer became light brown in color further down until it reached the undisturbed yellowish loam, located directly on limestone bedrock. Lenses of hearth scraping, ashes and charcoal flakes, hard burned loam and accumulations of broken animal bones were found in several places, especially in the lower part of the layer.

Remains of at least one dwelling partially preserved by a fire were found in area no. 8 immeditely below the plaster floor layer. The precise stratigraphic situation in this area was very complex and has remained partly unclear.

It would seem that two superposed structures were present. The excavated remains of the upper structure formed the corner of a room with two walls approximately 40 cms thick and reprectively 2.70 and 1.60 m. long. These walls were made of courses of reddish brown mud bricks about 60 × 40 × 6 cms separated by layers of light brown mud approximately 4 cms thick. About 3 cms of the "mortar" separated the ends of the bricks. A clay covered earth bench approximately 30 cms wide and 45 cms high ran along part of these walls (see figure 5). Fragments of burned clay with botanical impressions suggest a mud and cane roof.

Near the corner of the structure, on the mud floor, thrown in a heap, were found about twenty large curved fragments of relatively hard burned clay approximately 2 to 4 cms thick.

Similar clay fragments had been found in 1964 in another part of excavation area no. 8 and they were believed then to be part of large, coarsely made jars. Actually, not one piece that might be part of the bottom of a container was found.

The 1965 excavations in areas no. 32 and 33 showed clay structures *in situ* that were probably similar to those from which fragments were excavated in area no. 8.

Figure 6 shows one of these clay structures being excavated. These structures seem to have been made by building up a clay wall 2 to 4 cms thick inside a cylindrical basin dug in the floor. This circular clay wall was then built up above the floor to about 15 to 20 cms high. The depth of the structures from areas 32 and 33, is about 30 to 40 cms down from the

carefully shaped rim, and their diameter 70 to 80 cms.

These clay lined basins have only an earth-packed floor. It is possible that the clay walls were not fired deliberately in situ by their makers but rather by an accidental burning of the dwellings in which they had been built, since all finds of these structures and fragments of hard burned clay were made in areas where layers of burned loam indicated large fires.

The cylindrical structures did not contain any botanical remains, bones, ashes or charcoal. It is possible that they were circular floor basins used as bins for storage.

Excavation units and stratigraphic groups:

The stratigraphic contrast between the three main layers was usually well marked and easy to follow in the course of the excavations. Four hundred and seven excavation or surface collection units were set up at Suberde to follow stratigraphic features or to divide homogeneous layers in several units of possible chronological or functional interest. Most of the surface layer was excavated in arbitrary excavation units since the repeatedly overlapping islamic burials had mixed the remains of the prehistoric and later periods.

The layers of the site were subdivided into 16 groups of excavation units characterized by contrasting stratigraphic features.

Since important quantities of material obviously of prehistoric date were present in the disturbed surface layer, efforts were made to estimate in each case the stratigraphic origin of the disturbed material. Thus, all excavation units in the disturbed layer were assigned to different groups according to the characteristics of the underlying undisturbed prehistoric layer. The assumption being that most of the prehistoric material found in the various areas of the disturbed burial layer would be more likely to come from the prehistoric layer just below them.

The 16 stratigraphic groups will now be listed and briefly described.

IB/II. IB over II includes 56 excavation units with burials, in the surface layer, immediately above the remains of layer II, the upper prehistoric layer or plaster floor layer.

IB + II. IB + II includes 60 excavation units in the surface layer which could not be clearly attributed to II because of unclear contact between layers IB and II or because of errors made by the archaeologists. These units are in the contact zone between IB and II and are lower than IB/II.

IB/III. IB over III includes 12 excavation units with burials, in the surface layer, directly over the lower prehistoric layer III without the intervening layer II (see figure 4).

IB. IB includes 8 excavation units with burials in areas of the surface layer which are directly over bedrock or sterile soil. These units were excavated at the edge of the site where the slope of the tepe probably prevented human settlement.

I/II + III. The group I over II plus III includes three excavation units without burials in the surface layer which are over indistinguishable or accidentally mixed parts of layer II or III.

I + III. The group I plus III includes 26 excavation units in areas where layer III comes close to the surface without overlying layer II and without burials.

II. Group II includes 29 excavation units in the undisturbed plaster floor layer of upper prehistoric layer.

II + III. Group II plus III includes 17 excavation units which could not be exactly allocated to any of these two layers because of a disturbed or unclear contact situation or because of errors made by the archaeologists

III. Group III includes 59 excavation units clearly in the light-brown layer, the lower prehistoric layer.

III St. 8. III St. 8 includes 29 excavation units in the structure complex in

area no. 8, the only area in the lower prehistoric layer where the preserved remains of the dwellings and the fragments of presumed bins described above were found.

III T. 32 – 33. III T. 32 - 33 includes 19 excavation units in areas 32 and 33, where a large mass of burned loam and the two almost complete bins were found.

III + IV. III plus IV grouped 22 excavation units in the lowest part of layer III which are in direct contact with the yellowish bedrock soil.

IV. IV includes 100 excavation units in the yellowish bedrock soil. Some of these units contained a few artifacts in their upper part. These 10 excavation units were added to III + IV.

IB + II + III. Group IB plus II plus III contains 40 excavation units of mixed material from the burial layer with at least one of the prehistoric layers. Included in this group are the screenings of the back dirt and the scrapings from the walls of the looters'excavations, units excavated in unclear stratigraphic situations, and units in which material from the surface burial layer and at least one of the prehistoric layers were mistakenly mixed by the archaeologists.

Susface group. This group includes five collection units made on the surface of the tepe.

Miscellaneous group. Included here are 12 excavation or collection unit numbers used for soil samples, or in excavation operations that were sterile.

Archaeological material:

The artifacts collected at Suberde will be described in the following order: polished and pecked stone, the bone industry, the clay objects, the chipped stone industry.

Polished and pecked stone:
Celts

A total of 52 polished stone celts and celt fragments were excavated at Suberde, the great majority of these 42 were found in groups II, IB + II and IB/II. These artifacts are almost all made of green diabase. They are ground over their entire surface though some specimens still show pecking marks at the butt end.

Except for two axe heads and one adze head of relatively large dimensions (about 10 cms long), most of the Suberde polished stone celts are small, approximately 4 to 7 cms in length, 2 to 5 cms in width, and 1 to 2 cms thick.

Several classes of axes have been distinguished: axe heads with rounded butt and nearly parallel edges (see figure 7), axe heads with rounded butt and splaying edges (see figure 8), and quadrilateral axes with straight butts and parallel sides (see figure 9, 11). The great majority of these axes were found in excavation units from group II or associated groups such as IB + II and IB/II.

Chisels are included under this heading (see figure 10). They are small polished stone tools, relatively long, narrow and thin, averaging 3 × 1.5 × 0.8 cms. Chisels were found in both lower and upper prehistoric layers. Adze heads are relatively rare (3) and were found in both prehistoric layers. They are quadrilateral in shape. One of these tools measures 9.4 × 6.4 × 1.8 cms, while the two others are smaller, measuring 4.6 × 4.5 × 1.4 cms and 3 × 3.3 × 0.8 cms.

Four of the quadrilateral axes and adze heads have bevelled working ends (see figure 11). Two were found in each prehistoric layer.

Shaft Straighteners:

Ten shaft straighteners and fragments of shaft straighteners were found; four of these in the undisturbed prehistoric layers.

Made with a variety of stones, they are rectangular objects ranging in length between 7.9 and 3.1 cms. They have, usually on only one face, a straight groove approximately 1 cm wide and a few millimeters deep (see figure 12). These tools show a few small areas of faint polish and small striations in the grooves.

Centainly these tools were not used for grinding bone since they have no abrasive surface. It is probable that they were used in pairs with heat and water to straighten shafts by running the shafts through the space formed when the grooves were placed opposite each other.

One of these shafts straighteners is decorated by incisions (see figure 13).

Edged - Grooved Stone:

Five polished stone objects, of unknown use, prismatic in shape with one or several grooves on the upper edge, have been found. One in the upper part of the lower prehistoric layer, and the others in the burial layer (see figure 14). Some of these objects show some faint polish in the grooves. One large specimen (5.7 × 3.4 × 2.4 cms) shows 13 parallel incisions on one face (see figure 15). The two other whole specimens measure only 3.1 × 1.9 × 1.2 and 2.6 × 1.3 × 1.1 cms.

Stone Ornaments

A total of 22 ground stone ornaments were found in the Suberde excavation mainly in group II and associated groups. Of these, only one, a barrel shaped stone bead (1.5 × 1.16 cms), was found clearly in the lower prehistoric layer. The stone ornaments include small cylindrical, circular and winged beads. The most interesting find was that of 54 whole circular beads of red and white stone (5.5 × 0.1 cms) in a group II unit.

