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**TOWN AND COUNTRY
IN SOUTHEASTERN ANATOLIA**

VOL. I: SETTLEMENT AND LAND USE AT KURBAN HÖYÜK AND
OTHER SITES IN THE LOWER KARABABA BASIN

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INTRODUCTION

The results presented in this report are the outcome of five seasons of intensive field work (1980-84) conducted around the Chalcolithic and Early Bronze Age (EB) settlement mound of Kurban Höyük in southeastern Turkey. The area investigated lay within a hitherto poorly understood area of the Euphrates valley to the north of Urfa (see Ch. 1, fig. 1.1a). The location of the main area which was to be surveyed, on land of low elevation within 10 km of the projected Karababa/Atatürk Dam, meant that flooding was to be anticipated during the first stages of the rising water level. This was expected during the autumn or winter of 1985 or 1986 and imposed a clear-cut terminus date for the project.

Unlike many surveys conducted in the Middle East in recent years (e.g., Matthers 1981 and Adams 1981) the approach of the Chicago Euphrates Archaeological Survey was not extensive but intensive. The underlying assumption was that by focusing on a very small area, in this case a detailed survey area of 1000 km², it would be possible to produce a quantitative record of settlement change for much of the Holocene. This would allow a synthetic demographic curve to be inferred which in turn could be related to environmental change and evidence of past land use. Although the statistical significance of the recorded settlement fluctuations is small, it is felt that the more comprehensive range of results provided by the detailed survey acts as a useful counterweight to the generalizations obtained by a more extensive approach. Only in the case of one period, the mid-late Early Bronze Age, was it possible to obtain a view over a broad 1000 km² 'area of interest,' and by extending in this manner, it was possible to gain valuable insights into site territories and communication networks (see ch. 4).

Much emphasis was placed upon the discovery and recording of sites that were occupied only for a single ceramic phase, with the result that occupational buildup was minimal. It was not always, of course, possible to prove that such sites were occupied for a single period. However, those 'flat' sites that did yield pottery of well-known type (e.g., those of the third millennium B.C.) usually contained few, or no diagnostic sherds of other periods. Such sites comprised more than two-thirds of the recorded sites (see ch. 3, tab. 3.1) and their inclusion corrects, to some extent, the biases resulting from an overemphasis upon multiperiod mounds and excavations thereon. Even more detailed in its focus was the sampling over many square kilometers of extensive 'field scatters' of artifacts, which appeared to have resulted from the spreading of settlement-derived manure during specific settlement phases. Such field scatters proved to be invaluable tools in the reconstruction of early land use patterns and its catchment boundaries.

The detailed focus of the project did not result from methodological considerations alone but also had to comply with the requirements placed upon the team's activities by the survey permit, which restricted the survey to within a 5 km radius of Kurban Höyük. Although such

a restriction would have been detrimental to the investigation of structures belonging to a single chosen phase, such as defensive systems of the Roman frontier, it did not significantly hinder the present study. Instead we were motivated to scrutinize in detail a single small area. In spite of earlier, rather disappointing results, the final outcome of the survey provided rich insights into some 8000 years of settlement history. The peak in settlement, both in terms of site quantity and aggregate settlement area, during the late Roman-early Byzantine period (fourth-sixth centuries A.D.) corresponded to a phase poorly represented on multiperiod mounds. This result again acted as a counterweight to what would be expected from an extensive survey reliant mainly upon mounded sites.

The successful outcome of the survey owes much to the original project director, Dr. Leon Marfoe, formerly of The Oriental Institute of The University of Chicago, who first envisaged the need for a detailed archaeological and environmental survey of the area. Dr. Marfoe and the sponsoring body, The Oriental Institute, which provided administrative services and logistical support for the Kurban Höyük excavations, are gratefully acknowledged. Funding was provided by matching research grants RO 1528-80 and RO 20556-83 from the National Endowment for the Humanities, private donors, and The Oriental Institute. I wish also to thank the staff and graduate students of The Oriental Institute for freely providing advice during the later stages of the project. I am especially grateful to G. Algaze of The Oriental Institute for providing considerable assistance in the analysis of the Chalcolithic and Early Bronze Age pottery and to G. Stein of the University of Pennsylvania and Gritille excavations for providing valuable and entertaining help in the field. My thanks also go to the field supervisors at Kurban Höyük, especially to M. Ingraham, B. Verhaaren, and M. Evins for keeping me fully informed on all developments during excavations. Much valuable information concerning faunal, floral, and artifactual interpretations was provided by P. Wattenmaker, N. Miller, K. Ataman, C. Snow, C. Öztürk, A. Yener, M. McDonald, and by my wife, Judy Wilkinson. I have absorbed, I hope correctly, many of their results into various sections of this report; the interpretations therefrom are, however, my own. Survey finds were drawn in the field by G. Stein, J. Bacon, T. Rickards, B. Tekkök, and the author. The director of the Urfa Museum, Dr. Adnan Misir, and our representatives from the Ministry of Culture and Tourism, F. Özçatal, E. Yener, A. Eryılmaz, R. Ökcu, and O. Severoğlu, are thanked for providing help and guidance throughout the five years of field work. Dr. Toni Cross, Canan Öztürk and Billur Tekkök, Director and assistant directors of the American Research Institute in Turkey (A.R.I.T.), Ankara, and Dr. David French and Ann Murray, Director and assistant director of the British Institute, are thanked for providing assistance and hospitality in Ankara. The survey was conducted from the excavation team's headquarters within the village of Cümçüme, and it was with regret that I finally left in late August 1984 upon completion of field work. Therefore my final thanks goes to the villagers, especially the Boztepe family, who tolerated our obsessive and often frantic ways during our five summers in their village.

SUMMARY

Detailed survey within an area of 100 km² along the south (left) bank of the River Euphrates (Firat Nehri) in southeastern Turkey provided a fourteen period sequence of settlement covering a span of 8000 years. Population growth during the late Chalcolithic and

the mid-late Early Bronze Age (late fourth and second half of third millennia B.C. respectively) appears to have resulted in the gradual removal of woodland from the area. During the latter peak, a network of nodal settlements developed within cultivable lowlands, and formed part of a moderately well-integrated hierarchy of villages and small towns.

Following a Late Bronze Age-early Iron Age decline in visible remains of settlement, population again increased during the Seleucid-Hellenistic Period to reach a peak in late Roman-early Byzantine times. By this time, all cultivable land was under either extensive or intensive cultivation and the limestone uplands probably formed rough pasture. Little woodland can have existed by this time. There followed, during the seventh-tenth centuries A.D., a remarkable decline in remains of sedentary occupation, which only recovered slightly in the Medieval period. Several hundred years of poorly documented settlement followed which culminated in the establishment, probably by the nineteenth century, of the modern network of settlements. A substantial growth in total cultivated area appears to have resulted from large-scale mechanization during the twentieth century.

The high intensity of land use inferred by the presence of extensive manuring-related artifact scatters, occurred during the late Early Bronze Age and the late Roman-early Byzantine Periods. Both occurrences coincided with peaks in population, as inferred from aggregate site area, and this lends support to Boserup's hypothesis that increases in the intensity of land use result from increases in population and not *vice versa*.

The following fourteen phases are referred to in the text:

- | | |
|------------------|--|
| Period A: | <i>Neolithic</i> (early sixth millennium B.C. ¹). |
| Period B: | <i>Halaf</i> (Kurban Höyük period VIII; late sixth-early fifth millennia B.C.). |
| Period C: | <i>Middle Chalcolithic</i> (Kurban Höyük period VII; mid fifth-early fourth millennia B.C.). |
| Periods D and E: | <i>Late Chalcolithic</i> (Kurban Höyük period VI; remainder of fourth millennium B.C.). |
| Period F: | <i>Early EB</i> (Kurban Höyük period V; early third millennium B.C.). |
| Period G: | <i>Mid-Late EB</i> (Kurban Höyük period IV; mid-late third millennia B.C.). |
| Period H: | <i>EB-MB Transition</i> (Kurban Höyük period III; late third-early second millennia B.C.). |
| Period I: | <i>Early MB</i> (early second millennium B.C.). |

1. This is based on a single uncalibrated ¹⁴C determination (see ch. 4); calibrated this period would extend back into the seventh millennium B.C.

- Period J: *Late Bronze Age (LB) and Iron Age* (late second millennium-early first millennium).
- Period K: *Seleucid-Hellenistic and Roman-Parthian* (late fourth century B.C. to late third century A.D.).
- Period L: *Late Roman-Early Byzantine* (late third-early seventh centuries A.D.).
- Period M: *Early Islamic* (Kurban Höyük period II; seventh-tenth centuries A.D.).
- Period N: *Medieval* (eleventh-thirteenth centuries A.D.).

This volume is the first in a three volume set entitled: *Town and Country in Southeastern Anatolia*. Henceforth in this text, reference to volume two, which covers the stratigraphic and ceramic sequences at Kurban Höyük, will be to KH II, followed by the appropriate chapter or period number. The full reference for this volume is given in the bibliography as Algaze et al., 1990.

CHAPTER 1

KURBAN HÖYÜK WITHIN ITS REGIONAL SETTING

A. PHYSICAL GEOGRAPHY AND COMMUNICATIONS
OF THE URFA-ADIYAMAN AREA

Kurban Höyük is located on the left bank of the river Euphrates (Turkish: Fırat Nehri) where, having emerged from the Anatolian highlands, the river turns abruptly to the west to skirt the Anti-Taurus mountains. It then continues its southern route towards the Syrian steppe and eventually the Mesopotamian basin. The catchment of Kurban Höyük is shared by the modern village of Cümcüme. Both lie within rolling hills of the Urfa-Gaziantep plateau, which in turn forms an extension of the north Syrian Jazirah (figs. 1.1a and b). A more detailed description of terrain and land use types is given below on figure 1.2 and in the accompanying text.



Figure 1.1a. Location of the Urfa-Adiyaman Region Within Turkey.

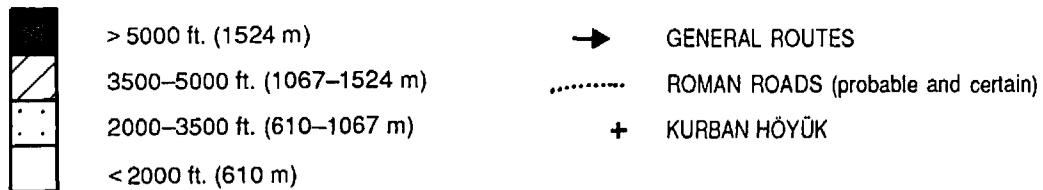
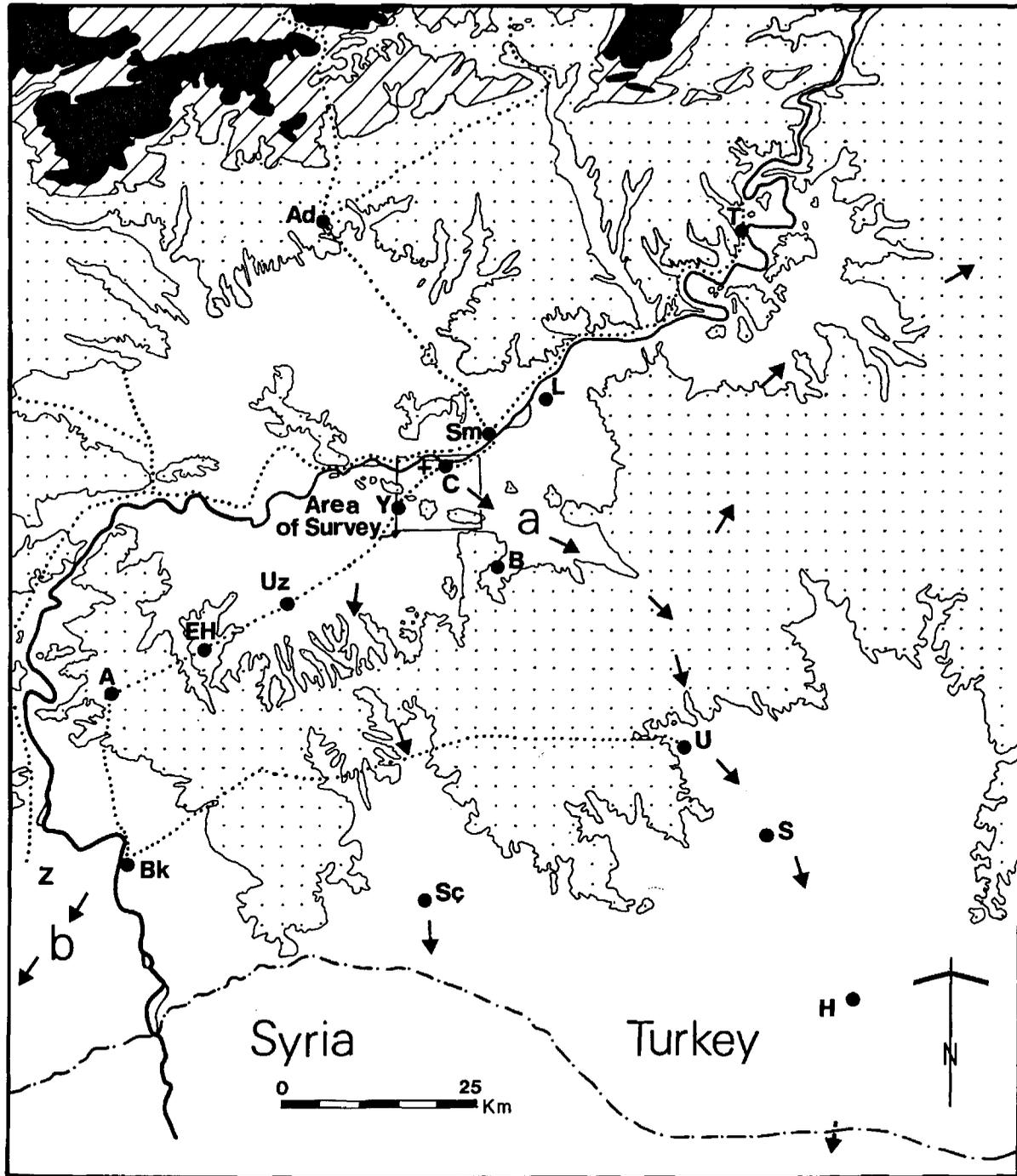
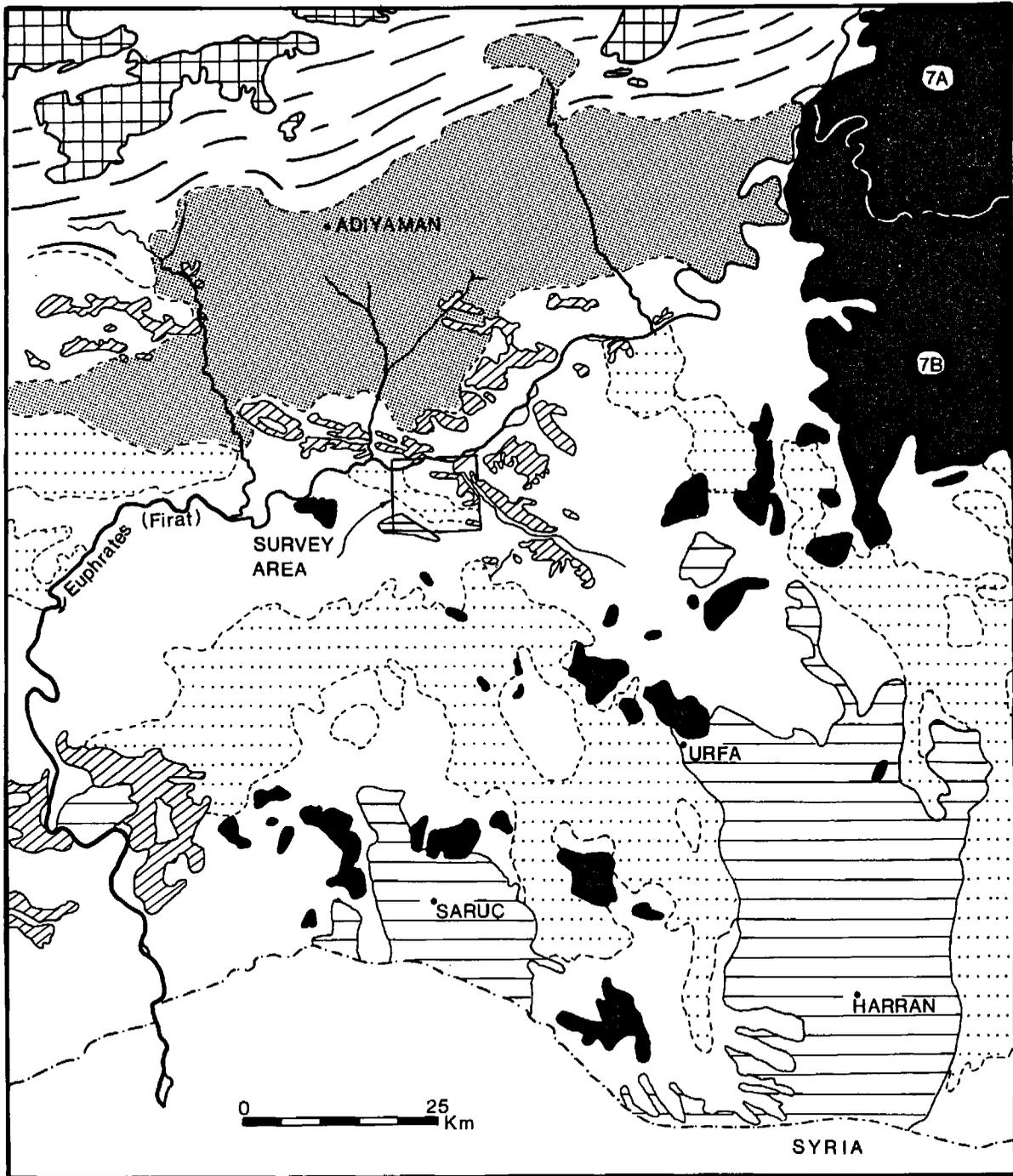