Four perforated stream pebbles of approximately 2 to 3 cms in diameter were found, one in a group III excavation unit.

Three perforated ground stone pendants were excavated; one is roughly cylindrical in shape, another is cruciform, and the last is a large pentagonal plaque of green schist (10. 7 × 10 × 10.8 cms). Since most of the stone ornaments came from units in group IB/II and IB + 2, it is likely that they date to the upper prehistoric layer.

Plain and Incised River Pebbles

Almost 1900 small river pebbles of various colors, measuring usually 2 to 2.5 cms in diameter, were found in all stratigraphic groups. In addition to the four perforeted pebbles referred to above, 10 pebbles were found incised generally with thin irregularly lines drawn parallel and less frequently in radial or cross hatch pattern (see figure 16).

Polishing Stone:

Sixteen oval stones with flattened faces, 5 to 6 cms long, 2.5 to 5 cms wide, and 1 to 3 cms thick, were found in various disturbed excavation units. Twelve of these were found in group IB + II, likely coming from the upper prehistoric layer. None were found in the lower prehistoric layer. One specimen was found in an undisturbed plaster floor excavation unit from group II. The stones are believed to have been used in polishing plaster floors.

Pecked stones:

Close to 450 specimens of pecked stone, mostly fragments, were found at Suberde expecially in stratigraphic groups IB/II and IB + II. It is most probable to that a large part of these do not belong to the prehistoric periods. However, approximately 120 specimens, mainly fragmentary, were found in undisturbed excavations units in the prehistoric layers, starting in the lowest units from III/IV. They include grinding slabs and pounding stones.

Small grinding slabs:

The majority of these are fragments of bifacially or unifacially small ground slabs of quartz and porphyritic basalt. The few whole specimens that were excavated are oval or roughly rectangular in shape and measure approximately 20 × 5 × 3.5 cms. The ground surfaces are almost flat, and still show, in a number of cases, traces of finely ground red ochre.

Other grinding slabs:

A number of heavy grinding slabs that seem to belong to a "neolithic" context were also found, some in stratigra-

phic groups IB/II and IB + II and it is possible that they belong to the upper prehistoric period.

This group includes 9 large whole or fragmentary querns. Roughly rectangular in shape with rounded corners. The complete specimens must have measure approximately 50 × 35 × 7 cms. The trough slopes down from a flat platform measuring approximately 25 × 15 cms at one end. One of these specimens is worked in this way on both faces (Solecki 1965 : 134).

Pounding Stones:

One complete specimen of ground stone in the shape of a cone with slightly concave sides and a truncated top was found in an undisturbed excavation unit from layer II. It measures 11.9 cms in length. Its narrow end at top is 4 cms in diameter, the other end, slightly oval in shape, measures 7.6 and 8.4 cms along perpendicular axes. Made of a micaceous stone, the tool shows faint wear marks at both ends.

Three additional similar specimens were found in units from stratigraphic group IB + II. Eleven more fragments, 6 of which were found in undisturbed prehistoric excavation units might be fragments of similar artifacts which were probably used as pestles.

Pecking stones:

Three roughly spherical pecking stones, two of which were found in layer II, show heavy marks of battering. Two of these specimens are made of flint and show the minute conchoidal fracture characteristic or their use as hammerstones to shape stone artifacts by pecking. Their cross section is circular or oval and their dimensions are 8.5 × 8.1 × 5.4 cms and 6.9 × 7.9 × 6 cms.

Worked bone industry:

A little more than 300 pieces of worked bone were found in the Suberde excavations. About 200 of these specimens, made by grinding slivers of now usually unidentifiable bones, are tools with pointed tips, probably awls (see figure 17), though a few of these tools have squared-off or rounded tips.

Fragments of a large flat bone needle were found in an excavation unit from group III. The two reconstituted fragments (see figure 18) measure together 24.3 × 1.1 × 3.5 cms.

Boar tusk ornaments :

Three curved ornaments made by splitting boar tusks and grinding away most of the dentine were found in stratigraphic groups II, IB/II and in III + IV. One of these, (from group II), is a whole specimen and measures 12.6 × 4.9 × 1.6 cms (see figure 19).

Bone beads and pendants

Of the five objects in this class, four were found in the lower prehistoric layer: two in II/IV, one in III St. 8, and one in III. They are roughly cylindrical beads or flat, rectangular pendants. All are less than 2.5 cms in length.

Other worked bone specimens:

Additional miscellaneous objects of worked bone include two small flat bead spacers, a polished and perforated astragalus from a sheep or goat, one broken rectangular artifact made from a piece of rib, with a series of notches on each edge, and two fragments of a nearly rectangular piece of bone (4 × 1.8 × 0.2 cms) with incisions in a chevron pattern. The remaining pieces of worked bone are fragments of specimens, probably parts of hafts, since some show what are probably suspension holes, unidentifiable tool fragments, and a number of bones only slightly ground for casual use.

Metal artifacts:

Three heavily corroded fragments of a copper wire (2 × 0.2 cms), were found in an excavation unit of group III in the lower prehistoric layer. These specimens were analyzed by Dr. S. Junghans, Landesmuseum Stuttgart, through the kind offices of Dr. Ufuk Esin, University

of Istanbul. The analysis showed the object to be clearly of bronze with a tin content of 8.4 %.

The artifact was believed to be in context but the possibility of a fraud can not be excluded at the time of the find and a prehistoric date for this object should must evidently be rejected.

Clay objects:

In addition to the sherds found in the disturbed surface layer, a certain number of other objects of clay were excavated at Suberde. Among these objects were 13 sherds whorls, two andirons and 17 spindle whorls, found in the excavation units from groups IB + II, IB/II, and IB + II + III. None were found in undisturbed prehistoric excavation units. Th3se objects are, therefore, most unlikely to be prehistoric specimens.

Clay cones:

Thirty-three small cones of low fired clay were found at Suberde (see figure 20), starting in the earliest excavation group, III/IV. The perpendicular axes of their base, which is usually oval, are most frequently 1.7 and 2.2 cms. However, in some cases these cones have a perfectly circular base with a diameter sometimes as small as 1.2 or as large as 3.1 cms. The height varies between 0.8 and 3.0 cms, but it is most usually between 1.7 and 2 cms.

Ordinarily the apex of these cones is pointed. However, in some cases it was flattened, and in two specimens a wide vertical groove had been carved on the sides of the cones.

One conical clay object, measuring 2.2 cms in base diameter and 1.4 cms in height, has a tip resembling a bird's head (see figure 21).

Clay figurines:

Out of the 21 low-fired figurines and fragments of figurines, five are definitely indentifiable. One is a fragment of a woman figurine and the four others are complete or almost complete figurines of boars.

Eight of the 21 specimens were found in undisturbed prehistoric excavation units; three of these are from the lowest part of the lower prehistoric layer that is group III - IV. Their distribution suggest that the manufacture of these figurines spans the entire prehistoric occupation.

Two of the boar figurines, illustrated in figure 22 and figure 23, were found in the lower prehistoric layer (Groups III and III - IV). One other was found in an excavation unit of group II + III and another in an excavaion unit of group IB/II. These figurines are all made of low-fired, light reddish-brown paste with a slightly rough surface. The largest boar figurine measures 4.7 cms in length and the shortest, 2.4 cms. Three of these four figurines clearly show a hair ridge on the back of the animals.

The female figurine fragment is a torso (6 × 3.8 × 3 cms). The neck shows a peg hole probably made for a movable head. On the back, below the waist, cross-hatched incisions probably indicate a skirt; the front of the torso below the abdomen is chipped (see figure 24).

Miscellaneous ceramic objects:

Other clay objects include six small balls and pellets, four roughly made cylinders of clay, usually 2 to 3 cms long and 1 to 2 cms wide, and 13 cylindrical fragments. These objects were found in various parts of the two prehistoric layers, as well as in the surface layer.

These miscellaneous clay objects of unknown function were made from the same low-fired paste as the figurines and cones. They date most probably from the prehistoric occupations.

Pottery sherds:

Of particular interest was the discovery in group III St. 8, that is in the upper part of the lower prehistoric layer, of five sherds of extremely coarse ceramic, which are pieces of portable pottery. Twelve other fragments of the same type kind were

found in excavation units from the groups IB + II, IB/II and IB + II + III. None were found in the other parts of the lower prehistoric layers or in any of the excavation units from the upper prehistoric layer (II).

The preserved rims are simple in shape, either holemouthed or rolled slightly outward. The thickness of the sherds is approximately 1.5 cms. Their surface is uneven and only very roughly smoothed. The paste includes a large amount of minute holes due to vegetal inclusions. The surface color is pinkish-buff and a thick carbonaceous core is present in all cases.

These sherds are definitely part of portable pottery vessels and quite easily distinguishable from the thick bin fragments found in the same late part of the lower prehistoric layer. It seems that portable pottery was made at least by the end of the lower prehistoric period, but it was apparently fabricated in very small quantities and did not lead to any further development in pottery manufacture.