Figure 1.1b. Topography and Selected Ancient Routes of the Urfa-Adiyaman Region. Detailed Study Area Surrounding Kurban Höyük (fig.1.6) is within frame. Key: A = Ank Köy; Ad = Adiyaman; B = Bozova; Bk = Birecik; C = Cümcüme; EH = Eski Hissar; H = Harran; L = Lidar; Sç = Saruç; Sm = Samsat; T = Tille; U = Urfa; Uz = Uzunburç; Y = Yaslica; and Z = Ancient Zeugma.

KURBAN HÖYÜK WITHIN ITS REGIONAL SETTING



- | | |
|---|---|
| <p>1 ANTI-TAURUS MOUNTAINS</p> <p>2 ANTI-TAURUS FOOTHILLS</p> <p>3 PLIO-PLEISTOCENE TERRACE AND SCARPLANDS</p> <p>4 HIGHLY ERODED LIMESTONE</p> | <p>5 UPLAND PASTURES OF URFA-GAZIANTEP PLATEAU</p> <p>6 MAJOR AGRICULTURAL LOWLANDS</p> <p>7 BASALT TERRAIN</p> |
|---|---|

Figure 1.2. Land Systems of the Urfa-Adiyaman Area. Areas of Mixed Land Use on Varied Terrain have been left Blank.

Communications are relatively easy to the south. A first route through the İncesu valley (*a* on fig. 1.1b) leads southeast towards Urfa, which, being at the source of the Balikh river and Harran plain, has direct access via lowland routes to Raqqa and Mesopotamia. A second route (*b* on fig. 1.1b) leads to the southwest through the limestone plateau towards Birecik (ancient Zeugma), Aleppo, the ʿAmuq plain and the Mediterranean coast. The route is well attested for the Roman period by a road that linked Birecik and Samsat via the Severan fort at Eski Hissar and a watchtower at Uzunburc (Wagner 1983). This road attained significance when Osrhoene achieved Roman provincial status in the late second century A.D. The passage of this road through the Kurban Höyük area can be related to the development of Roman occupation (see ch. 5). During Abbasid times the road from Aleppo, the Hamdanid capital, to Samsat (ancient Samosata) and eventually Adiyaman (Abbasid Hisn Mansur) must have approximately followed this route. The road probably passed next to Kurban Höyük where a khan-like building in area D may have formed a way station.

In contrast, communications to the north and highland Anatolia are limited by the Anti-Taurus rising to 8,400 ft above sea level (ASL; 2560 m ASL) and the adjacent highly dissected foothills. Within these highlands, which start some 35 km north of Kurban Höyük, there is little available cultivable land and communications are poor.

Although communications down the Euphrates by boat are easy, land routes along the valley are restricted to both the northeast and southwest. In these areas narrow defiles limit both human traffic and the development of cultivation.

Both topography and communication link Kurban Höyük with northern Syria and isolate it from highland Anatolia. Unlike the Harran basin, however, communications are not directly across flat plains but are guided through fragmented terrain by narrow corridors. Also, settlements are not spread evenly across broad alluvial plains but instead catchments are constrained by topography to form relatively discrete resource areas. As is shown for Kurban Höyük and the adjacent sites, topography and soil type are prime factors in shaping human strategies.

B. LAND SYSTEMS OF THE URFA-ADIYAMAN AREA

Figure 1.2 is a composite map derived from topographic and geological maps as well as various LANDSAT images, notably one for July 2, 1981 (pl. 1, p. 34). Because LANDSAT utilizes false color images, ground control is necessary to determine how image color corresponds to actual ground conditions. This was possible for the immediate agricultural catchment of modern Cümcüme by mapping land use for every year, 1981–1984 (ch. 2). More generalized data were obtained by transects and spot descriptions within the outer catchment of Cümcüme and widespread qualitative observations made from vehicles during more extensive travels. The following seven land systems have been identified.

1. ANTI-TAURUS MOUNTAINS. Greater than 5,000 ft. (ca. 1,500 m).

Source: From 1:500,000 topographic map.

Image on LANDSAT: Mainly off-white and pale yellow but the image includes various dark shades.

Geology: Complex of rock types comprising the Anti-Taurus metamorphic massif including Middle Eocene limestones (the white of Ak Dağ); andesites, spilites and porphyries (dark images) and Permo-Carboniferous limestones (intermediate, light greenish brown image). Localized forest and oak scrub register a red image.

Terrain and Land Use: Predominantly high mountain limestone. Upper slopes are treeless with much bare rock. Oak scrub and some woodland on lower slopes. Access to north is limited to a few deep valleys and passes above 1,500 m.

2. ANTI-TAURUS FOOTHILLS. Mainly 3,000–5,000 ft. (ca. 900–1,500 m).

Source: LANDSAT. Checked against 1:500,000 geological map.

Image on LANDSAT: Various shades of brown with lineations corresponding to general trend of relief elements.

Geology: Mainly rocks of the orogenic flysch zone (Tolun 1975): Marls, clays, and ultra-basic rocks but also including Eocene and Cretaceous limestones.

Terrain and Land Use: Low mountains with occasional bare rock exposures. Scattered trees and localized cultivation and pasture.

3. PLIO-PLEISTOCENE TERRACE AND SCARPLANDS.

Source: LANDSAT. Also corresponds to map units p1Q and mu on 1:500,000 geological map.

Image on LANDSAT: Black and pale brown rectilinear patchwork of fields cut by right bank tributaries of the Euphrates. Localized white scars result from accelerated erosion into white Eocene limestones which in places crop out beneath the Plio-Pleistocene sediments.

Geology: Sandstones, marls, and conglomerates form this sedimentary apron beneath the Anti-Taurus mountains. They are now cut into by three major right bank tributaries of the Euphrates: from west to east: Gök Su; Kalburcusuyu and Kahta Çay. These have cut through the later sediments to expose wide areas of Upper Miocene rocks.

Terrain and Land Use: Flat terrace surfaces comprise much of area and today 60–90 percent of such areas appear cultivated. This seems to be mainly dry-farmed wheat as well as lentils, sesame, and tobacco. Deeper valleys are irrigated mainly for rice in larger valleys, but vegetables assume dominance in smaller valleys and around springs. The three main tributaries receive copious spring flood discharges from the mountains (see hydrograph for Kahta Çay, fig. 1.3) in contrast to left bank tributaries. The three major tributaries appear to be aggrading their channels in contrast to the smaller left bank tributaries. One such tributary, the İncesu Deresi (near Cümçüme), has a meager discharge and has cut some 3 m into the valley floor.

4. HIGHLY ERODED LIMESTONE (see pl. 2a, b, p. 35).

Source: LANDSAT only.

Image on LANDSAT: White image, frequently dendritic or oriented along valleys or scarps. Two main areas on LANDSAT: In Samsat area extends total of 45 km East-West and 40 km North-South. A second slightly smaller area occurs around Birecik, the main Euphrates crossing. A third area adjacent to the Anti-Taurus foothills appears less white on the image but otherwise is similar to the other two areas.

Geology: Corresponds to both Eocene and Cretaceous limestones in the Samsat-Kurban Höyük area and area near the foothills; near Birecik it is restricted to Eocene rocks.

Terrain and Land Use: High drainage density on chalky limestone. Both ground and LANDSAT study suggest that this terrain is not confined to rocks of a given age, but occurs anywhere that actively eroding tributaries are developed on soft, chalky limestone. Gully eroded land is less clear when developed on other rock types and is not shown on the accompanying map (fig. 1.2). Of little agricultural value, although the mapped areas contain small parcels of pasture and cultivation which include some vineyards and irrigated enclaves. A more detailed discussion of the history and development of gully land is given below, pp. 26–9.

5. UPLAND PASTURES OF URFA-GAZIANTEP PLATEAU

Source: LANDSAT only.

Image on LANDSAT: Pale brown image with moderate drainage density showing up as dendritic drainage net. No evidence of intense gully erosion such as land system four, but this might be revealed by more intense ground study. Around the Saruç and Harran basins, this terrain type is well defined by the edge of cultivated fields. Elsewhere, field areas are contained within this terrain type and such areas have been left blank. Near Bozova and around some of the northern and western margins the boundary is less well-defined where cultivation, probably of quite recent development, has encroached on to former upland pasture.

Geology: Mainly on Eocene limestones above 2,000 ft. (600 m).

Terrain and Land Use: Mainly rolling limestone hills with rough pasture and some scrub, usually hawthorn. Normally very dry in summer. Bare soil and rock outcrops are quite common, but in lower parts or where soils are deeper, these areas have been encroached by cultivation. Where this can be recognized on images the area has been left blank. The rare presence of oak trees suggests that oak woodlands may have formerly been more common and may have constituted a more continuous forest cover (for example as shown on van Zeist's palaeo-vegetation map, 1982, fig. 14.13). Prior to the rapid extension of cultivation in the twentieth century it is likely that such pasture covered a much wider area.

6. MAJOR AGRICULTURAL LOWLANDS

Source: 1:500,000 geological map; Holocene and recent alluvial sediments. Checked using the boundaries of the main areas of lowland cultivation on LANDSAT.

Image on LANDSAT: The two main basins are Harran and Saruç. In the former, fields within the cultivation mosaic are larger, and red images, mainly resulting from green vegetation are rare. This implies that irrigated crops are also rare; a brief field visit to the area in 1982 supported this finding. Field systems surrounding settlements are distinguishable; for example, Harran is surrounded by a radiating system of strip fields within 3–4.5 km radius. In the Saruç basin, fields are smaller and green vegetation (red image), possibly representing irrigated crops, is common. Other LANDSAT images¹ reveal light spots within these two basins measuring 300–1,000 m in diameter. These are from 1–4 km apart and may represent either modern or ancient settlements, without detailed field verification it is impossible, at present, to differentiate these two classes. Two smaller basins further north are again defined by recognizable field mosaics.

Geology: Although mapped as Holocene and recent alluvium these in fact include Pleistocene accumulations as well.

Terrain and Land Use: According to Brice (in Lloyd and Brice 1951), except for a narrow belt of well irrigation along the Jullab river and where there is a little well irrigation, crops in the Harran basin rely on direct rainfall. This nourishes thin crops of barley, wheat, and pulses; millet is grown in

1. Kindly provided by Dr. Richard Ellis, Bryn Mawr College, Pennsylvania.

favorable years. The Harran plain is dotted by occupation mounds three to four miles apart (5–6.50 km) and modern villages one to two miles apart (1.6–3.20 km). The Akçakale plain appears to have a similar density of ancient and modern settlement and it is clear that both represent major early centers of settlement and agriculture. Although smaller, the other basins must have formed local centers of settlement. For example at Yaslica, near Kurban Höyük, occupation has been traced back to Halaf times (Site 18, *App. A*).