Plaster objects:

Three unusual objects of shaped plaster of unknown use were excavated in layer II. One was a multifaceted plaster ball with a diameter of approximately 3 cms and another a large cone 7.4 cms high, with a base measuring 6 × 4.7 cms. A third object of plaster, found in an excavation unit from group IB + II, is shperical in shape (1.7 cmsc in diameter) and is topped by a roughly cylindrical neck (1.4 × 1.1 cms) that has a groove incised around it.

Chipped stone industry:

Predominantly made of obsidian (90 %), the collection of chipped stone artifacts from Suberde includes close to 2,850 specialized tools and fragments of specialized tools, about 380 cores and fragments of cores, close to 4,350 blades and flakes retouched by use or deliberately retouched for use as knives or light scrapers, and finally, about 20,300 waste pieces showing no sign of retouch.

Pending a final verification of the total number of tools in certain classes of the chipped stone industry, stored in the Konya Museum, Turkey, all figures have been quoted here with a margin of error of plus or minus 10 or less.

The most striking characteristics of the Suberde chipped stone industry is the small size of the implements. The tools rarely exceed 5 cms and most of them are 3 to 4 cms in length. Not much stone appears to have been wasted, especially flint and retouch is found even on very small pieces.

Though comparative date is not very abundant, it seems that the amount of retouched stone pieces, specialized tools and blades and flakes retouched *by* and *for use*, is unusually large comparatively to the total number of chipped stone collected. At suberde, this proportion is approximately 25 % while the same ratio calcufor a few sites where chipped stone specimens have been collected, seems usually to be closer to 10 %.

The analysis of the chipped stone industry was based on the definition of contrasting attributes and combinations of attributes relating to shapes, techniques or retouching and signs of wear shown by individual tools.

Cores and fragments of cores:

Close to 310 exhausted cores and fragments of cores were excavated. There does not seem to be any significant difference in the distribution by stratigraphic layers of the various classes of cores and fragments of cores.

Forty of the 51 unbroken cores are conical in shape, usually under 4 cm in height and 4 cm in the diameter of the striking platform (see figure 25).

A few discoidal cores (9) and tabular cores (2) were also found. Among the amorphous fragments of cores, twenty four had been retouched into scraping, piercing and notching tools.

Projectile points:

About 560 points and fragments of points were found in the course of the excavations. These artifacts constitute by far the largest class of artifacts, excluding of course the broken animal bone collection. Only about 5 % of the points are made of flint.

Only 32 whole specimens were found and the majority of the fragments (nearly 80 %) are bases.

It is estimated that the majority of the Suberde projectile points measured 4 to 5 cm in length. They were apparently always made on blades except for a few unusual flake points. Unifacial retouch, mainly dorsal, is the most frequent except in the shaping of the bases which is done in about half the cases by bifacial retouch.

In order of decreasing numerical importance, the various shapes are the lanceolate shape (see figure 26); the strangulated shape, an unusual shape manufactured by roughly notching a lanceolate point near the base at two opposite places on the edges (cee schematic figure 27); the ovate points with acute tip (see schematic figure 28); and finally, the stemmed points (see figure 29). These various shapes are distributed without strongly apparent contrast among the layers.

Notched and denticulated tools:

These tools, which number close to 200, were divided in three groups : notched, multi-notched and denticulated. The great majority of these specimens is retouched dorsally, though bulbar and alternate notching retouch are also present.

The whole and fragmentary notched tools which number almost 110 spercimens, more than half of the total collection, are mostly done by dorsal notching retouch.

The multi-notched whole or fragmentary specimens include slightly more than 70 pieces which are notched more than once, most usually along one edge only (see figure 30).

The edges opposite to the notched or multi-notched edge is left unretouched but, in about half the cases, the specimens show in order of decreasing numerical importance, dorsal retouch and, more rarely, bulbar retouch.

Notching on opposite edges is rare but occurs among notched and multi - notched tools in 18 cases. This bilateral notching is generally dorsal but also, sometimes, alternate (see figure 31).

The denticulates include 17 artifacts, finely serrated dorsally, with the opposite edge left unretouched except in two cases showing bulbar retouch.

These tools are distributed between the various layers without apparent contrast.

Approximately 20 % of the notched and denticulated tools are made of flint.

Piercing tools:

Slightly more than 140 blades retouched into drills or perforators were found in the Suberde excavations. No significant differences appear to exist in the distribution of the various attributes and their combinations in the prehistoric layers.

Approximately 40 % of these tools are in flint. Definite wear marks were observed, using a × 40 magnification, on approximately 60 % of the tools, in almost all the classes that were set up according to the combination of the following contrasting attributes. A first set of attributes relates to the axis of the working part of the tool. The working part may be in the main longitudinal axis of the blade, with or without shouldering (see figures 32, 33, 34, 35), or to one side just above one of the edges of the blade. The piercing part may also be canted, that is, set obliquely to one side, such as in an illustrated double piercer (see figure 36). A second set of attributes relates to the kind of retouch used to manufacture the business end. It may be dorsal (see figure 33), bulbar (see figure 32), bifacial (see figure 34), or alternate (see figure 35).

Backed blades

Slightly more than 140 backed blades were found without apparent concentration in any of the two prehistoric layers.

About 40 of these blades are backed dorsally, almost half of these into a point, at one of the ends.

About two tihrds of the backed blades are, in addition, truncated at least at one end.

The majority, 59 %, of these are made of flint.

Sickle blades:

Approximately 320 blades and fragments of blades retouched in various manners to be discussed later showed on one of their edges sickle sheen, usually believed to be the result of the cutting of grasses and reeds. These specimens were found in excavation units attributed to to both prehistoric layers as well as in the burial layer.

All the specimens are in flint of many different colors, apparently collected in river beds. The most common length of the whole specimens is under 3 cm.

The largest single class of specimens (approximately 100 pieces) includes only unretouched blades. Next are blades either partially or completely backed and often retouched into a point at one end. These classes include close to a hundred specimens. Backed and truncated blades (see figure 37) are the next most numerous group (approximately 60 specimens). Approximately 30 backed and unbacked blades are denticulated on the sickle edge (see figure 38). The remainder are various classes showing various combinations of backing, truncations, and point retouch.

Five of the specimens showed on the edge opposite to the working edge a few particles of black matter approximately one tenth of a mm in diameter, suggesting an adhesive used for hafting.

Some experiences begun in the field in 1965 by testing blades of obsidian and flint undertreshing sledges indicate that obsidian wears faster than flint and actually seems to loose its original gloss if used for a long period. Since no dulled obsidian blades were found, it is possible that flint was exclusively used at Suberde as material for sickle blades, because of its hardness.

Microliths: Close to 60 tools and fragments of tools of microlithic size were found at Suberde in excavation units from all layers.

Approximately two thirds of these specimens are in flint, one third in obsidian. Their most common dimensions are 2.0 × 0.6 × 0.2 cms.

Included in this category are 10 standard geometric microliths, that is, 3 triangles, 7 lunates (see figure 39) and fragments of lunates. Also included are 15 micro-tools, i. e. minute blades retouched into scrapers, knives and perforators (see figure 194). The remainder consists of various classes characterized by various combinations of backing and truncations of different kinds (see figure 40).

End-scrapers:

About one hundred and twenty specimens of end-scrapers and fragments of these tools were excavated with no apparent contrast in the distribution by layers of the various classes set up according to the shape of the tools and the location and kind of retouch made.

The majority of the specimens show retouch at least on one edge (see figure 41). About one third of the forty complete tools found are double end-scrapers.

Side-scrapers:

Slightly more than 40 side-scrapers and fragments of side-scrapers made on blades by dorsal retouch were found in excavation units belonging or associated with the two prehistoric layers without apparent differences in their distribution.

Three-quarters of these specimens show bilateral scraper retouch usually straight but also, in a few cases, convex on one or both edges.

The unilateraly retouched side-scrapers have a straight or nearly straight scraping edge.

Prismatic rods

This term has been chosen to refer to a group of about 85 whole or fragmentary specimens of obsidian and three specimens of flint which are often referred to in the literature as fabricators, that is, as tools used to retouch stone.

As a gorup, these specimens are characterized by their heavily battered edges, their usually elongated rod-like shape and their cross-section resembling the shape of an equilateral triangle. The edges of the specimens are usually nearly parallel (see figures 42 and 44) but do sometimes also converge (see figure 43). A few flatter blades with heavy edge battering are also included in this group.

The prismatic shape suggests that these artifacts might have been originally fragments of conical or cylindrical cores split longitudinally. However, no evidence was found that they were made from *crested blades*, the by-products of the preparation of blade nuclei, since none of the specimens show the scars of the characteristic crested blade flakes which are struck from the dorsal ridge.

The battering is quite steep and in some cases, it has destroyed the edge so much that overhangs can be observed above the battered edges.

About a third of the specimens have only been retouched close to the edges. The remainder may be flaked entirely over one or two of the prismatic dorsal faces.

Some examples of bulbar proximal retouch would suggest hafting. There is also a large amount of irregular bulbar edge chipping suggesting that these tools might have been used as reamers.

Circular scrapers:

Circular scrapers which number close to 340 whole and fragmentary specimens constitute the second most numerous group after the projectile points. Approximately 10 % of these specimens are in flint, the rest in obsidian.

These artifacts are roughly circular or semicircular flat scrapers, hoof-like in outline, which are made on thick flakes (see figures 45, 46, 47, 48) The various classes of scrapers were found in both prehistoric layers.

More than two thirds of the specimens are 05. to 0.9 cm. in thickness, usually 0.6 - 0.7 cm. Most of the remainder range between 1.1 and 1.5 cm. in thickness.

The diameter of about two fifths of these scrapers is greater than 3 cm., generally 3.2 cm., with a maximum of 4 cm. The remainder are divided about equally between scrapers ranging between 1.7 to 2.1 cm. and those ranging between 2.5 and 3 cm., generally 2.6 cm.

The retouch is short and steep (most frequently 40° to 60°). It does not cover a large part of the flake's dorsal face but it is usually found around most of the edges, though the flake's striking platform is often left unretouched (see figures 45, 46).

Signs of heavy battering are shown by about half of the tools, especially by the thicker and larger specimens. The battering found on the edges of the circular scrapers and of the prismatic rods is quite similar. Both tools might have been used for the same purpose, perhaps as fabricators, but possibly also for the rough scraping and cutting of a dense material, such as bone. No burins, which are tools well designed for bone working, have been found at Suberde.

Blades and flakes retouched by and for use:

This group includes slightly more than approximately 4,350 blades and flakes which have not been retouched into specialized tools but show some limited bulbar or dorsal retouch on part of their edges. Alternately retouched blades have been excluded from this category. The proportion of flint specimens in this category is approximately 25 % of the total.

Most of these, about 2,750, seem to have been *retouched by use*, rather than deliberately retouched, because of the irregularity and discontinuity of the retouch. Approximately 1,500 other blades and flakes which seem to show more deliberateness in their retouch have been classified as blades and flakes *retouched for use.*

The distinctions made between blades and flakes and retouch *by use* and *for use* are evidently often not very clear but the material in this group contrasts with the specimens included in the waste category since these do not show any sign of chipping to the naked eye.

Most of these specimens are probably flakes and blades used for cutting or light scraping. The category of specimens retouched for use includes mainly flakes and blades probably retouched to straighten or repair an edge.

Alternately retouched blades:

This category includes about 70 blades and fragments of blades of obsidian and nine of flint which have been chipped on two edges by *alternate* retouch or at one edge by *alternating* retouch. Alternating retouch occurs also in combination with bulbar or dorsal retouch on the opposite edge.

Alternate and alternating retouched specimens are not rare in the Suberde chipped stone industry, as we have already seen in a number of the categories of tools listed above. Examples of alternating retouched blades do not seem to occur in any particular concentration in the excavated prehistoric layers of Suberde.

Flake tools:

Included here are close to 60 flakes retouched dorsally into side-scrapers (about 45 specimens) and end-scrapers. Slightly more than 20 of these specimens are of obsidian.

Their most common dimensions are approximately 4.5 × 3 × 0.9 cm. These flake scrapers appear in both prehistoric layers without significant concentrations.

Miscellaneous tools:

This category includes about 30 blade tools of diverse shape found in the various layers of the Suberde excavations. They are characterized by different combinations of edge retouching, truncations, battering and overall shape which set them apart from the tools included in the categories briefly described above. They will be described individually in the forthcoming final report. About a half of these tools are in obsidian, the rest in flint.

Fragments of tools:

This category includes worked pieces of obsidian (slightly more than 100) and worked pieces of flint (close to 15) which seem to be fragments of specialized tools because of the type of retouch, and battering and other use marks that can be observed, but which are too small to be definitely added to any of the categories of tools described above.

Waste pieces:

This category includes all chips, blades, flakes and other pieces of obsidian and flint which did not show any chipping or retouching to the naked eye. Included here are close to 20,300 specimens of which approximetely 10% are in flint.

Conclusion:

At the present stage of the research, there does not seem to be much significant contrast in the distribution of the major characteristics of the chipped stone industries in the various stratigraphic groups.

Stratigraphic group II has the highest percentage of nickle blades of all groups. This might indicate a greater reliance on a vegetal diet but stratigraphic group II is at the same time proportionately the richest in projectile points.

The use of flint as a raw material varies greatly from one category to the next. Considering specialized blade tools, the use of flint is highest for sickle blades (100 %), microliths (63 %) and backed blades (59 %).

These tools are those that were most likely to have been hafted and it would seem that flint, a harder material than obsidian, might have been preferred since it would lengthen the life of the hafted tool.

The proportion of flint furthermore decreases from a relatively high value for specialized tools (about 36 %) to a lower percentage for blades and flakes retouched by and for use (about 23 %) and finally to a still lower percentage (10 %) for waste pieces. Flint was obviously used with greater parcimony than obsidian and it is probable that the Suberde knappers were reluctant to throw away pieces of flint without having as far as possible made the fullest use of them.

Zoological remains:

The faunal collection from Suberde is the largest that has yet been recovered in southwestern Asia and will constitute, because of its variety and size, an important reference collection for identification and for the comparative study of the beginnings of domestication in this region.

The study of the collection has been undertaken by Dr. Dexter Perkins Jr. and Mrs. Patricia Daly who have published in 1968 a preliminary report on their work.

The collection included approximately 300.000 specimens from all layers. The collections from the various excavation units have been lumped together as usual according to their stratigraphic groups.

As usual on most prehistoric sites, all bones containing marrow had been split leaving many small splinters and scraps of bone which could not yield much information. The collection of identifiable bone fragments amounted to about 10% of the total collection.

The large majority of the identifiable bone specimens were remains of sheep and goat. These remains are usually lumped since very few bones of the skeletons ot these animals are different. The relative proportion of the bones that show some specific differences indicate that sheep probably represents 85 % of the total sheep/goat remains.

Other species identified include mainly oxen, pig, red deer and a number of other species represented by smaller numbers of specimens including land tortoise, dog, jackal, fox, wild cat, marten, hedgehog, badger, roe deer and fallow deer. Fish and warterfowl were present in surprising small amount.

The only domesticated animal at Suberde was the dog.

Neither the morphological study nor the distribution of the age classes of sheep/goat, oxen and pig indicated that these animals had been domesticated. Details of the study are available in Perkins and Daly (1968) and need not be presented here.

The main meat animals was sheep and there seems to be little variation in the relative proportion of the various animals hunted during the two prehistoric occupations except for a slight increase in oxen killed and a drecrease in sheep/goat killed during the upper prehistoric occupation.

The study of the relative proportion of the parts of the skeletons found at the site indicates that the animals were butchered at the place of the kill since most of the bones from the axial skeletons and from the legs are often missing. This is especially true in the case of the larger animals such as oxen and red deer which are frequently represented only by the bones of the feet.

The study of the age classes based on tooth eruption and bone fusion seems to indicate that the hunting of animals and the occupation of the site lasted all year long.

Botanical remains:

An assidous search for botanical remains, especially of edible seeds, has remained unsuccessful. All ash and charcoal lenses were carefully examined with the help of a hand lens and potentially

interesting specimens from eighteen different excavation units in the prehistoric layers were examined by Dr. Eric Callen, McGill University. Apart from bits of unidentifiable wood, this collection contained as botanical remains only a fragment of what may be a husk covering of a nut (perhaps a small walnut).

Flotation was not used to process samples of excavated earth, but several hundred pounds of burned loam were saved to be examined for botanical impressions. One of these fragments of burned loam showed the imprint of probably a reed, the epidermis and glume of an unidentifiable monocotyledon and possibly the remains of a non-grass seed coat. The analysis of the burned loam material has not yet been completed.

Soil samples from various excavation units were forwarded to Dr. Burhan Aytuğ, Director of the Palynological Laboratory of the University of Istanbul, who had kindly accepted to study the material.

Special techniques of vibro-separation and microflotation had to be used to compensate for the scarcity of pollen grains in these samples. Twelve of the thirteen samples submitted yielded pollens in numbers varying from nine to 123 identifiable specimens. The pollen samples from the upper prehistoric layer yielded only nine identifiable grains, but five samples from group III and III - IV yielded a total of 103 identifiable specimens.

Five samples from group I + III provided 308 grains. There are no gross palynological differences between the samples from group III and those from group I + III. Therefore, the information that follows, and, which was extracted from Dr. Aytuğ's report, pertains to the lower prehistoric period.