7. BASALT TERRAIN

Source: Both 1:500,000 geological map and LANDSAT.

Image on LANDSAT: Extensive black or gray-brown image. Can be subdivided into:

7a) uncultivated land

7b) land divided into large fields yielding a yellowish brown-black mosaic.

Isolated basalt residuals are visible to the west of the main basalt outcrop. Because other terrain types, including parts of 3), produce a black image; the final mapping of basalt exposures has relied upon the 1:500,000 geological map.

Geology: To the northeast a virtually continuous mass of olivine basalt flows forms a sheet over Eocene limestone, whereas to the west similar basalts merely form caps over upstanding limestone residuals. The basalts comprise numerous individual flows, some of which are of vesicular basalt. Although vesicular basalt was used for quern manufacture at Kurban Höyük it was not possible to trace exact sources.

Terrain and Land Use: The main outcrop in the northeast is plateau strewn with numerous basalt boulders. Land use is mainly dry-farmed cereals and other crops, with localized irrigation around springs and small streams. The apparently uncultivated area labeled 7A on figure 1.2 has not been visited. The isolated outcrops to the west appear to be uncultivated hill tops.

Areas left blank are other terrain types and land uses. Mainly these appear to be areas of mixed cultivation and pasture which yield an indefinite LANDSAT image. They include Euphrates terraces, cultivated uplands, and smaller enclaves of cultivated lowland.

C. CLIMATE

The climate of the Urfa-Gaziantep region is a dry, semi-continental variant of the Mediterranean climate (Dewdney 1971). Summers are dry and very hot with mean monthly temperatures in July of around 30° C (86° F) in both Adiyaman and Urfa (fig. 1.3). Summers are terminated by the first significant autumn rains which fall in October. These lead into cool, wet winters characterized by a mean monthly temperature in January of 4–5° C (40–41° F), but which can result in daily minimum temperatures averaging around -2.6° C (ca. 27° F). Frosts (ca. 30 per year) are common, the actual incidence being dependent upon topography. Much precipitation falls as snow, which remains on the ground for 10–30 days a year (Dewdney 1971), but again this is very dependent upon topography.

The wet season ends in May, which is the last month with reliable rainfall (fig. 1.3). The generally warm dry weather of late May-early June enables cereals to ripen by early June, the usual harvest time around Kurban Höyük.

The climate can be classified as semiarid, but in detail varies from a moist, sub-humid climate² along the Anti-Taurus fringes (Adiyaman-Kahta area) through a dry, sub-humid

2. Defined according to Thornthwaites' moisture index (Erinç 1950, 224-35).

TOWN AND COUNTRY IN SOUTHEASTERN ANATOLIA

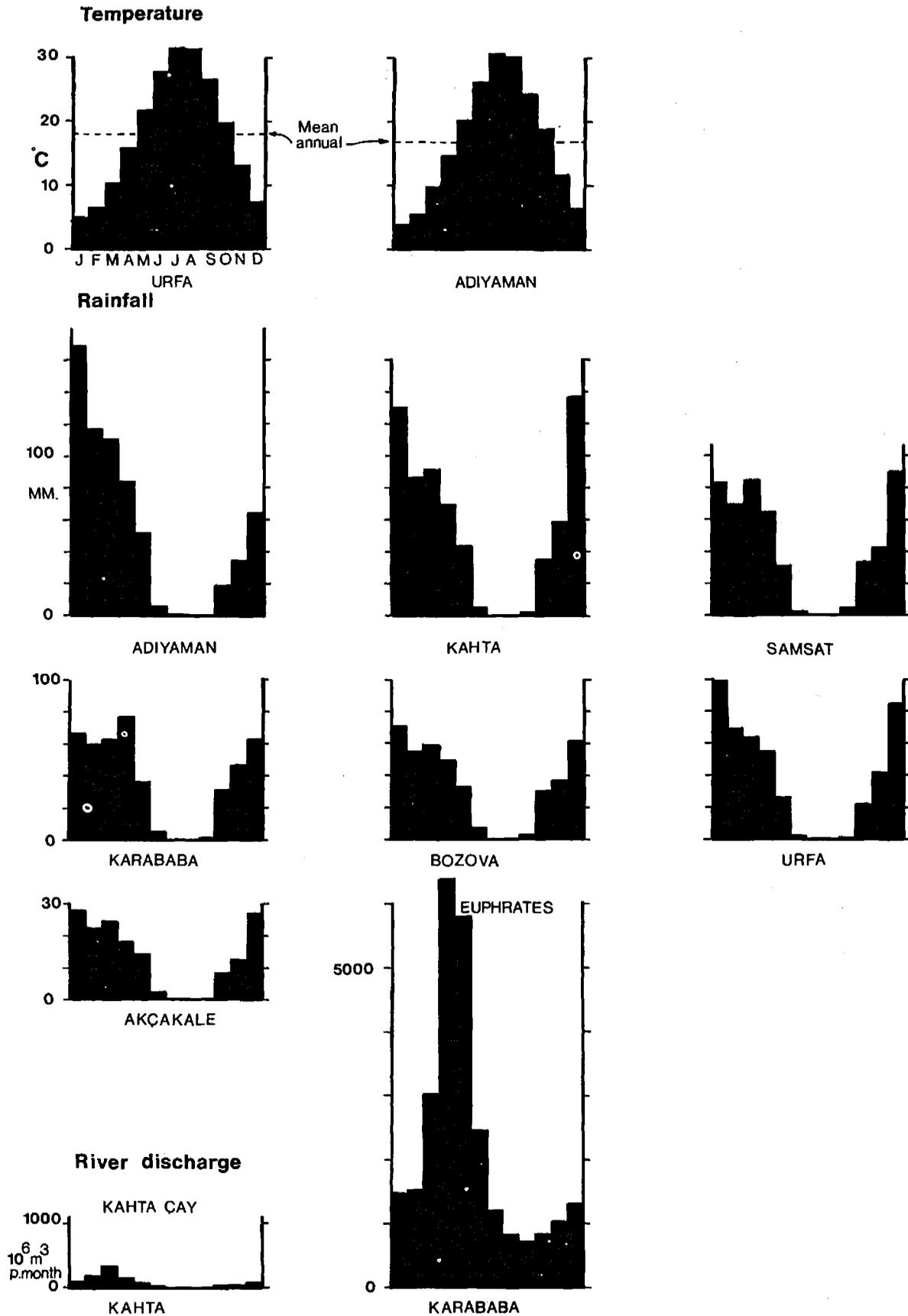


Figure 1.3. Mean Monthly Temperature and Mean Monthly Rainfall for Selected Settlements in the Urfa-Adiyaman Area. Mean Monthly Flow for Kahta Çay and the Euphrates River.

climate along the Euphrates to a semiarid climate between Bozova and the Syrian border (Erinç 1950). The mean annual rainfall for Bozova and Samsat, the nearest meteorological stations to Kurban Höyük, is 407 and 470 mm per annum respectively. The regional variation in moisture regime results from orographic cooling of westerly depressions which are funnelled to the south of the Anatolian high plateau by the high pressure air masses which prevail during the winter months. As a result of these weather patterns, the Anti-Taurus mountains and foothills receive more than double the rainfall of the Syrian-Turkish border near Harran. The decrease in rainfall away from the mountains is particularly rapid between the foothills and the Euphrates. This is echoed by the land use: for example, tobacco grows to the north of the river but not to the south where the climate is too dry. The annual fluctuation of the semiarid area is considerable and in seven out of eighteen years between 1928 and 1946 the entire area of Urfa province was classified as semiarid (Erinç 1950).

Although classed as semiarid, the entire area shown on figure 1.1b falls within the area which in most years can produce cereals without irrigation. The southernmost station however, Akçakale, with a mean annual rainfall of 317 mm, falls very close to the limit of dry-land farming. Wallén (1967) defined the limit of dry-land farming as consisting of 240 mm mean annual rainfall, with an inter-annual variability of 37 percent. The two factors, proximity to the limit of dry-land farming (which runs through northern Syria in most years) and fluctuations in mean annual rainfall, indicate that some years will produce very low crop yields throughout the region.

D. GEOMORPHOLOGY AND SOILS: THE DEVELOPMENT OF THE PHYSICAL LANDSCAPE

INTRODUCTION

It is crucial during archaeological surveys to establish how the physical landscape has changed through time. Exogenous environmental change and local anthropogenic factors can initiate ecological changes which in turn influence patterns of erosion and sedimentation. As a result, the modern landscape is not necessarily that witnessed by earlier inhabitants—indeed many former settlements may have been obscured by deposition or expunged by erosion. After a brief introduction to the geological framework and Pleistocene sedimentary history, areas of dynamic and stable land surfaces will be pinpointed and a tentative history of their development will be offered. Particular emphasis is placed upon factors pertinent to the history of land use, siting of ancient settlements, and the interpretation of the archaeological record.

THE SOLID GEOLOGY

The terrain around Kurban Höyük is developed on two limestone units. The older is a white chalky Upper Cretaceous limestone which underlies the area of river terraces and also crops out along the İncesu corridor. The younger, a pale brown sandy or cherty limestone laid down during lower Eocene times, forms the uplands which extend to the south of the river terraces (fig. 1.4). Structurally the area belongs to the north Syrian foreland; rocks are gently folded with fold axes oriented NW-SE. These are paralleled by

faults; one bounds the southern edge of the aforementioned limestone uplands and two others define the İncesu valley, which appears to be a faulted trough.

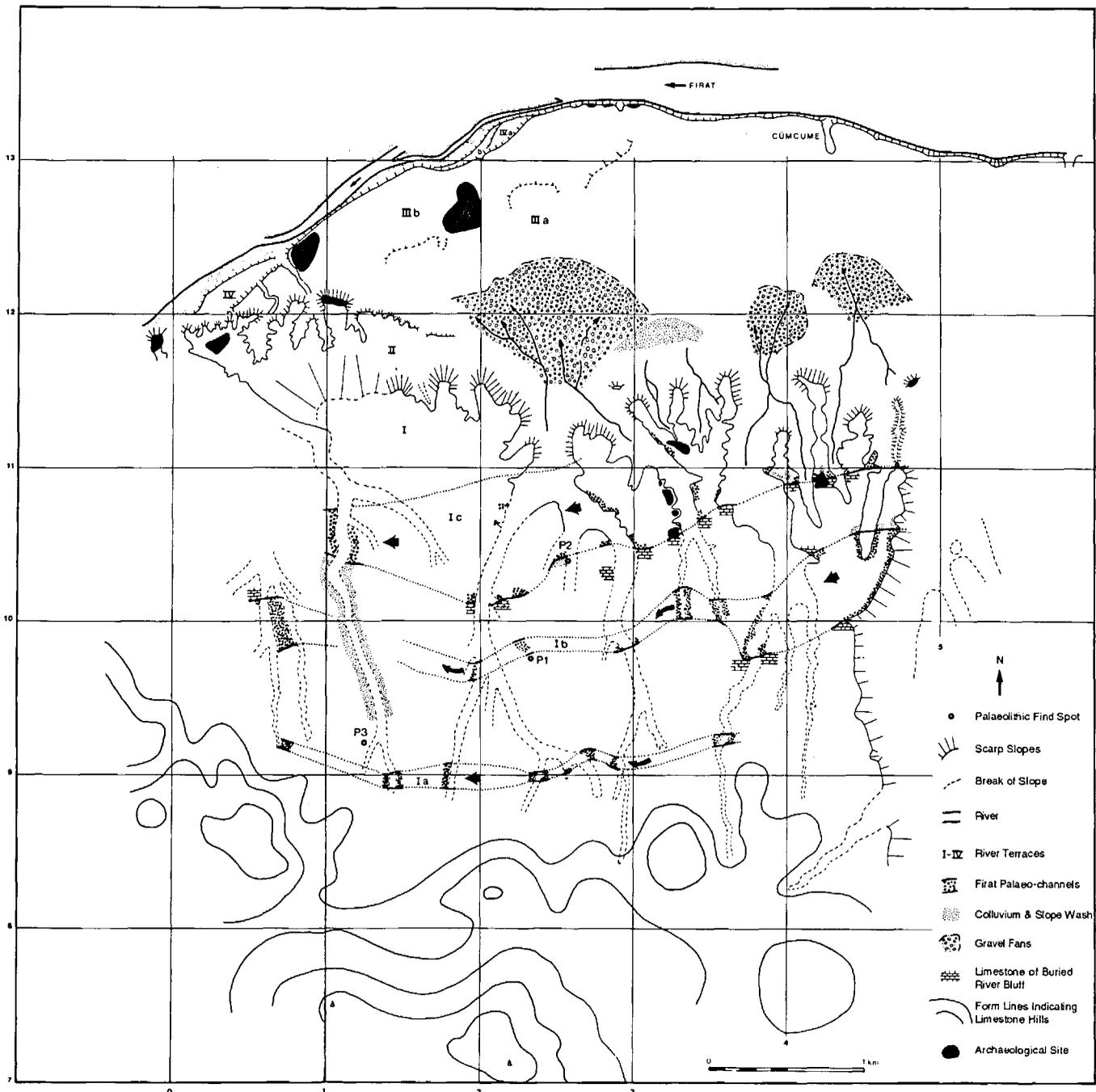


Figure 1.4. Terrace Geomorphology of the Kurban Höyük Area.

THE PLEISTOCENE GEOMORPHOLOGY

During the Pleistocene and Holocene periods the Euphrates river incised through some 160 m of limestone to form the present trough, which is flanked by a succession of fluvial terraces. The sedimentary veneer of such terraces indicates stages in the erosional history of the valley and varies according to the sedimentary source.

Euphrates sediments reflect the varied geology of the Anatolian highlands. Gravels include abundant basic igneous rocks as well as occasional metamorphic and sedimentary

rocks, and the overall hue is dark or olive gray. In contrast, locally derived sediments are dominated by limestone and its decay products and small quantities of chert. Coarse facies are normally light in color whereas fine sediments are pale brown to white, if eroded directly from limestone, or are reddish brown if derived from soils which once veneered the limestone uplands. Distance of travel can be roughly determined by the above criteria along with sedimentary properties, and this allows the following sediment classes to be defined:

- a. Euphrates gravel, sand and silt: dominantly Anatolian assemblage.
- b. Tributary valley fluvial gravel, sand, and silt: mainly from the İncesu Deresi. Dominated by limestone products and some chert.
- c. Fan gravels from tributary valleys up to 5 km long. Mainly limestone products, a little chert plus Euphrates gravels re-sorted from river terraces.
- d. Local colluvial deposits blanketing terraces and old river bluffs. Usually traveled less than 1 km. Limestone gravels, sands, and silts washed from adjacent slopes and reddish brown clay loams ultimately derived from the limestone uplands.
- e. Occasionally in valleys cut in terrace III (see below) and near archaeological sites, brown stony loams form sedimentary bodies. These are usually Holocene in date and frequently result from human activity on adjacent slopes or plowing.

The deposits of the Euphrates blanket a succession of terrace steps that can be approximately ordered from the highest (to the south on figs. 1.4 and 1.5b; pls. 3 and 4a, pp. 36–7) and oldest, to the lowest (to the north along the present Euphrates) and the youngest. Occasional sections indicate that this simple sequence is complicated by aggradation phases where earlier sediments underlie a succession of older ones. The geomorphology of the fluvial terraces can be summarized with reference to the following sequence corresponding roughly in date with terrace III, exposed near the Karababa dam (fig. 1.5a):

1. Erosion platform and old river bluffs cut into limestone.
2. Euphrates gravel lying in places directly on the eroded platform. These are overlaid by progressively finer Euphrates sands and silts with intercalated gravel lenses.
3. The abrasion of bluffs by the river is followed by the accumulation of angular limestone slope deposits which interleaf with the fluvial gravels. Locally, these can grade into fan gravels deposited by seasonal streams.
4. Type 3 deposits can grade laterally into finer light-colored chalky gravels, sands, and silts which accumulate on gentle slopes over pre-existing bluffs (also 6 and 8, fig. 1.5a). In the vicinity of Kurban Höyük these are more commonly reddish brown clay loams.
5. Occasional stable episodes indicated by brown loamy palaeosols result either from vegetation growth on the slopes or from stable phases caused by the river migrating to the opposite side of the flood plain (a later stable phase is indicated by 7). In this sequence the final aggradation comprised a brown colluvium which may in part include soil wash initiated by cultivation of adjacent slopes in antiquity (9, fig. 1.5a).

River terraces and their deposits were mapped within a selected 30 km² area around Kurban Höyük (fig. 1.4) by tracing limestone bluffs and Euphrates gravel exposed along a series of incised valleys. Such palaeo-channels, which attain widths of up to 500 m, appear to be residuals that remain after the bulk of channel deposits has been erased by later erosion (cf. the truncated gravels on fig. 1.5a).

The upper three palaeo-channels (1a, 1b and 1c, fig. 1.4), themselves blanketed by dipping beds of reddish-brown colluvial loam, occupy a single major terrace bench—terrace I. To the west a slightly lower terrace (II) forms a narrow residual leading towards the Euphrates Gates. Terrace III, occupying the entire left bank below terrace I, can be subdivided into a and b. This terrace has been the main focus of settlement and agriculture since prehistoric times and further details of its soils are given below (pp. 16–21).

Long sections visible along the Euphrates bluffs (fig. 1.5c) demonstrate approximate accord between altitudes of terrace flats IIIa and IIIb and their respective channel gravels. On the surface, subphases a and b are separated by gentle bluffs 3–6 m high (fig. 1.4). Surface topography within any one terrace varies as a result of differential aggradation of colluvium which, in places, interleaves with Euphrates sediments (fig. 1.5c: location 12 and near Kurban Höyük). Two tributary channels, 14, which have been filled, dated to the Middle-Upper Pleistocene by Levalloisian-Mousterian lithics (which also included blade forms), and 20, filled finally during the Holocene, cut the fills of IIIa and IIIb respectively. Evidently both IIIa and IIIb accumulated during the Middle or Upper Pleistocene and were stable surfaces by the fifth millennium B.C. when Kurban Höyük was first occupied. Some time after the fifth millennium, silts and sands of terrace IV aggraded to a little above present flood level.

The Pleistocene terrace sequence signifies a progressive incision through some 160 m of chalky limestone to produce the present 6 km wide trough. This in turn leads downstream into a major gorge of the Euphrates River which cuts into the more resistant Eocene limestone.

The detailed interpretation of Pleistocene and pre-Pleistocene geomorphology of the area is beyond the scope of the present volume. However, the absence of pre-terrace 1a Euphrates-type sediments is conspicuous and might be related to the massive outpourings of Pleistocene basalts that originally capped the uplands north and northeast of Urfa (fig. 1.2). Prior to this phase, more localized drainage may have prevailed, possibly along channels flowing southwards from the Anatolian highlands as proto-Balikh or proto-Habur rivers. The Euphrates began its present course, only when basalt flows concentrated and diverted rivers to the southwest.

E. THE DEVELOPMENT OF SOILS AND TERRAIN TYPES DURING THE HOLOCENE PERIOD

The soils of the area can be classified as Calcic Xerosols (F.A.O. 1977, map 7.1) but they vary according to the geological or sedimentary sub-stratum upon which they have developed. Usually the older, higher soils of terrace I are slightly redder than those of terraces II and III (tab. 1.1). In turn, the soils of terrace IIIa are redder than those of IIIb although minor soil variations relate to sedimentary history (see below). Soil carbonates,

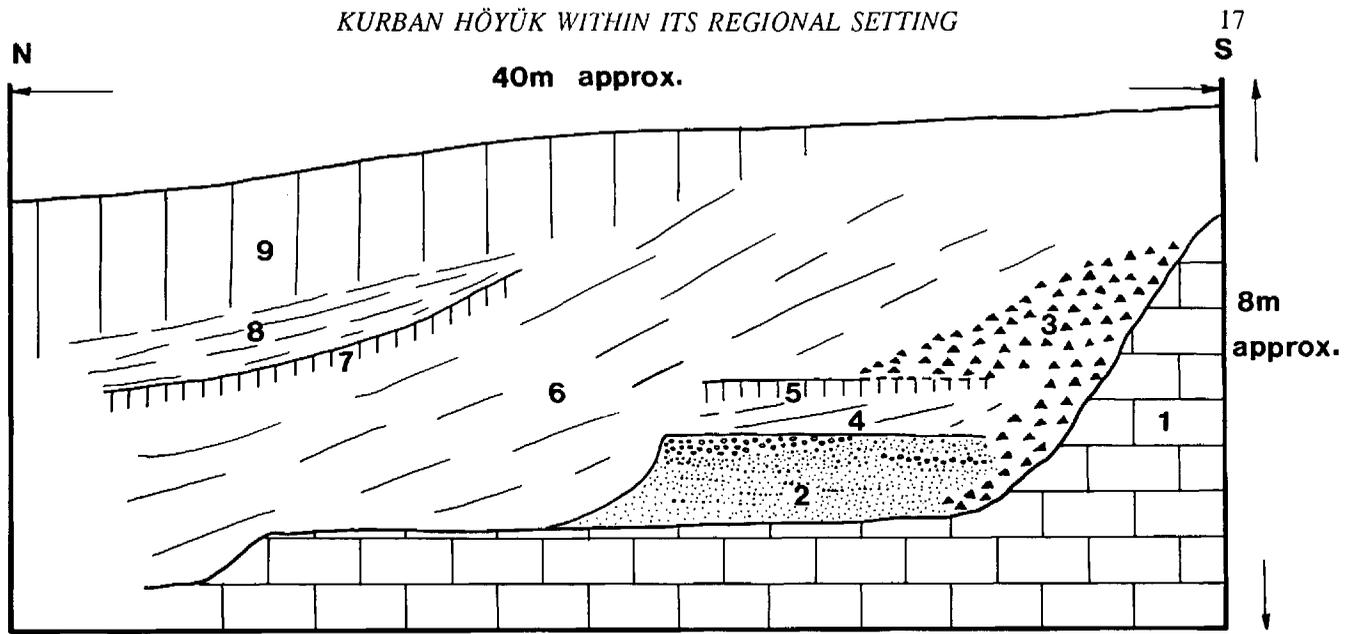


Figure 1.5a. Section Across the Euphrates Terrace near the Karababa Dam. Key: (1) Limestone Platform and Bluffs; (2) Euphrates Sediments; (3) Limestone Colluvium and Talus; (4, 6, 8) Finer Limestone Colluvium; (5, 7) Palaeosols and/or Stable Episodes; and (9) Final Phase of Soil Wash.

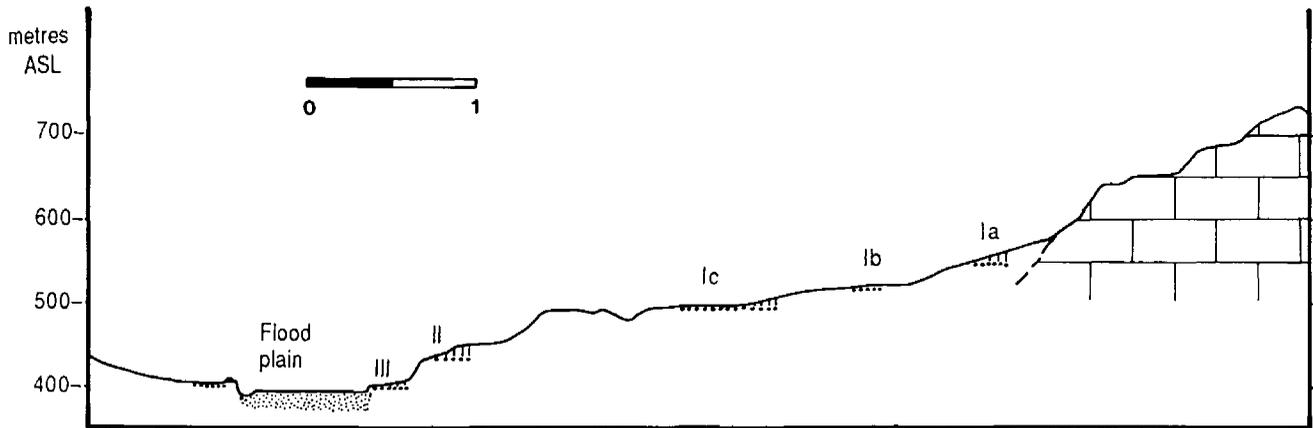


Figure 1.5b. Section through Euphrates Terrace near Kurban Höyük from Limestone Uplands in the South to the Euphrates River in the North. Terrace IV is Omitted because of the Small Scale.

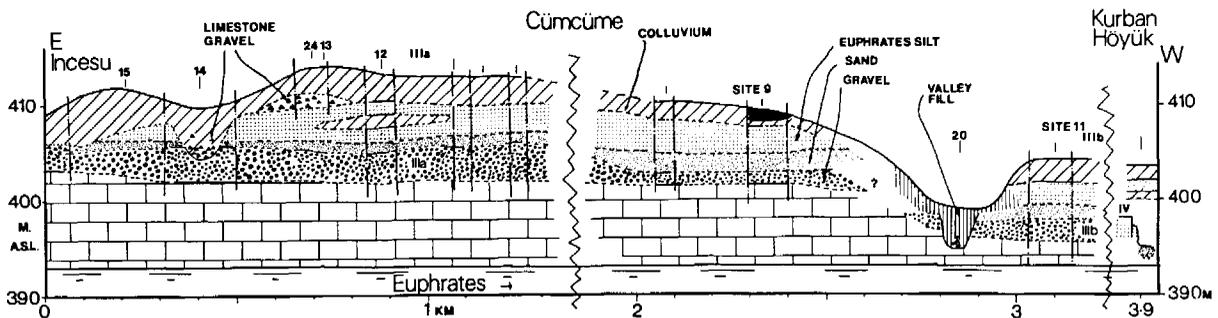


Figure 1.5c. Longitudinal Section (East-West) Showing Fluvial Euphrates Sediments Overlaid by Colluvium and Cut by Valley Fills. Numbers Refer to Specific Surveyed Sections.

which normally form more well-developed horizons in older soils in many semiarid regions, are not a good indicator of age in the Kurban Höyük area.

Table 1.1. Main Characteristics of the River Terraces Around Kurban Höyük.

<i>Terrace</i>	<i>Height of Terrace Flat</i>	<i>Height of Channel Gravel</i>	<i>Approximate Age</i>	<i>Soil Color</i>	<i>Soil[†] Phosphorus mg P/100 gm</i>
I	500–550 m ASL	a) 550 m b) 515 m c) 490 m	Acheulian-Middle Pleistocene*	5YR 4/6–5/6 (d & m); 7.5YR 5/6–7/6 (d & m)	40–94
II	435–440 m ASL	435 m	—	7.5YR 5/4 (d); 7.5YR 4/4 (m)	60–94
III	a) 410 m ASL	401–406 m	Mid-Upper Palaeolithic; Middle Pleistocene* *	7.5YR 5/4 (d) 7.5YR 4/4 (m)	100–260
	b) 405 m ASL	398.50–396 m	—	10YR 6/4–5/4 (d) 10YR 4/4 (m)	140–300
IV	a) 398 m ASL	ca. 393 m	Post-third millennium B.C.	—	—
	b) 397 m ASL	ca. 393 m			

† General range only; for more details see chapter 3.

* Acheulian hand axes were upon and within colluvial sediments overlying palaeo-channels a-c.

* * Flint tools, some rolled of Levalloisian-Mousterian type with some blade forms occurred in Proto-Incesu gravels cut in Euphrates gravels of terrace IIIa (location 014, fig. 1.5).

Climate, for this small area, is essentially uniform and vegetation, which in the past might have caused considerable variation in soil development, is now highly degraded. As a result, processes of accelerated erosion and aggradation now have a more significant effect upon soil development than vegetation.

Here, emphasis is placed upon soils or terrain types that directly influence land use and archaeological survey, hence certain categories employed are not strictly soils but would encompass one type of land use. Initially soils and terrain types were sketched on to 1:5,000 and 1:10,000 maps in the field for the area shown on figure 1.4. Subsequently, this record has been extended by reconnaissance over the remaining 1:25,000 mapped area.