Dr. Aytuğ suggests that during that period cedars, pines and probably juniper trees, as well as chestnut trees, birches and poplars were present in relatively large numbers in the area. The variety of trees was evidently much greater than today, and the forest probably extended from the high mountainous zones right down to the lake shore. The temperature was probably lower than today since pinus sylvestris, found in the pollen samples, does not grow at this latitude today. Of special interest were the pollen grains of graminae (as yet not further identified), that were found in the prehistoric layers. Two grains were isolated in the sample from layer II, and 22 from the samples from the lower prehistoric units in I + III and III. Fifteen of these (one from II and the rest from the other samples) are of large dimensions (40 to 56 microns) which, according to Dr. Aytuğ, might suggest domesticated cereals. However, the overall evidence for plant domestication is unfortunately still insufficient.

Shells:

One hundred and forty eight unworked shells, whole and fragmentary, were collected at Suberde. Fifty four of these were from undisturbed excavation units in the prehistoric layers. Our description which will be limited here to these fifty four specimens makes use of the identification kindly provided by Dr. A. H. Clarke, Head of the Invertebrate Zoology section of the National Museum of Canada, Ottawa.

Thirty five of the 54 shells are fresh water shells including 28 specimens of *Viviparus viviparus*, the common snail especially numerous in stratigraphic group II. The other shells, all marine shells, include 9 specimens of Cardium, 4 Dentalium, 3 shells of the Cypraea species, the cowrie shell, and one specimen each of Olivia, Columbella and probably a Cerithidae.

The number of fresh water shells seems relatively small for a site which was until recently on the shores of a lake. However, the significance of this scarcity of the fresh water shells cannot be really evaluated before further ecological and archaeological work is done in the area. On the contrary, the number and variety

of marine shells is quite surprising and seems to indicate an active trade or exchange of shells with the Mediterranean coast.

Radiocarbon dates:

A total of seven radiocarbon dates have been calculated for Suberde, six through the kind offices of Dr. Elizabeth K. Ralph and of Dr. Robert Stuckenrath, Jr. of the Applied Science Center for Archaeology; University of Pennsylvania and one at the radiocarbon laboratory of Isotopes, Inc. New Jersey.

These dates shown in the following table pertain to excavation units from various stratigraphic groups from layer III, the lower prehistoric layer. The upper prehistoric layer, layer II, could not be dated by radiocarbon measurements since the only sample found *in situ* was unfortunately too small to be processed by the laboratory.

SUBERDE. RADIOCARBON DATES

Layer	Stratig. groups	Excavation		Laboratory no.	B. C. dates	
		unit no.	area no.		5730 ± 30 $\frac{1}{2}$ life	5568 ± 40 $\frac{1}{2}$ life
III	St.8	108	8	P - 1385	6136 ± 91	5957 ± 88
		342	8	P - 1386	6285 ± 78	6045 ± 76
	III	58 + 59	4	P - 1387	6575 ± 298	6326 ± 289
		312	9	P - 1388	6413 ± 81	6226 ± 79
		25	0	P - 1391	6488 ± 94	6299 ± 91
		21	0	I - 1867	(6767 ± 144)	6570 ± 140
	III - IV	319	42	P - 1389	5862 ± 88	5634 ± 85

The samples are listed in their stratigraphical sequence with the lowest sample placed on the last line of the table. The date for I - 1867 given with a C 14 half-life of 5568 ± 40 has been multiplied by 1.03 to obtain an equivalent date based on a c 14 half-life of 5570 ± 30.

As can be seen from the table, the sequence of the dates obtained agrees well with stratigraphical order of the samples. The only exception is the date for sample P - 1389, the lowest sample from layer III, which, however, dates later than all the other samples even if the span of two standard deviation is included. In view of the agreement existing for all other samples between the stratigraphical order and the sequence of the datings, it is likely that an unknown source of error is responsible for the conflict and this date should be rejected.

Considering the overall pattern of the dates obtained for the Suberde samples, it might be suggested that the lower prehistoric layer, layer III, dates from about 6 600 to 6 200 B.C. ± 100 if the dates are calculated with a C 14 half-life of 5 730 ± 30 or 6 400 to 6 000 B.C. ± 100 with a C 14 half-life of 5 568 ± 40.

A satisfactory dating of layer II at Suberde must await the evidence that further excavation in the Beyşehir-Sugla region might provide. At the present time, it is most likely that layer II at Suberde is earlier than the levels of the neighboring site of Çatal Hüyük (Mellaart, 1964) where the "early neolithic" brown and black burnished ware with lugs and loop handles have been found. This ceramic occurs at Çatal Hüyük in large quantities in level VIa dated approxi-

mately to 5 800 to 5 900 B. C. (C 14 half-life : 5 730 + 30).

Since only six sherds that might be related to this early ware have been found at Suberde, all, further more, in excavation units from the disturbed surface layer, it is probable that layer II at Suberde is, at least, earlier than level VI at Catal Huyuk, that is earlier than 5 800 to 5 900 B. C. (C 14 half-life 5730 + 30). Consequently, the upper prehistoric occupation at Suberde (layer III) might tentatively be dated to a period between 6 200 and 5 800 B. C. or 6 000 and 5 600 B.C. depending whether one uses the longer half-life (Mellaart 1966) or the shorter half-life for radiocarbon.

Conclusion

The overall interpretation of the results of the Suberde excavations will remain tentative until enough evidence becomes available on the nature and the importance of the vegetal subsistence of the prehistoric inhabitants of this mid-seventh millenium village.

Several hypotheses may be proposed. The first one would assume that poor preservation conditions are solely reponsible for the lack of grains in the excavations and that the villagers not only gathered wild plants but had also domesticated plants, most probably cereals.

In this case, Suberde is an unusual example of settled farmers without pottery nor herds who relied for their subsistence in a large measure on the hunting of animals.

The second hypothesis would be that vegetal subsistence most probably limited to the collecting of wild plants was of relatively minor importance and that the major source of subsistance of these settled villagers was hunting.

The relatively unusual but not unique combination of hunting and sedentism which is suggested by the second hypothesis may be interpreted in two different ways.

The first one is that Suberde is a new example of hunters and collectors living in permanent dwellings in an area particularly favorable for these subsistence activities. Natufian open air settlements of the eighth millenium in Israel and a few later sites of settled hunters such as Mureybat in Syria would be slightly earlier examples of this way of life.

The second interpretation would take into account that mud walls and plaster floors similar to those found at Suberde are generally associated with farming villages in southwest Asia and that Suberde is probably late enough to have borrowed this type of architecture from settled agricultural villages.

In this case, Suberde may be considered as an example of a site inhabited by a conservative group of hunters who borrowed certain architectural elements and remained in a region rich in game, game, especially wild sheep, until the site had to be abandonned either because of a rise in the water level of the lake or the depletion of the game ressources.

The closest known site with which Suberde probably had contacts is Çatal Hüyük, at the time of the unfortunately yet little known lower levels. On the basis of the radiocarbon dating, it might be suggested that Suberde might have borrowed its architecture from sites of that period.

Suberde will undoubtedly take its full significance when more ecological and archaeological data becomes available on roughly contemporary sites in the Beyşehir - Sugla region.

The site selected for excavation in 1969 in the Beyşehir basin is believed to be partly contemporary with Suberde and will hopefully provide part of the needed data.

Acknowledgements:

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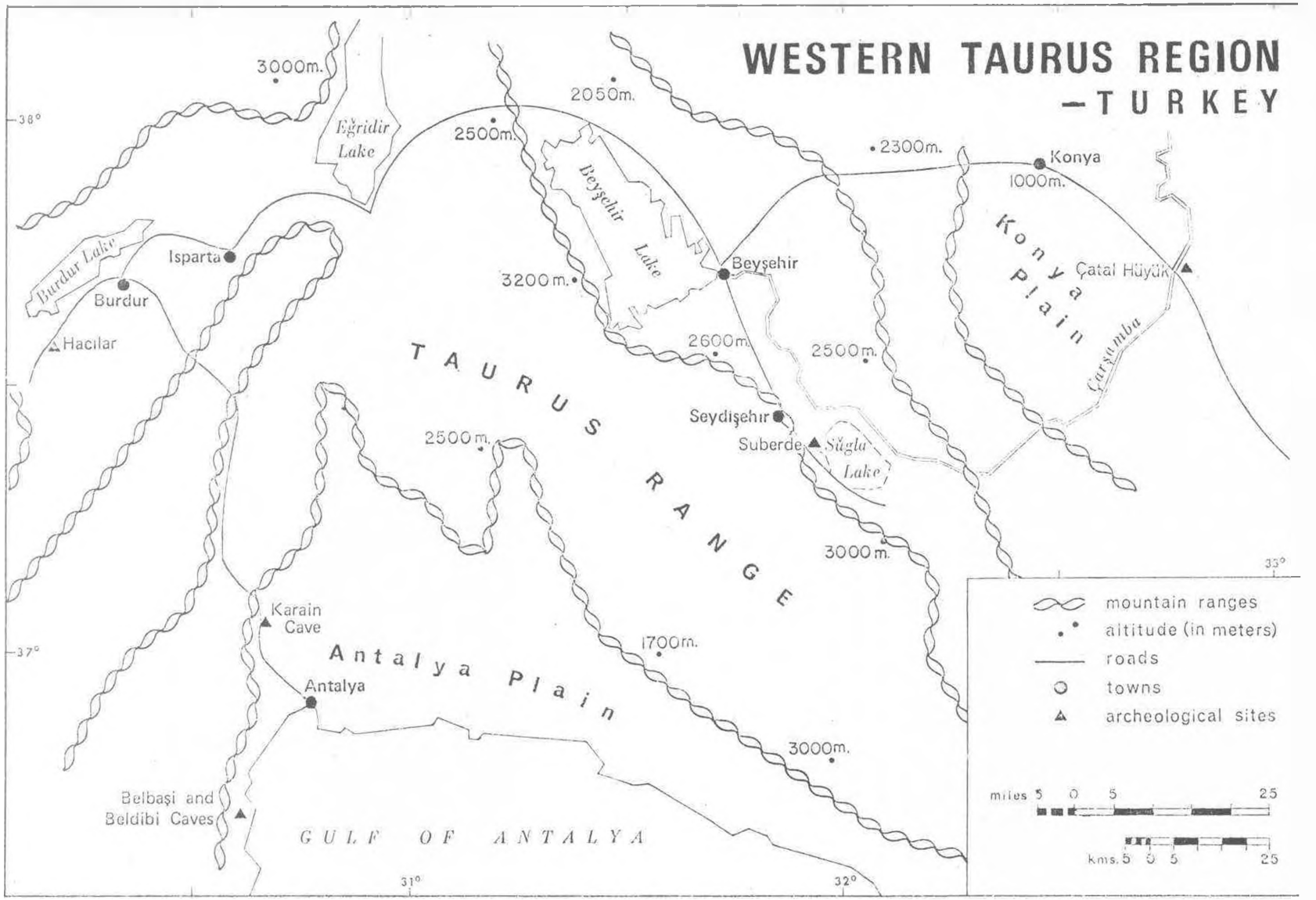

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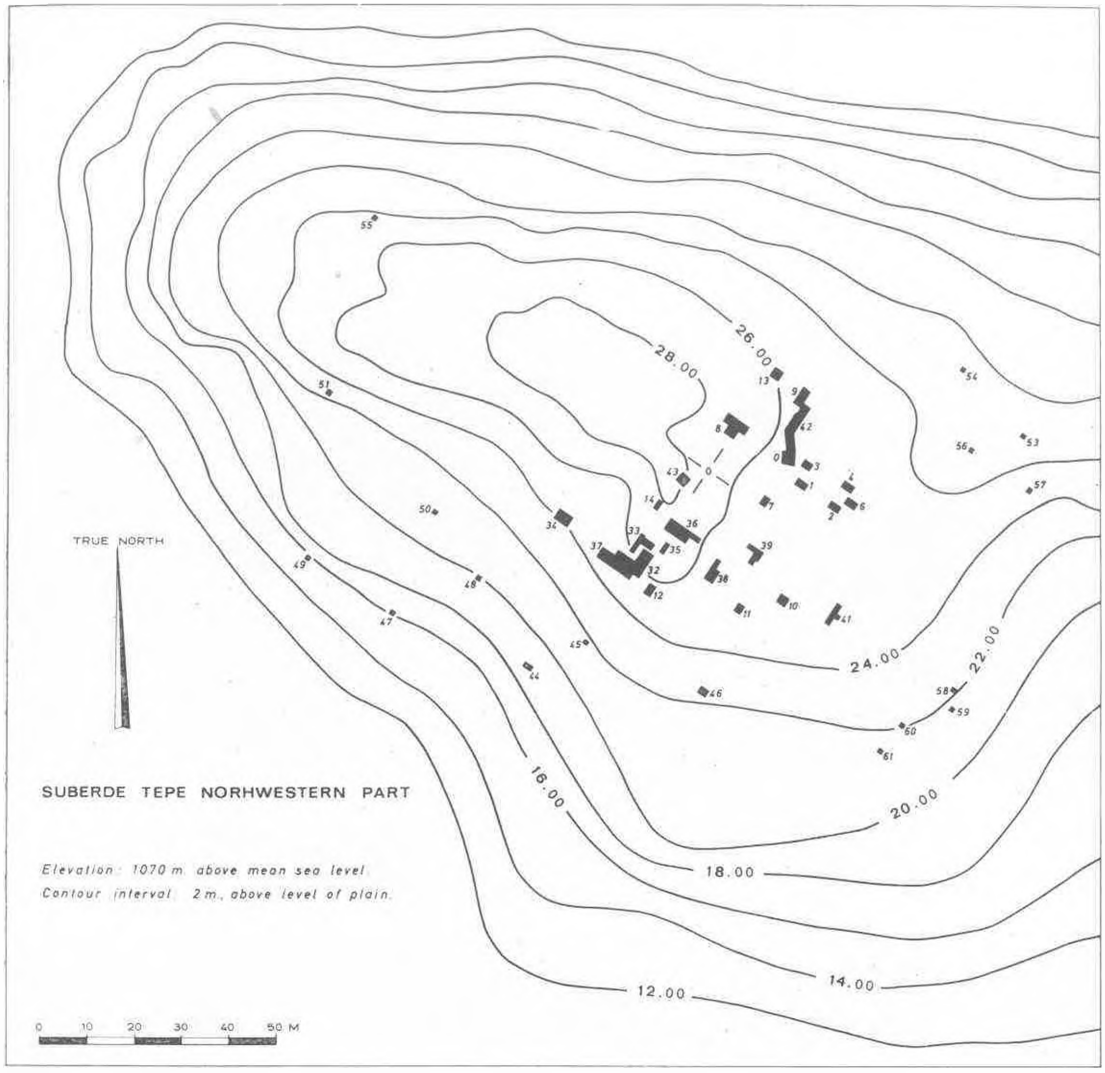
TRUE NORTH
SUBERDE TEPE NORHWESTERN PART
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Contour interval 2 m., above level of plain.
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26.00
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18.00
16.00
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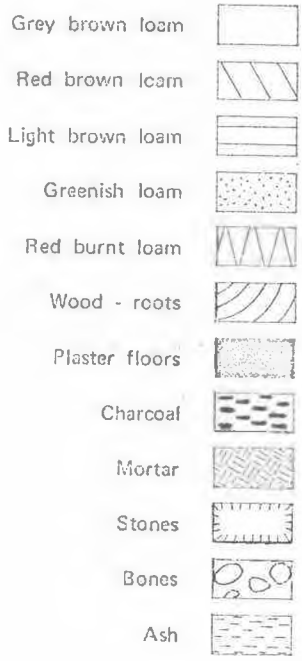
2 - A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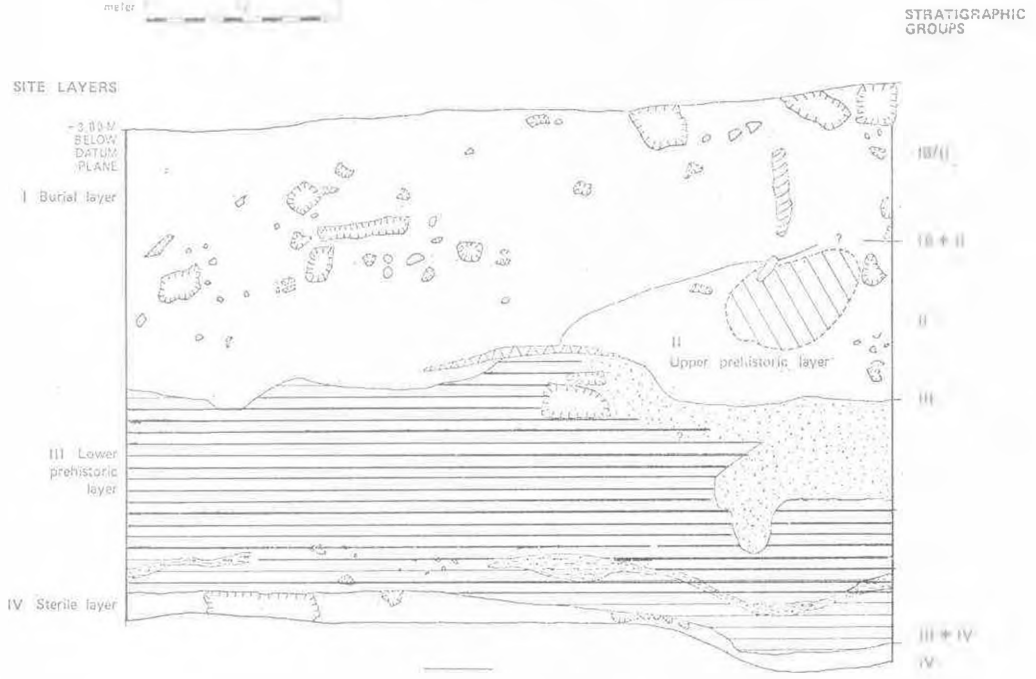
Red brown loam
Light brown loam
Greenish loam
Red burnt loam
Wood - roots
Plaster floors
Charcoal
Mortar
Stones
Bones
Ash

2 - B

SUBERDE – TURKEY

EXCAVATION 42 – SOUTH WALL

meter



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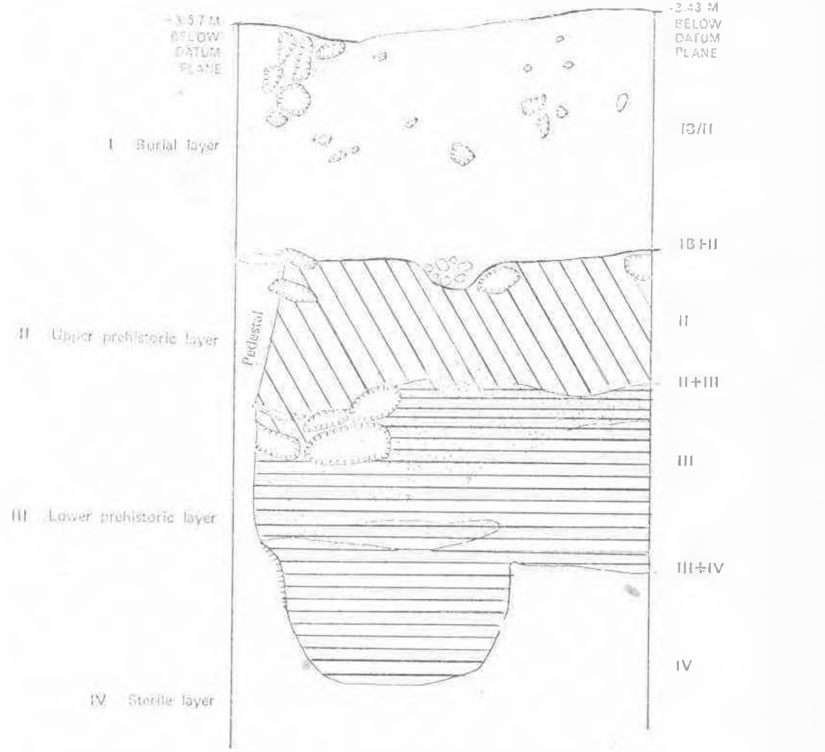
SUBERDE – TURKEY

EXCAVATION 3 – WEST WALL



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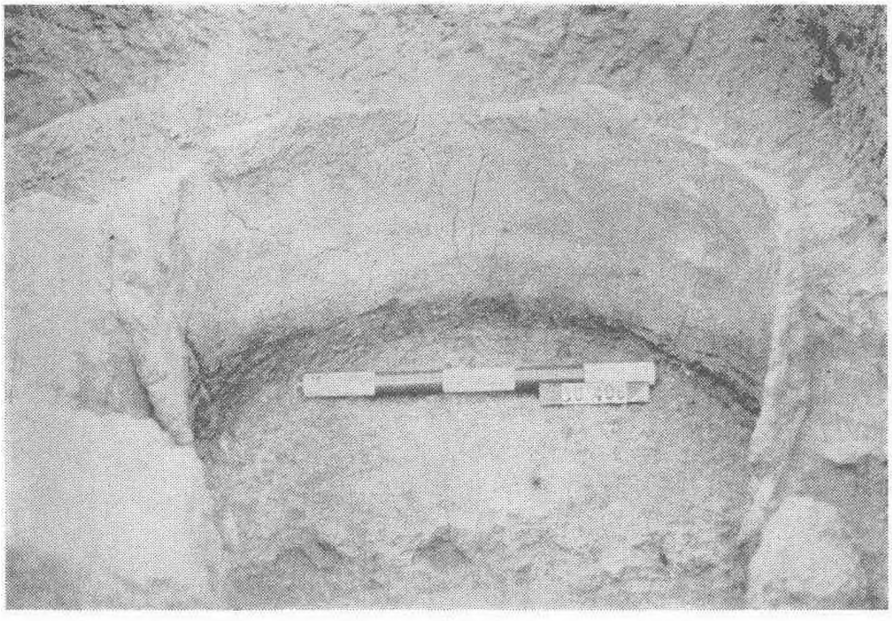

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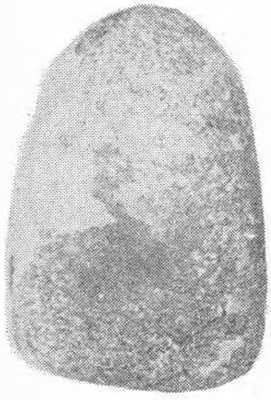

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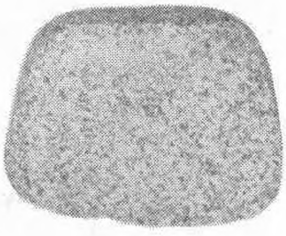

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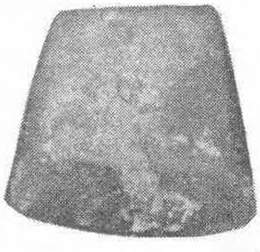

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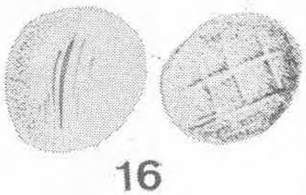

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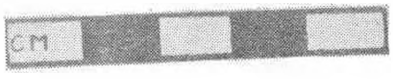

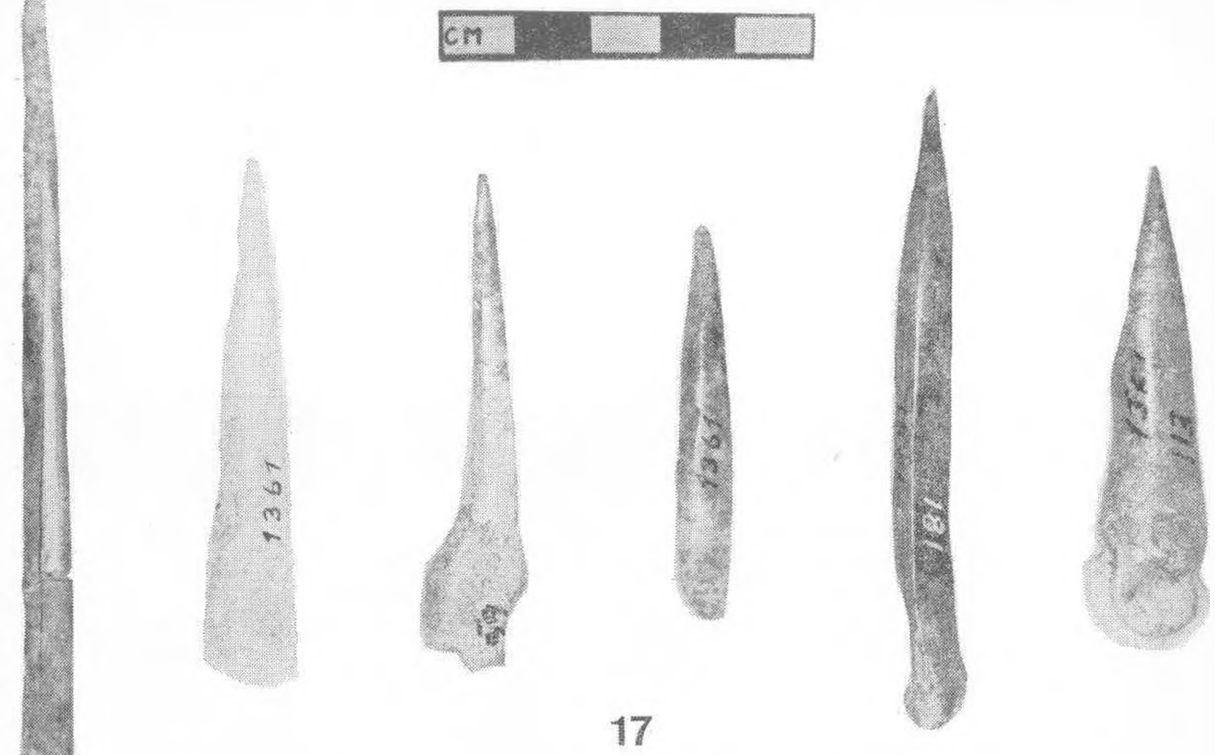

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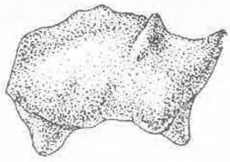