The following soil and terrain types were mapped in the field (fig. 1.6):

1. Soils of the limestone uplands.

Generally shallow and stony brown loams on the higher, steeper terrain, but where gradients are gentler, for example along the Cümçüme-Arikök road, soils can exceed 1 m in depth. The latter reddish brown clay loams are probably quite fertile but have not been studied in detail. Today the

deeper soils on gentler slopes carry cereals, lentils, sesame or occasionally vines whereas the steeper slopes (steeper than 12–15 percent) remain uncultivated. No detailed studies have been made of upland soils, but from the thick colluvial cover of the terraces it can be inferred that formerly the uplands were mantled by thick reddish brown clay loams that now only remain in pockets.

2. Reddish brown soils of the Pleistocene terraces.

Soil parent materials are predominantly alluvial sediments washed from the uplands to the south. Soils are mainly more than 1 m deep and exhibit weakly developed calcium carbonate B and C horizons below a depth of 80 cm. Where bluffs of Euphrates palaeo-channels crop out within terrace I, soils are shallow and stony. Such stony phases are not distinguished on the reconnaissance soil map, but are visible on the geomorphology map (fig. 1.4) and on detailed maps of sites 12, 14, and 37 (fig. 5.6 and A.18). Soil phosphate determinations are high for terrace III soils but only moderate for those of terrace I (see ch. 3 and *App. C*, figs. C.1a and b).

According to local inhabitants, the deep reddish brown terrace soils are more fertile than the light colored calcareous silts of class 4.

Additional details and soil profiles of class 2 soils are given below.

3. Stony alluvial fan soils.

These occupy extensive areas to the south of Kurban Höyük and Cümçüme, where valleys cut into terrace I debouch on to terrace III. Soils are very stony, comprising both Euphrates cobbles washed from higher terraces, and limestone gravel eroded from valley sides. Stones greatly impede cultivation and today these soils are mainly used for rough pasture or vineyards. Fans to the southeast of Cümçüme have been most active in the recent past. The fan by Kurban Höyük has essentially remained stable, except for localized aggradation in the northeastern sector (see below, pp. 26–9).

4. Light-colored calcareous silt loams.

These appear whitish in the field and register Munsell soil colors around 10YR 7/4 or lighter. They occupy areas around the fringes of alluvial fans (fig. 1.6). They were defined according to Munsell color readings taken on soil samples collected during the survey of ancient land use (chs. 3 and 4). The soils are disintegration products of limestones and have been eroded from outcrops along valley sides, especially in those areas exhibiting accelerated erosion (class 6 land). The soils are of relatively recent origin, without horizon development and have yielded low values of soil phosphorous (ch. 3). According to local inhabitants, these soils are inferior to the reddish brown terrace soils. Because they are closer to the village however, they are intensively cultivated; either being irrigated for cotton or dry farmed for cereals and lentils.

5. Soil complexes of terrace I valleys and scarps.

Within the 1:10,000 area these were defined as valley sides or scarps with slopes steeper than 25 percent. This figure, or steeper, corresponds to slope class E of the U. S. Department of Agriculture system; i.e., steep slopes that usually suffer rapid runoff and normally support only pasture or woodland (U.S.D.A. 1951 p. 164). Subsequently this valley complex was extended on to the remainder of the 1:25,000 map sheet using contours to define the 25 percent slope. Narrow valley bottoms, usually containing dry gravel beds of seasonal streams, are included within this class. Usually the mid and upper slopes consist of very shallow stony soils over limestone; these grade into colluvial foot slopes. Steep slopes within the upland limestone belt have been excluded unless they fall within the valley systems.

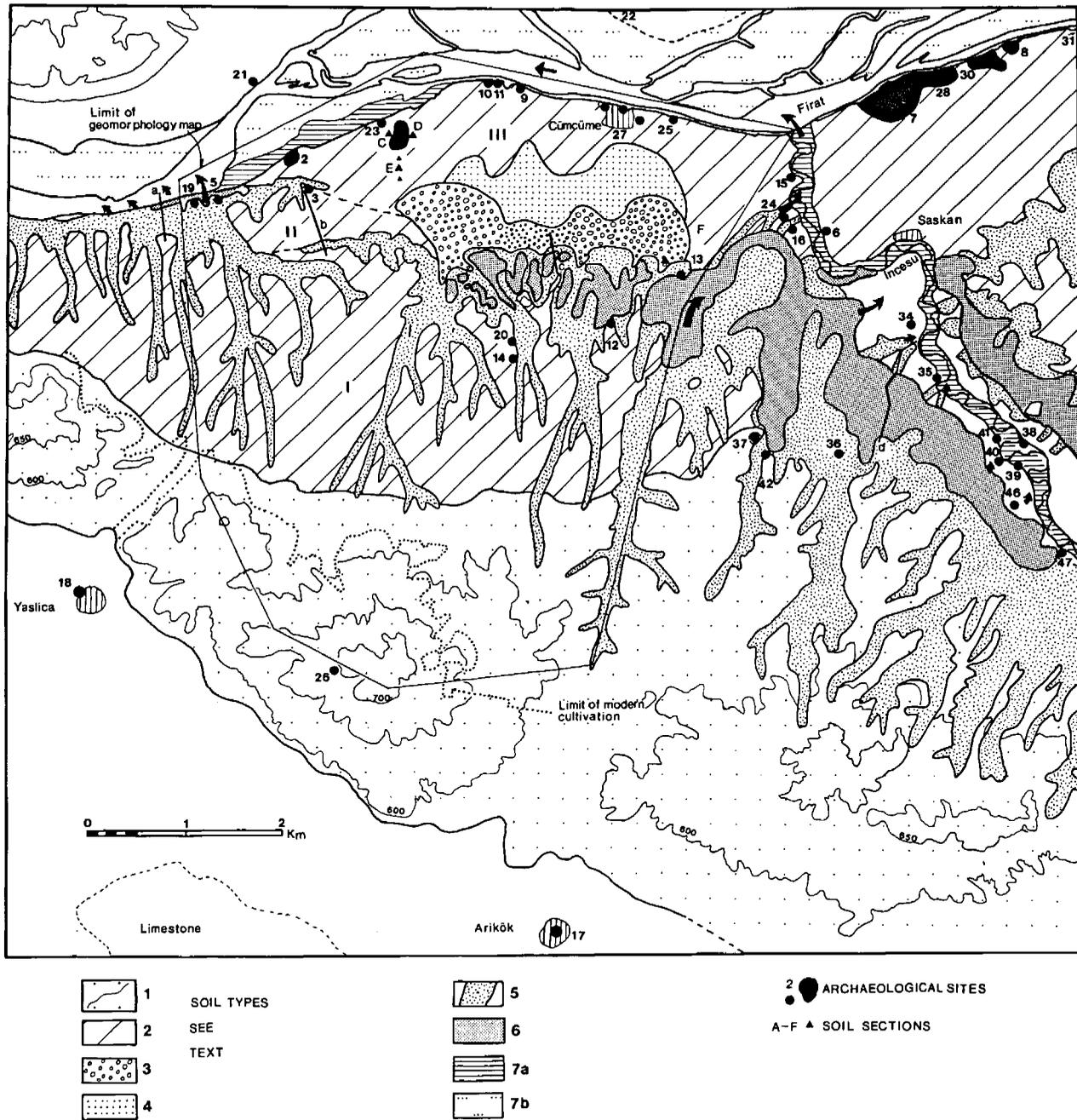


Figure 1.6. Reconnaissance Soil Map of Detailed Survey Area Showing Modern Settlements, Archaeological Sites, Soil Pits, and Cuts. The Detailed 1:10,000 Geomorphological Survey Area (fig. 1.4) is Indicated Within the Frame. Valleys Discharging Sediment into the İncesu Deresi or Directly into the Euphrates are Indicated with Arrows.

6. Heavily eroded land.

Bare white limestone on steep slopes (greater than 25 percent) exhibiting a high drainage density mainly in the form of gullies. Within the detailed area these were mapped at 1:5,000 and they were subsequently extended on to the 1:25,000 map area. These correspond to class 4 of the LANDSAT terrain map. Minor differences between the field and LANDSAT maps (figs. 1.6 and 1.2) result from slightly different definitions of what constitutes heavily eroded land, using the two different sources. In the field, heavily eroded limestones often merge with moderately eroded steep slopes of class 5, hence the estimate of heavily eroded land is more conservative than that using LANDSAT.

7. Flood plain soils.

Two complexes are distinguished:

- a. Flood plain soils along the İncesu Deresi. Comprise mainly erosion products of limestones varying from angular gravel and chert to calcareous silts. Redder loamy soils which were possibly more extensive during the early Holocene form occasional residuals within the light-colored soils. Soils are generally deep and appear to produce moderate crop yields either under irrigation or when dry farmed.
- b. Recent—certainly post-third millennium B.C.—soils of the Euphrates flood plain and its adjacent terraces (terrace IV). They are without profile development. Today, where practicable, they are irrigated for vegetable crops. Elsewhere, where they are low and seasonally inundated, floodplains are used for occasional pasture.

8. Unclassified soils (left blank on soil map).

- a. Complex of soils along the İncesu Deresi between class 6 and class 7b soils. Comprise small areas of gullied land, gravel fans, and colluvial slopes. Irregular terrain cut by many small tributaries.
- b. Soils of the Yaslica-Arikök basin. Predominantly reddish brown clay-rich sediments apparently washed from adjacent limestone uplands. Usually deeper than 1 m but along the catchment boundary between the two villages bare limestone crops out.

F. SELECTED SOIL AND SEDIMENT SECTIONS

Excavated soil pits and eroded stream cuts enabled stable terrace soils to be differentiated from areas experiencing rapid aggradation (see fig. 1.6).

Pits dug through the base of both high and low mounds at Kurban Höyük (fig. 1.7A and B) showed each mound to have accumulated upon a reddish brown clay loam similar to those of the surrounding terraces today (class 2 soils). Calcium carbonate horizons, although present, were more weakly developed than in soils exposed in pit 153 to the south of the mound (fig. 1.7E), possibly because in the latter, a further 7,000 year pedogenesis had allowed some concretions to develop. Soil phosphate values of soil 'A' and 'B' horizons were also comparable to those from pit 153 as well as from surrounding plow soils.

The soil exposed in the base of C01 (fig. 1.7B) resembles that in A09 except for the presence of a transitional anthropogenic layer (2) cut in the top of the buried soil.

Aggradation around the flanks of the mound (fig. 1.7C and D) occurred in two phases: The initial accumulations were probably a result of rubbish dumping or, in the case of pit D, possibly in situ occupation during the third millennium B.C.; unfortunately no pure pottery assemblages were found to provide closer dates. Subsequent aggradation, which was initially poor in artifacts, occurred as the mound foot expanded as a result of wash and creep away from the main mound. During this accumulation, sufficient time elapsed for soil structure to develop and for filaments of calcium carbonate to accumulate.

The open profiles exposed in pits 152–154 (only 153 illustrated, fig. 1.7E) showed no sign of aggradation from up-slope. Potsherds were limited to the top 20 cm except where small sherds had slipped down cracks to a maximum depth of 1 m. These factors, combined

TOWN AND COUNTRY IN SOUTHEASTERN ANATOLIA

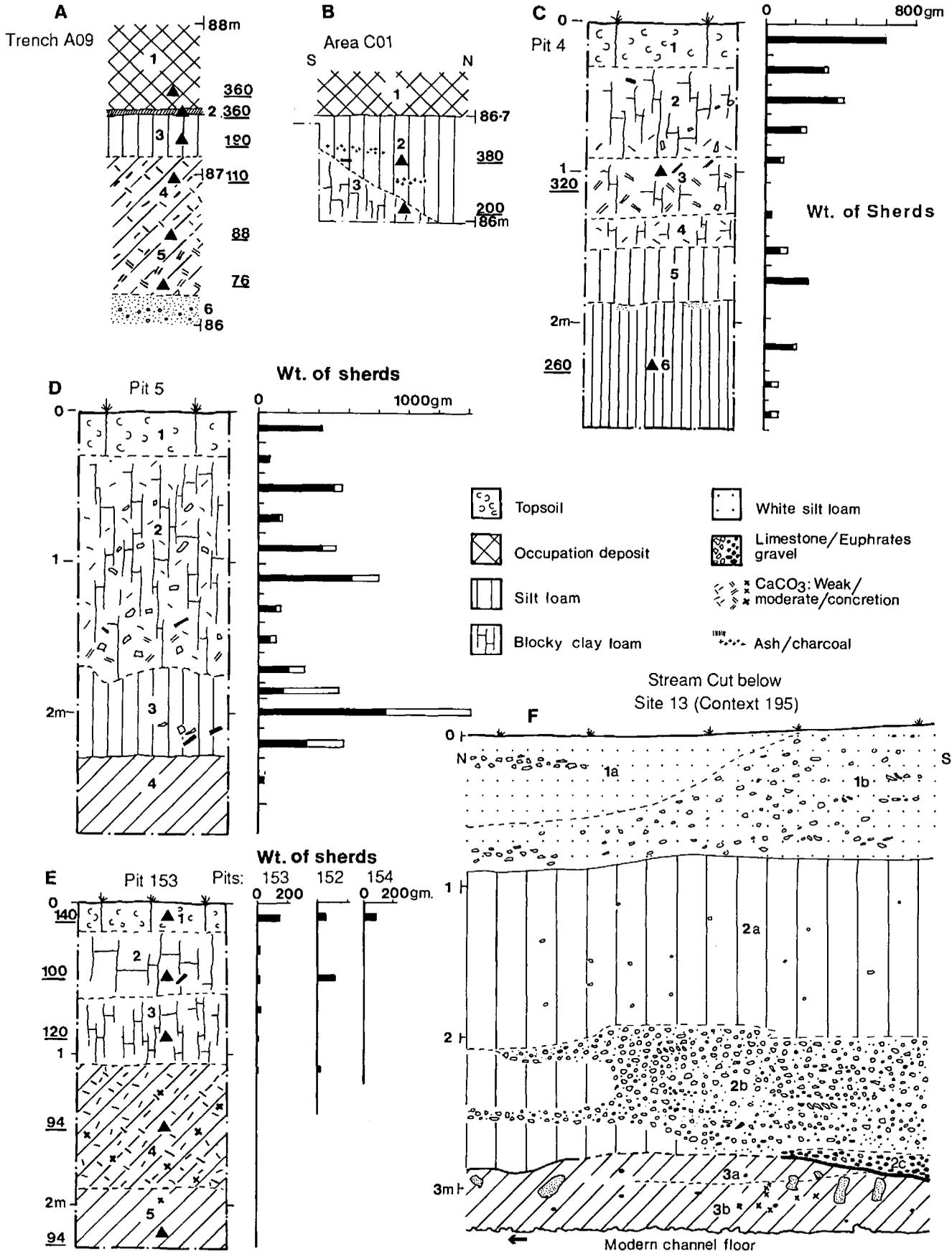


Figure 1.7A-F. Selected Soil and Sediment Sections Exposed in Terrace III. (A and B) below Kurban Höyük; (C and D) on Flanks of the Mound; (E) to the South of the Mound; (F) Exposed in a Stream Cut below Site 13. Phosphate Sample Locations are indicated by Solid Triangles and Readings (mg P/100 gm) are Underlined. In Pits 4 and 5 Pottery Weight Histograms have been Increased as Indicated to Allow for Soil not Excavated because of the Presence of Steps. Scale 1:40.

with the similarity between the open profiles and those buried beneath the mound imply that the terrace surface has here remained stable for much of the Holocene. Within the western part of terrace III, aggradation has been restricted to the mound periphery, along the edge of terraces I and II bluffs, and in the northeastern sector of the adjacent fan.