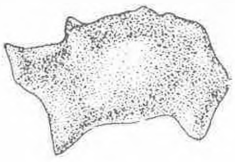

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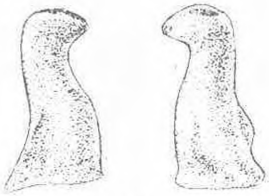

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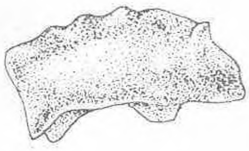

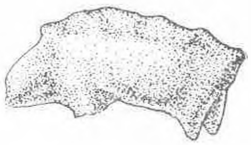

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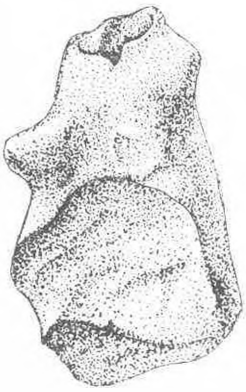

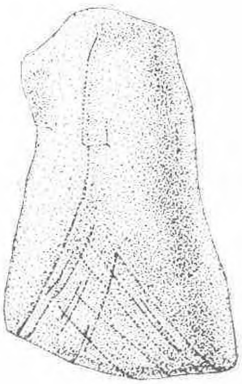

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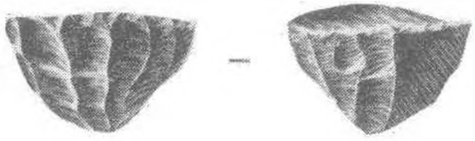

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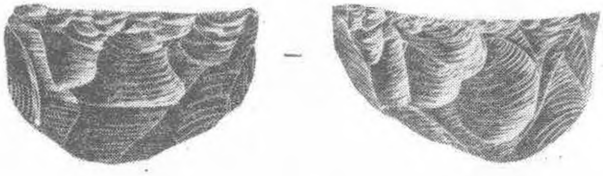

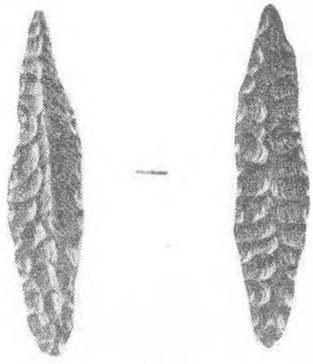

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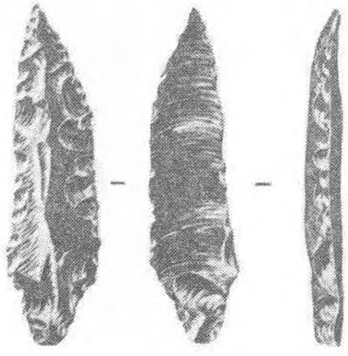

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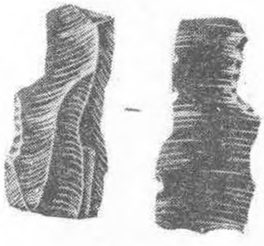

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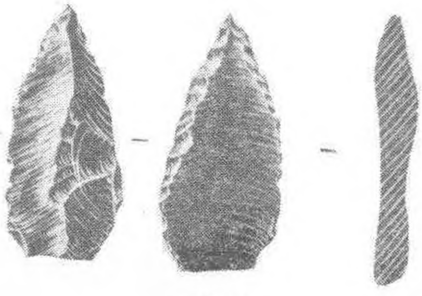

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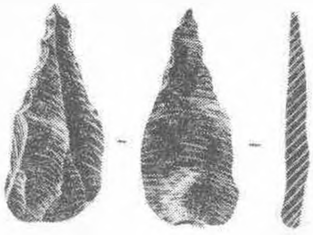

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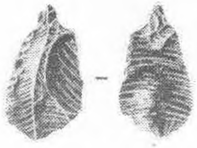

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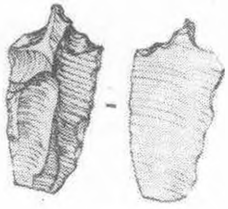

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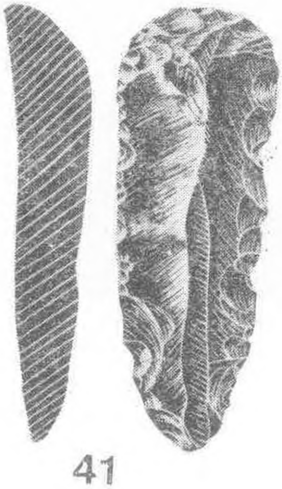

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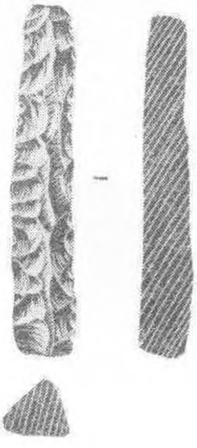

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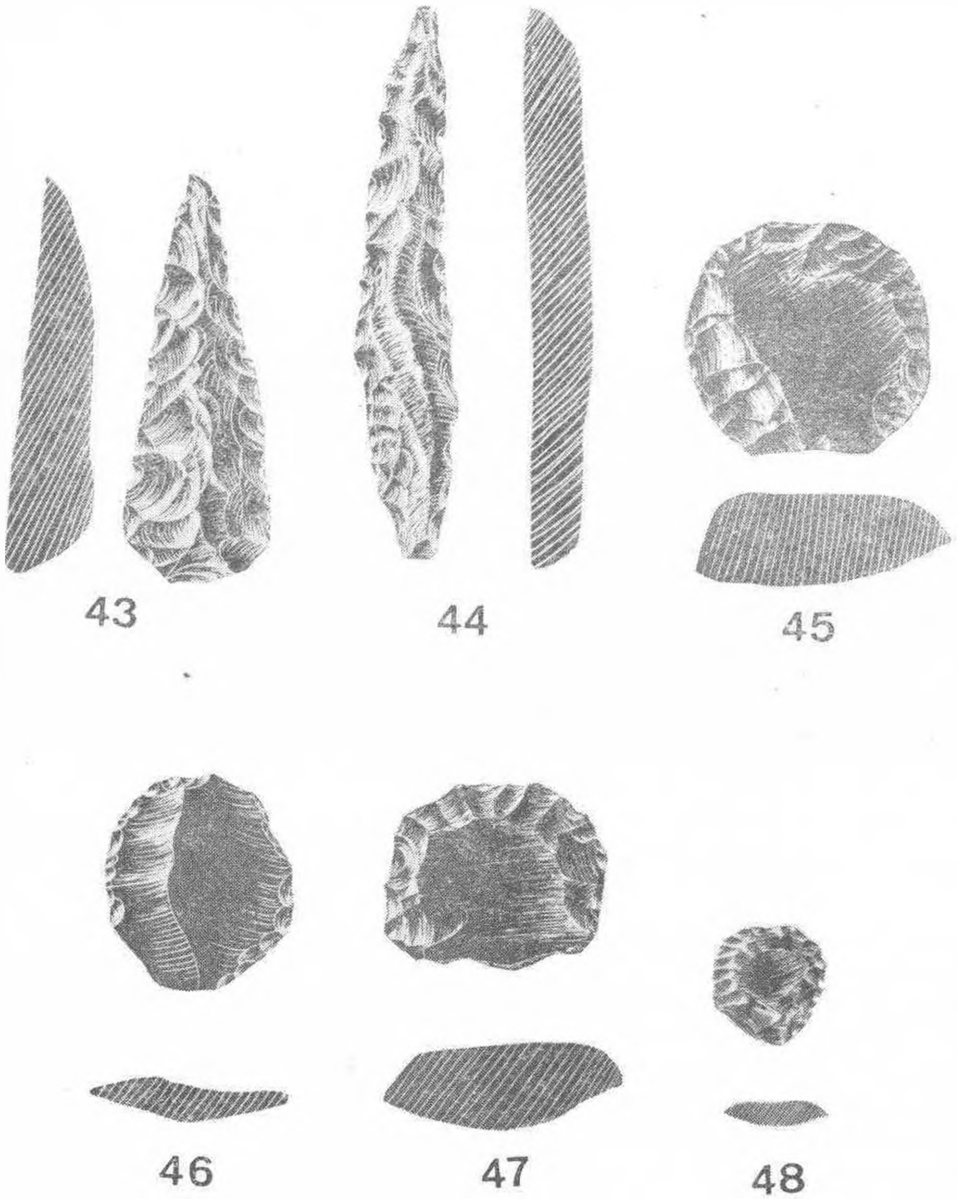
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