In contrast, in the central portion of terrace III near Site 13, an incised fan-head stream cut has exposed some 3 m of sediment which overlay a reddish-brown palaeosol (strata 3a and 3b, fig. 1.7F) enriched in calcium carbonate concretions and burrowed by animals. This stable soil was subsequently eroded by torrential streams which initially transported abundant Euphrates gravel. These streams later also included debris washed from valley sides and the terrace surface (strata 2a and 2b). Up-valley, immediately below Site 13, many body sherds of late third millennium B.C. pottery (EB-MB transition, Kurban Höyük period III) were recovered from the base of stratum 2. An increased proportion of limestone gravel in chalky silt loam in the upper stratum (1) signifies even greater erosion of the limestone valley sides at this time. Evidently within the alluvial fan catchment, the onset of accelerated erosion and deposition was rapid and, as protective soils were stripped off valley sides (during the deposition of stratum 2), more limestones gradually were exposed and eventually became incorporated in the fan gravels. The abundant pottery around the 2-3 interface testifies to a third millennium or post-third millennium B.C. date for the aggradation. The peripheral spread of calcareous silts (soil class 4, fig. 1.6) also belong to this aggradation phase as are some, but not necessarily all, of the adjacent alluvial fans.

G. DESCRIPTION OF SOILS EXPOSED IN PITS AND STREAM CUTS

A. BURIED SOIL EXPOSED IN BASE OF TRENCH A09, KURBAN HÖYÜK (fig. 1.7A)

- | | |
|-----------|---|
| Stratum 1 | Complex of occupation deposits of mound. P = 360 ³ |
| Stratum 2 | Thin, gray ashy layer. Occasional charcoal flecks to 3 cm; some flecks of burnt mudbrick. Basal occupation deposit on top of buried soil. P = 360. |
| Stratum 3 | Moderately firm brown, 7.5YR 5/4 (dry) silt loam. Occasional fine root holes, rare worm casts. Weak granular structure, slightly compressed. Rare evidence of occupation: single sherds at 20 cm and charcoal flecks at 25 cm below top of layer respectively. P = 190. Buried soil 'A' horizon. |
| Stratum 4 | Brown, very firm silt loam. Structureless, common filaments of calcium carbonate. P = 110 (above), 88 (below). Buried soil 'B' horizon. |
| Stratum 5 | Dark yellowish brown, 10YR 4/4 (moist) very firm sandy silt loam with off-white variegations resulting from an accumulation of calcium carbonate. Rare small clusters of burnt clay and charcoal flecks in upper part of horizon probably result from faunal disturbances. P = 76. Buried soil 'Cca' horizon. |
| Stratum 6 | Brown, 10YR 4/3 (moist) fine sand. Igneous pebbles from Euphrates increase below. Upper part of deposits of Euphrates terrace. |

3. "P" denotes soil phosphorous readings in mg P/100 gm.

B. BURIED SOIL EXPOSED IN BASE OF TRENCH C01, KURBAN HÖYÜK (fig. 1.7B)

- Stratum 1 Complex of occupation deposits forming base of mound.
- Stratum 2 Yellowish brown 10YR 5/4 (moist) silty clay loam. Weak medium subangular blocky structure. Two lenses of charcoal. P = 380. Anthropogenic deposit, either mixed soil 'A' horizon or pit fill.
- Stratum 3 Strong brown, 7.5YR 5/6 (moist) silty clay loam. Moderately developed subangular blocky structure with a tendency to prismatic. Occasional rootlet voids lined with calcium carbonate; occasional reddish black iron or manganese accumulations on structure surfaces. P = 200. Buried soil 'B' horizon.

C. SEQUENCE OF ANTHROPOGENIC DEPOSITS EXPOSED IN SOIL PIT 4 TO WEST OF KURBAN HÖYÜK. (fig. 1.7C)

- Stratum 1 Brown loam plow soil. Pottery included late Roman-Byzantine sherds.
- Stratum 2 Brown silt loam, occasional small fragments of angular limestone washed from mound. Prismatic structure, occasional filaments of calcium carbonate. Contained sherds ranging from Early Bronze Age (EB) to Early Bronze Age-Middle Bronze Age (EB-MB) transition.
- Stratum 3 As for 2. Common filaments of calcium carbonate. Few sherds. P = 320.
- Stratum 4 As for 2. Occasional filaments of calcium carbonate. EB-MB transition sherd from base.
- Stratum 5 Brown silt loam; rare calcium carbonate accumulations. Secondary peak of pottery includes early, middle, and late EB sherds.
- Stratum 6 Firm brown, silty, clay loam, occasional calcium carbonate concretions. Blocky structure exhibits shiny ped faces resulting from expansion and contraction. Contained early or middle EB sherds. P = 260. Possibly a buried soil but appears to have been disturbed by pits along S section. Alternatively this lowest layer may be aggraded sedimentary sequence beyond base of mound possibly as a result of rubbish accumulation during occupation of mound.

Stratum 5 was followed by a declining input of cultural material. The increased input in the top 80 cm probably results from later washing of occupation deposits down slope, possibly encouraged by late Roman-Byzantine plowing.

D. SEQUENCE OF ANTHROPOGENIC LAYERS EXPOSED IN PIT 5 TO EAST OF KURBAN HÖYÜK (fig. 1.7D)

- Stratum 1 Brown plow soil containing middle-late Early Bronze Age sherds.
- Stratum 2 Brown silt loams (1.5 m deep) with prismatic structure. Common angular fragments of limestone 5–30 mm long axis have been washed down slope from site. Occasional filaments of calcium carbonate becoming common below, but these stop at base of layer at 1.7–1.8 m. Sherds include late Roman-Byzantine diagnostics from 0.6–1.8 m and a mixed assemblage of middle-late EB sherds throughout layer.

- Stratum 3 Moderately firm brown silt loam without calcium carbonate filaments. Abundant pottery between 2.0 and 2.3 m includes early, middle, and late EB sherds. Distinct interface with 4.
- Stratum 4 Very firm, pale brown, silt loam, slightly platy. Occasional charcoal and fired clay fragments. Appears to be buried soil containing diminishing quantities of pottery, but conceivably this might be part of a mudbrick structure.

As in pit 4 this appears to be an aggradation of culturally derived material representing probably either in situ occupation or dumping below 2 m depth. This was followed first by a decline in cultural input followed by a secondary peak in cultural debris at ca. 1 m. This secondary peak probably results from wash of debris from the spreading mound base.

E. SOIL PROFILE DEVELOPED ON REDDISH BROWN SEDIMENTS FORMING COLLUVIAL COVER OF TERRACE SEDIMENTS IN PIT 153 (fig. 1.7E)

- Stratum 1 Strong brown, 7.5YR 4/4 (moist), silty clay loam. Occasional stones; deep contraction cracks. P = 140.
- Stratum 2 Dark brown, 7.5YR 4/4 (moist), silty, clay loam. Deeply cracked with very coarse blocky structure. Occasional small angular limestone fragments, frequently vertical along cracks. P = 100.
- Stratum 3 Dark brown, 7.5YR 4/4 (moist), silty, clay loam. Slightly cracked with occasional vertical stones. Some fine root hairs; sparse calcium carbonate filaments below 100 cm. P = 120. Weakly developed soil 'B' horizon.
- Stratum 4 Reddish-brown, 5YR 4/4 (moist) silty clay with abundant calcium carbonate filaments and occasional concretions of same. Dense fabric with few cracks. Occasional clay skins on surfaces of structural units result from clay movement from horizons above. P = 94. Soil 'B' horizon characterized by accumulation of clay and calcium carbonate.
- Stratum 5 Dense, strong brown, 7.5YR 5/6 (moist), silty clay. Rare stones, occasional calcium carbonate filaments. P = 94. Soil 'C' horizon.

Two other pits, 152 to the south and 154 to the north were excavated to depths of 1.4 and 1.2 m respectively. These showed the same trends as 153 and here only the distribution of sherds with depth is shown. In all three cases sherds are most common in the plow soil and decrease downwards through the profile. Below the plow soil sherds are rare but when present are usually small. Their maximum depth in 152 and 153 is at 1.0–1.2 m and corresponds to the base of the cracked 'B' horizon. Indeed, several sherds were found oriented along vertical cracks.

Although a depth of 2.3 m was reached in 153, no sherds were reported from the bottom 1 m. The soil appears to have formed naturally away from any anthropogenic influences except for the presence of manuring-derived sherds in the plow soil (see ch. 3). The presence of calcium carbonate filaments does not indicate great age (cf. pits 4 and 5 above), but the concretions, which do not occur in pits 4 and 5, have probably accumulated over a long period of time. Values of soil phosphorous are comparable to those of plow soils elsewhere in the vicinity and show no signs of cultural input. The sections indicate stability of long duration during which there has been neither aggradation nor erosion.

F. SECTION EXPOSED IN STREAM CUT AT HEAD OF FAN BELOW SITE 13, CONTEXT 195 (fig. 1.7F).

- Stratum 1a White, 10YR 8/2 (dry); pale yellow, 2.5Y 7/4 (moist) coarse silt loam, slightly plastic. Structureless with no horizon development. Occasional limestone gravel; Euphrates stones rare.
- Stratum 1b Gravel, dominantly limestone clasts 3–5 cm long axis; sub-rounded, occasionally angular to subangular. Locally these are imbricated indicating current flow to north. Matrix as for 1a. Clear lower boundary. Stratum 1 is mainly composed of limestone debris eroded by gullies from valley sides to the south.
- Stratum 2a Very pale brown 10YR 7/4 (dry); yellowish brown, 10YR 5/4 (moist). Silt loam, slightly clayey, very plastic. Occasional small stones to 2 cm mainly of limestone but some Euphrates pebbles present. Matrix has weak subangular blocky structure. Occasional small land snail shells. Comprises debris eroded both from limestone slopes and reddish-brown colluvium.
- Stratum 2b Medium-coarse gravel (2–15 cm long axis), mainly limestone but includes occasional Euphrates pebbles. Moderately well-bedded with occasional areas of imbricate bedding indicating flow to north. Matrix as for 2a.
- Stratum 2c Medium-coarse gravel, moderately well bedded: mainly Euphrates pebbles. Overlies erosional interface with 3 below.

Stratum 2 comprises mixed elements. Commences with erosion of underlying (stratum 3) soils. Moderate flow energy continued within 2b as seasonal deposition within torrential channels. Merges upwards into sediments deposited in more quiescent conditions, probably as a result of main flow path moving laterally away. Includes erosion products from both exposed limestone valley sides, from terrace gravels, and from reddish-brown colluvium.

- Stratum 3a Light brown, 7.5YR 6/4 (dry); strong brown 7.5YR 5/6 (moist) silty clay loam. Well developed fine to moderate subangular, blocky structure. Distinct but irregular interface with 2b-c above; merges down into 3b. Palaeosol 'A' horizon, locally eroded.
- Stratum 3b Brown, 7.5YR 5/4 (dry); dark brown, 7.5YR 4/4 (moist) very plastic, silty, clay loam; more clayey than 3a. Well-developed coarse subangular blocky structure. Occasional small Euphrates pebbles. Calcium carbonate lines some cracks and channels and occurs in places as small concretions. Occasional animal burrows, apparently ancient, filled with material of 2b type.

Stratum 3 developed on a stable land surface. Sufficient time elapsed for the development of a Bca horizon (3b) and probably during this phase animals were burrowing into the soil. The sediment matrix probably arrived over an extended period as a result of the erosion of reddish brown colluvium onto terrace I and possibly draped over valleys.

H. SLOPE EROSION AND VALLEY AGGRADATION

Although the stream cut below Site 13 exposed the only dated sequence of fan aggradation, a small cut in the fan south southwest of Cümçüme suggested that a similar

sequence was present in that fan. Therefore in at least these two fans it can be suggested that large-scale fan aggradation and its concomitant gully erosion have occurred over the last 5,000 years. The other badlands mapped (soil class 6) may also be contemporary with this phase of activity, but an earlier inception cannot be excluded. For example, the above-mentioned colluvial section near Karababa (fig. 1.5a) and certain İncesu Deresi tributaries indicate some colluviation of limestone debris presumably during the Pleistocene. Bearing this caveat in mind, if a Holocene date is accepted for much of the erosion and aggradation, the most likely trigger factor was the destruction of a formerly continuous forest cover during or a little earlier than the third millennium B.C.

Evidence for the existence of such a forest cover comes from three main sources:

1. *Archaeobotanical Analysis of Excavated Deposits*: The following note is based upon the work of N. Miller (1986). Miller has shown that the ratio of various seeds to wood charcoal increases considerably after the early EB (Miller 1986, tab. 2). This implies that wood for fuel was replaced by dung which suggests a decrease in the woodland cover. Oak is the most common species in the early EB samples, followed by poplar-willow. The high proportion of oak suggests that it was more abundant in the past than today, although short haulage transport from up-river cannot be discounted. This result is similar to that obtained at Aşvan by G. Willcox (1974) where oak, elm, and poplar-willow were important.
2. *Faunal Analysis*: The faunal record at Kurban Höyük shows a relative decline of pig in favor of sheep and goat between the Late Chalcolithic and the Early Bronze Age. This decline might support a diminution of woodland cover during the third millennium (Wattenmaker unpublished reports 1981, 1982). Similarly, at Hassek Höyük, further up the Euphrates, pig was dominant in Late Chalcolithic levels (Behm-Blancke 1981; Boessneck and Von den Driesch 1981). The predominance of pig might imply non-intensive shifting agriculture in forested areas (Stein and Wattenmaker 1984, p. 5). However, because variations in herding practice may have equally affected the faunal record this information must be regarded as equivocal.
3. *Palynological Investigations*: Evidence for the diminution of the forest cover is suggested by palynological investigations of lake deposits at Golbaşi to the north in the Anti-Taurus zone around 2850 B.C. (van Zeist et al. 1970). In another publication, van Zeist infers a continuous forest cover for the Kurban Höyük area around 4000 B.P. (van Zeist and Bottema 1982, fig. 14.13).

These three strands of evidence: archaeobotany, faunal analysis, and palynology, all hint that formerly the area was more wooded than today and that during or since the third millennium B.C. this cover has been extensively removed. Certainly, as has been observed above, the area is climatically capable of supporting oak trees today. Such devegetation would increase runoff and sediment yield. In response, drainage density (total length of channels per unit area) would increase on slopes and trunk valleys would aggrade with the eroded sediment (Strahler 1956, p. 635). This would be especially marked on long, steep slopes developed in the marly, chalky limestones of the area.

The distribution of intensely eroded land and its associated aggradation is uneven. In the east, badlands are tributary to the İncesu Deresi and ultimately the Euphrates. Progressing westwards, valleys which discharge onto terrace III exhibit some gully erosion.

In turn, alluvial fans and peripheral veneers of calcareous silts have built up. Further west, relatively stable valleys associated with only localized colluviation discharge onto terrace II. Finally, valleys shown on the west side of the map (fig. 1.6) that discharge directly into the Euphrates, although not associated with true badlands, do show evidence of active headward erosion. In some cases, these western valleys captured drainage from less vigorous valleys tributary to terrace II. The following discussion attempts to interpret such disparate intensities of erosion in terms of surface slope and sediment transport through the valley systems.

Because steeper slopes will experience more rain-splash erosion and more and faster runoff (Hudson 1971, p. 183) erosion will rise rapidly as slope increases. Slope length is also important however because long slopes will generate more, deeper, and faster surface runoff (Hudson 1971, p. 184). In the study area, slopes are short and precipitous along the Euphrates where the channel frequently trims them (fig. 1.8a). The bluffs between terraces I and II, although steep, are short (fig. 1.8b), but where terrace I directly overlooks terrace III relief is higher and slopes longer (fig. 1.8c). Further east where terrace I falls directly into the İncesu valley both relief and slope length attain a maximum (fig. 1.8d). Although minor variations exist within the badlands, slope gradients appear comparable throughout, but slope length increases considerably from west to east. Other things being equal, the longer, eastern slopes have suffered the most intense erosion whereas equally steep but short slopes between terraces I and II have remained stable.

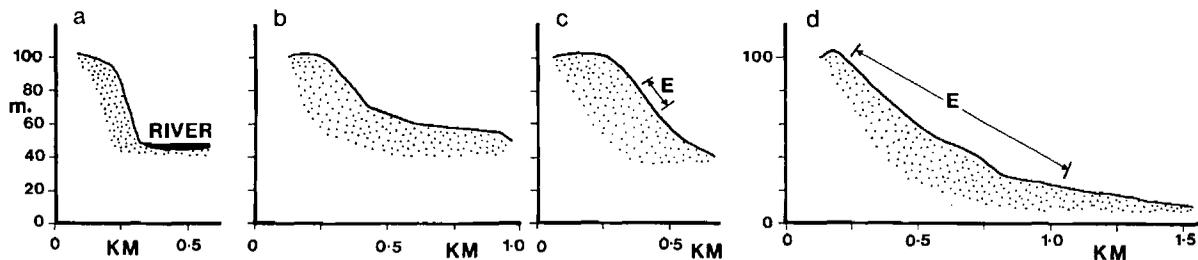


Figure 1.8a-d. Slope Profiles at Selected Locations Within the Survey Area. The "E Relief" Indicates Heavily Eroded Land (m above an arbitrary datum; vertical exaggeration is magnified six times).

In addition, output of sediments may ultimately affect erosion of valley slopes. Where valleys feed directly or indirectly into the Euphrates their load will be constantly removed as will be the products of slope erosion. To the west, where tributaries discharge directly into the Euphrates this removal will be constant. If fans accumulate on the flood plain, the removal of tributary discharge will await the erosion of the fan by the Euphrates. In the east, along the İncesu, finer sediments will be removed by flow directly into the Euphrates. Sands and coarser materials will have variable residence times and will move in stages to the main river (indicated by arrows on the map, fig. 1.6). Where valleys discharge directly on to terrace III, as occurs between Kurban Höyük and Cümçüme, aggradation will occur as described and erosion products will remain on the terrace. This will encourage aggradation in the trunk valley, and in turn erosion products will accumulate over and protect the lower slopes from erosion. Such inhibiting factors will not operate where tributaries are transporting load into the Euphrates and İncesu valleys and their lower slopes will remain vulnerable to erosion. The İncesu tributaries, having the optimum combination of sediment removal and long slopes, have consequently experienced the most devastating gully erosion.

The available evidence indicates that massive erosion and sedimentation have taken place since the third millennium B.C. In some valleys, however, accelerated erosion may have occurred earlier during the Pleistocene as a result of a variety of factors: localized vulnerability of the soil to erosion, climatic change, variations in the vegetal cover, and movements of the main Euphrates channel. The main phase of erosion within the Holocene was probably man-induced, but the variation in intensity accorded to natural factors such as slope geometry and valley geomorphology. Proximity to human settlements does not seem to have been a factor in causing erosion.

As a result of this varied pattern of erosion and deposition, the western portion of terrace III has remained relatively stable through the Holocene and the loss of archaeological information has been minimized. Only around the mound of Kurban Höyük, where the foot of the mound has extended, are archaeological remains likely buried. In contrast, around Cümcüme fields and settlements such as a putative lower component of Site 13, might be beneath a thick carpet of sediment.

I. WATER RESOURCES

The marked gradient in annual rainfall from north to south combined with high runoff from the Anti-Taurus mountains and foothills results in a greater abundance of water sources to the north of the Euphrates River. In this zone, streams have higher discharges throughout the year than those to the south. LANDSAT images, especially those for the spring, reveal copious north bank flow in marked contrast to the puny flows of south bank tributaries, such as the İncesu Deresi, which are only marked by vegetation lines. As an example of north bank flow, the hydrograph for the Kahta Çay shows that spring rains and snow melt combine to swell the discharge of north bank streams to reach a peak in March. Although small compared to the April-May peak of the Euphrates, the March peak of Kahta Çay is considerably in excess of south bank flows (fig. 1.3).

Springs also are more copious north of the river, whereas around Kurban Höyük they are usually little more than seepages. Today, settlements derive their water from springs, wells within the village, and, if it is close enough, from the Euphrates. The location of archaeological sites, either along the river or within a short distance of a spring suggests that water supply was a dominant factor in the location of settlements. Away from the river springs always had a site nearby and conversely, with the exception of the small pastoral Site 26, no site was more than a few hundred meters from a spring. The inland springs (fig. 1.9a) appear therefore to be old features in the landscape, frequently being in excess of 4,000 years old (e.g., those at Sites 13, 16, 20, and 37).

An almost continuous line of seepages, locally forming true springs, issues from the Euphrates bluffs of terrace III. Because of their proximity to the Euphrates these could only have supplied supplementary water to the nearby settlements. Minor springs and seepages also discharge from valleys incised into terrace I. In the western group near Sites 12, 14, and 20 (fig. 1.9a) seepages issue from limestone a short distance below aquiferous terrace gravels (fig. 1.9b). Further east where valleys cut more deeply springs issue from the valley floor. Again, contrasting the vigorous flows of north bank springs, the springs around Kurban Höyük offer meager supplies. Evidence from Site 20 and Kurban Höyük implies that discharges were formerly higher. The former seepage issues very sluggishly from a crevice below a 3–4 m high limestone cliff. This feature must have originally been

produced by vigorous undercutting or 'spring sapping' by significantly stronger flows than prevail today (see pl. 4b, p. 37).

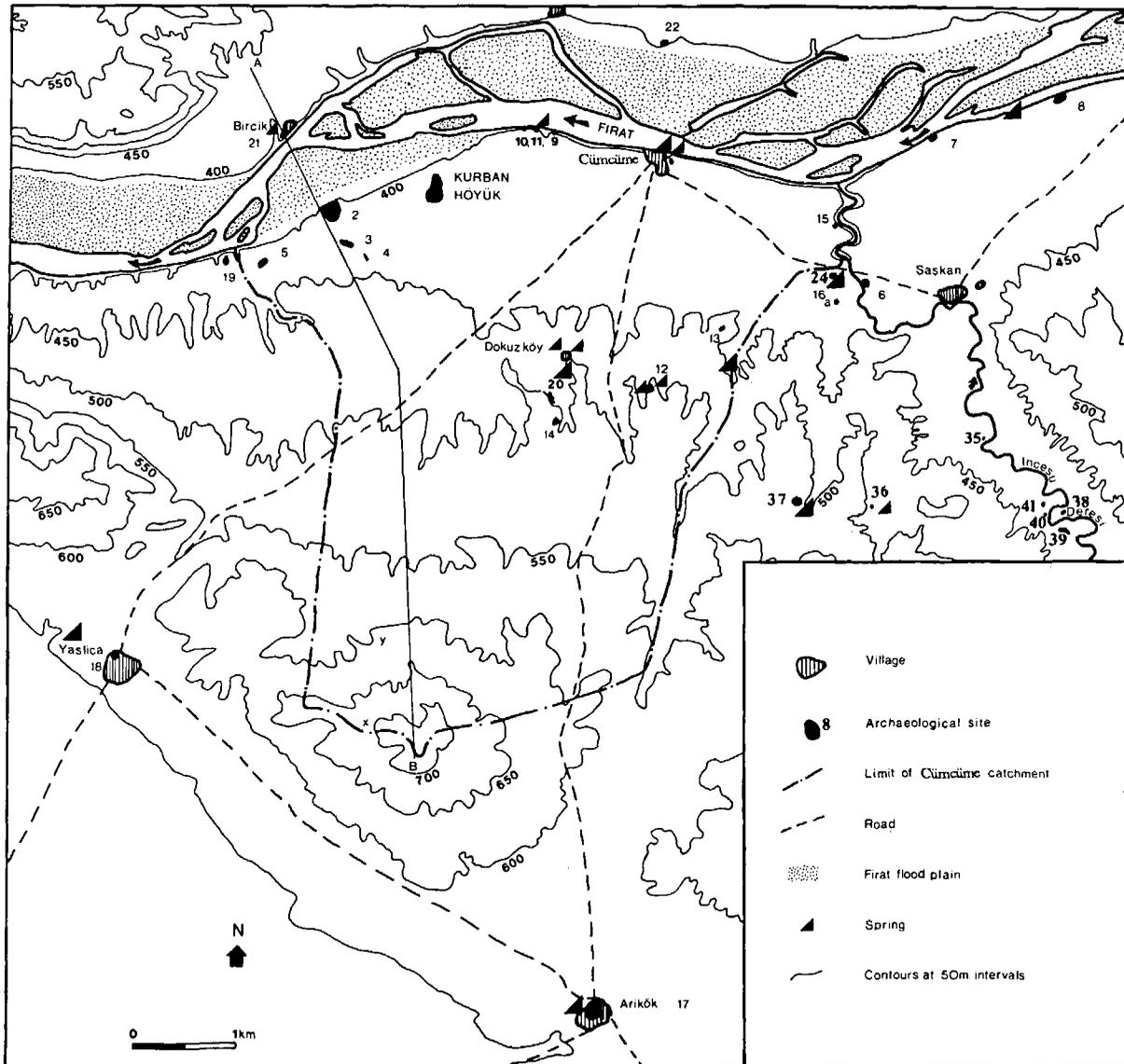


Figure 1.9a. Water Sources Within the Survey Area. Seepages Along the Euphrates Bluffs are Omitted.

Such declining flows may result from deforestation in antiquity which led to greater runoff from slopes and less infiltration into the soil. This process has been observed in eighteenth century France where, as a result of afforestation of pasture, springs and a small stream appeared in a formerly dry valley, only to disappear again when the trees were cut (Nir 1983, p. 16). Although this process of deforestation must have increased peak flow along the İncesu Deresi, the clustering of archaeological sites around present-day perennial flows suggests that stream flow was never continuous along the valley in the archaeological record.

The water supply of Kurban Höyük presented more problems than at other sites in the area because the site was distant from the most obvious water source—the Euphrates—and springs were absent in the vicinity. It appears that both the problem of water supply and the site’s anomalous position are connected. By placing soundings judiciously inside and

outside the mound it was therefore possible to make a tentative interpretation of the early mound topography and the associated water supply (fig. 1.10A).

Trenches A03, A08, and A09 reached aquiferous gravels at an elevation corresponding to terrace IIIa gravels along the bluffs (fig. 1.5C). In trench A03 the water table was reached and the gravel found to have been grossly churned in Late Chalcolithic times. This disturbed gravel was sealed by a substantial phase of middle EB construction. At approximately this time in trench A08, a well was dug down to the same gravel layer (fig. 1.10A) thus replacing the previous spring source with an internal source. The water sources during the Early Chalcolithic and the early EB are unknown but presumably the same spring source also served for the pre-Late Chalcolithic inhabitants.

The base of the well in A08 was at least 50 cm above the modern ground water table thus indicating a drop in the water table by at least that amount since around the mid-third millennium B.C. Again this is most plausibly explained as a result of woodland removal which increased runoff and decreased ground water storage (above, pp. 26f.).

Figure 1.10di presents a tentative reconstruction of the early development of the site. Occupation was initially on terrace IIIa, overlooking terrace IIIb and adjacent to a spring that occupied a small re-entrant cut into the higher terrace. As shown on figure 1.10dii the site has expanded over the intervening gully—which still remains as a ‘saddle’—to form a spur projecting onto terrace IIIb.

After the spring had gone out of use, as long as settlement was continuous, wells could be used to supply water. Once the site was abandoned the absence of an obvious water source decreased its attraction except possibly as a high, prominent location for the Islamic khan.

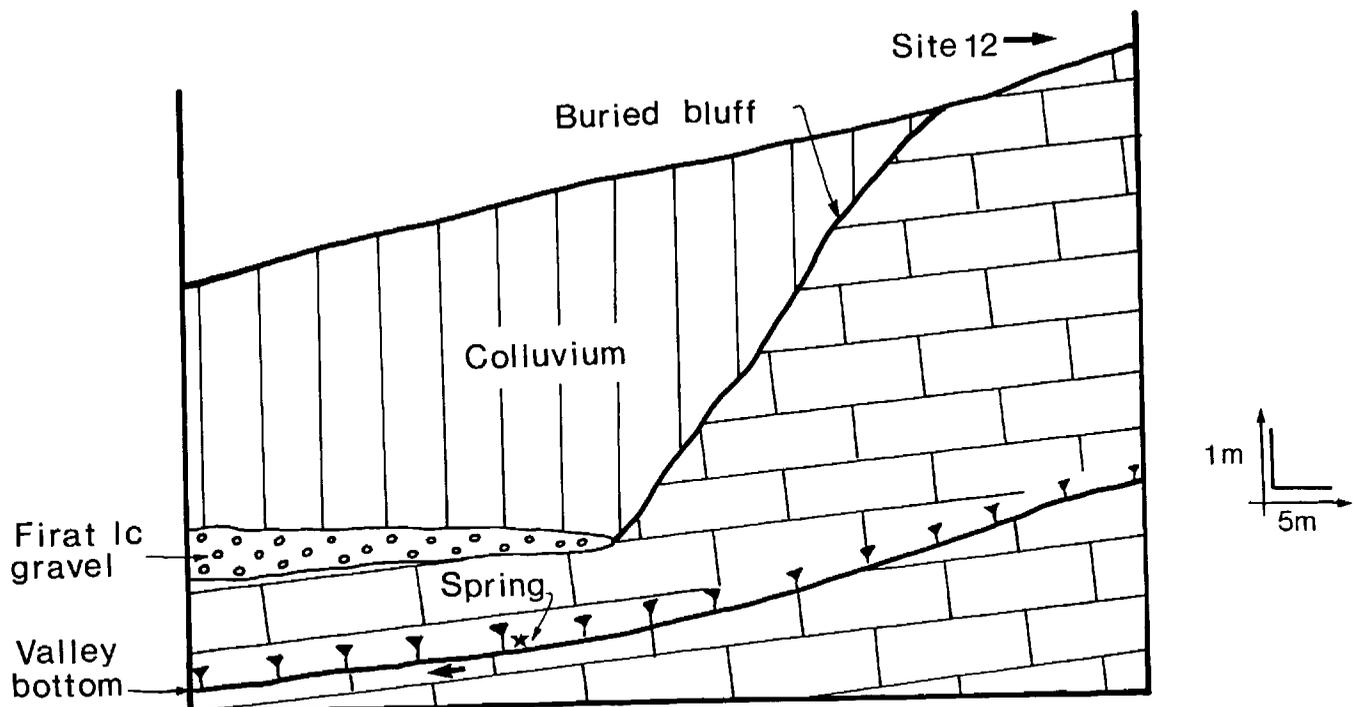


Figure 1.9b. Section through Terrace Ic near Site 12 Showing Location of Spring.

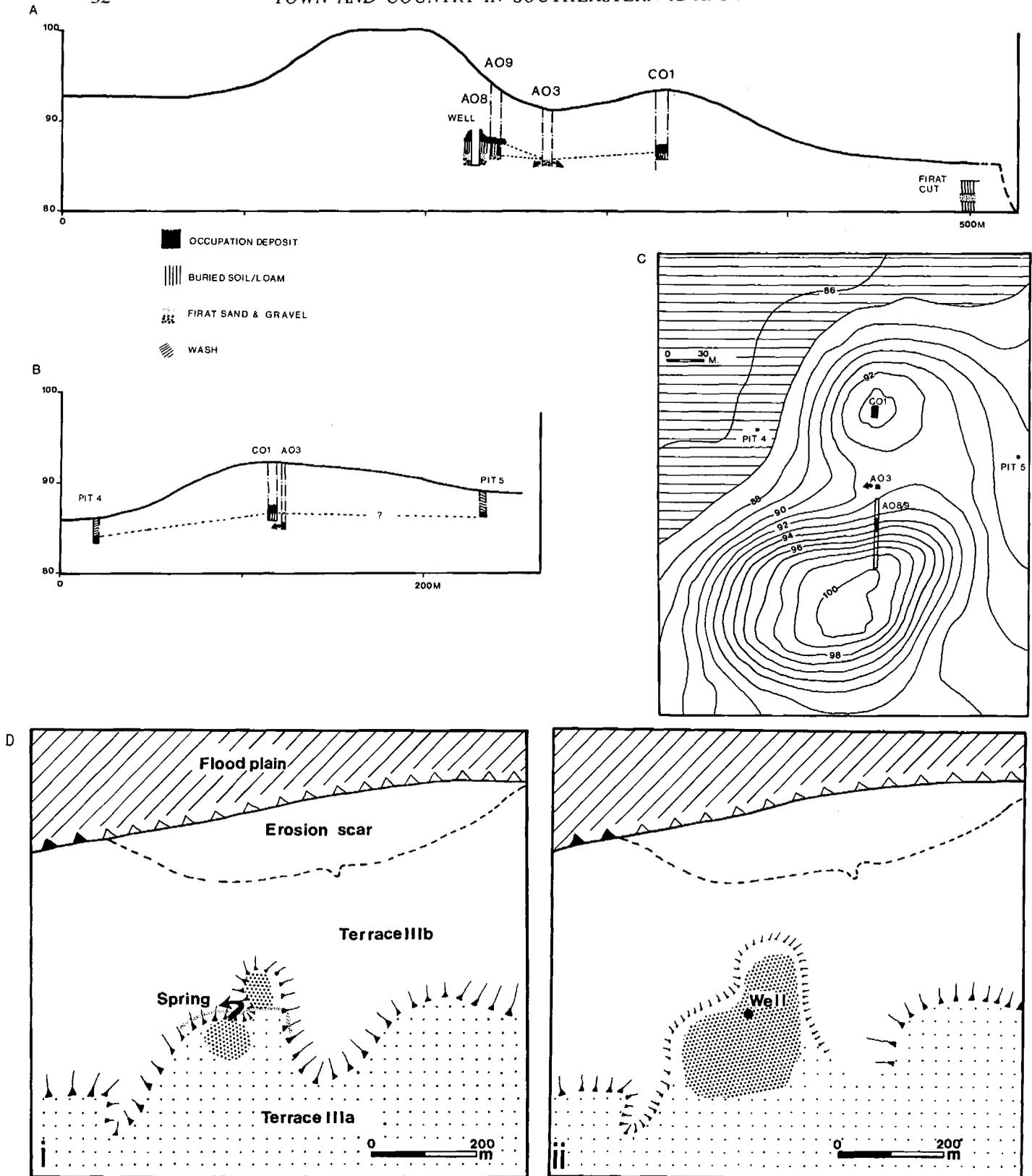


Figure 1.10A-D. (A) North-South and (B) East-West Sections through Kurban Höyük and (C) Plan Showing Trenches and Deposits used in the Interpretation of Site Water Resources. Horizontal Shading indicates Terrace III Lands below 87 m Contour (top of mound = arbitrarily 100 m). (D) Sketch Plan of Kurban Höyük, (i) During the Late Chalcolithic, and (ii) During the Mid-Late Early Bronze Age Occupation.

J. THE PRESENT-DAY VEGETATION OF THE KURBAN HÖYÜK AREA

by Naomi F. Miller

Kurban Höyük is located at the arid edge of the Kurdo-Zagrosian “xerophilous deciduous steppe forest” association, of which the dominant tree is oak (Zohary 1973). The presence of two large old oak trees on the limestone uplands ca. 5 km to the south of the site, suggests that there is sufficient moisture to support substantial tree growth on the dry uplands and terraces. A few hawthorn trees (*Crataegus* sp.) grow on the upper and lower terrace and scarp slopes and one Christ’s Thorn tree (*Paliurus spina-christi* Mill.) has been observed in this zone as well. These trees are all expected components of the oak forest. In addition, the dry terraces are planted with a thorny oleaster (*Elaeagnus angustifolia* L.), a hedgerow plant. Grape (*Vitis vinifera* L.), pistachio (*Pistacia vera* L.) and fig (*Ficus carica* L.) are grown in vineyards and orchards.

The greater availability of subsurface water and runoff permits a different set of trees to grow in seasonally flowing valleys, by springs, and along the seepages of the bluffs overlooking the Euphrates. Willow (*Salix* sp.), fig, Christ’s Thorn, and sumac (*Rhus coriaria* L.) grow wild. Oriental plane (*Platanus orientalis* L.) and various fruit trees are planted. However, even in these moist zones, the human population allows only a few stands of trees to grow.

The Euphrates flood plain itself is a narrow stretch of land that provides timber and some firewood for villagers. Willow, poplar (*Populus euphratica* L.), and tamarisk (*Tamarix* sp.) are common. These three types grow rapidly, but they too are cut as soon as they reach a useful size.

There are no large undisturbed stands of trees, so any firewood must come from pruning of cultivated trees or the very limited wild vegetation. Ubiquitous piles of neatly stacked dung cakes scattered around the present-day village are a further sign that wood is a scarce commodity. Dung is still an important fuel in the villages of southeastern Turkey.

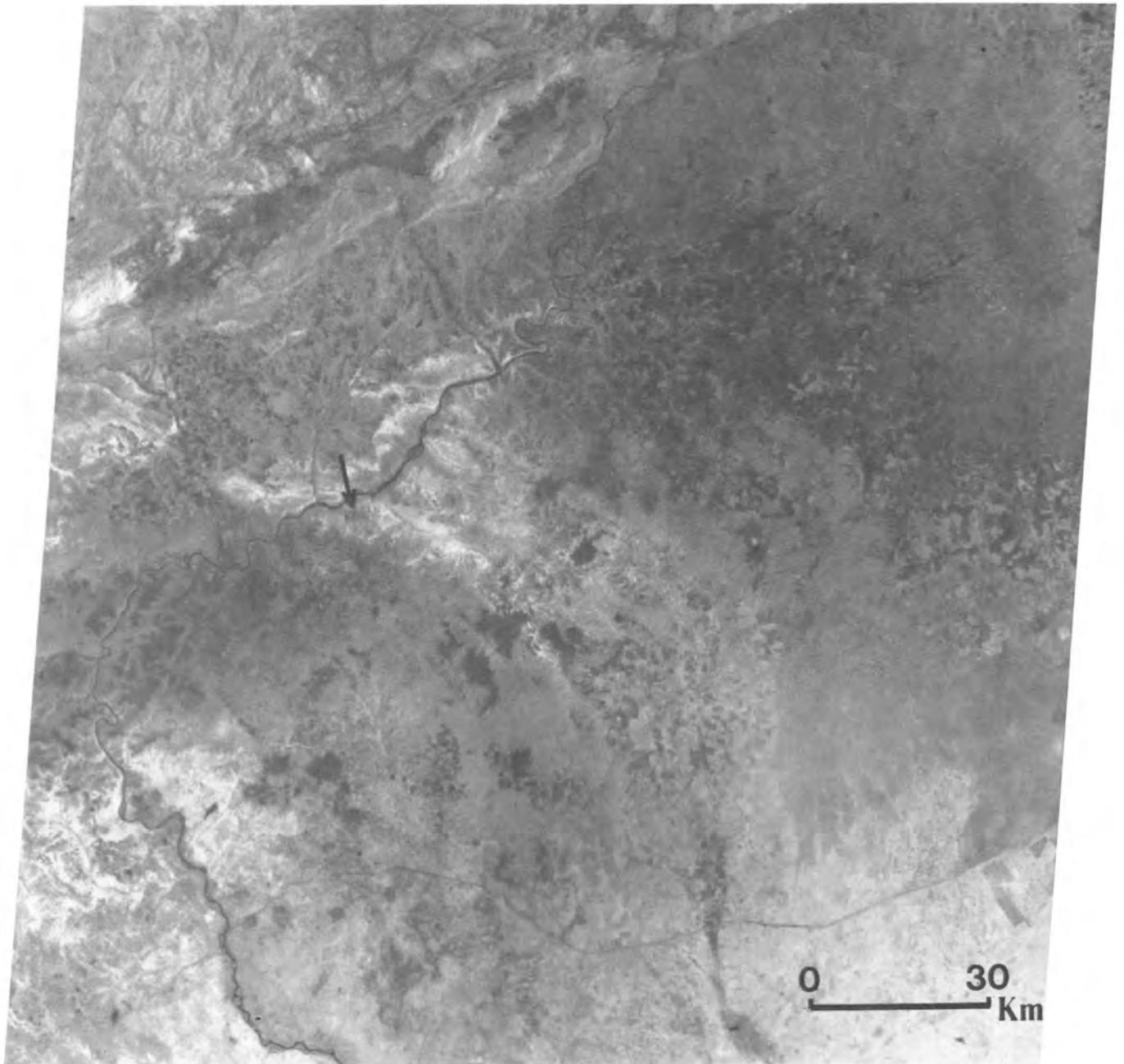


PLATE 1. LANDSAT Image of the Urfa-Adiyaman Area from the Anti-Taurus Mountains in the North to the Syrian Jazirah in the South. Note the Distinctive White, Gully-eroded Limestone Terrain (Land System 4 on fig. 1.2; see also plate 2a; Photograph: LANDSAT Image no. E-22050-07201-7. July 2, 1981).

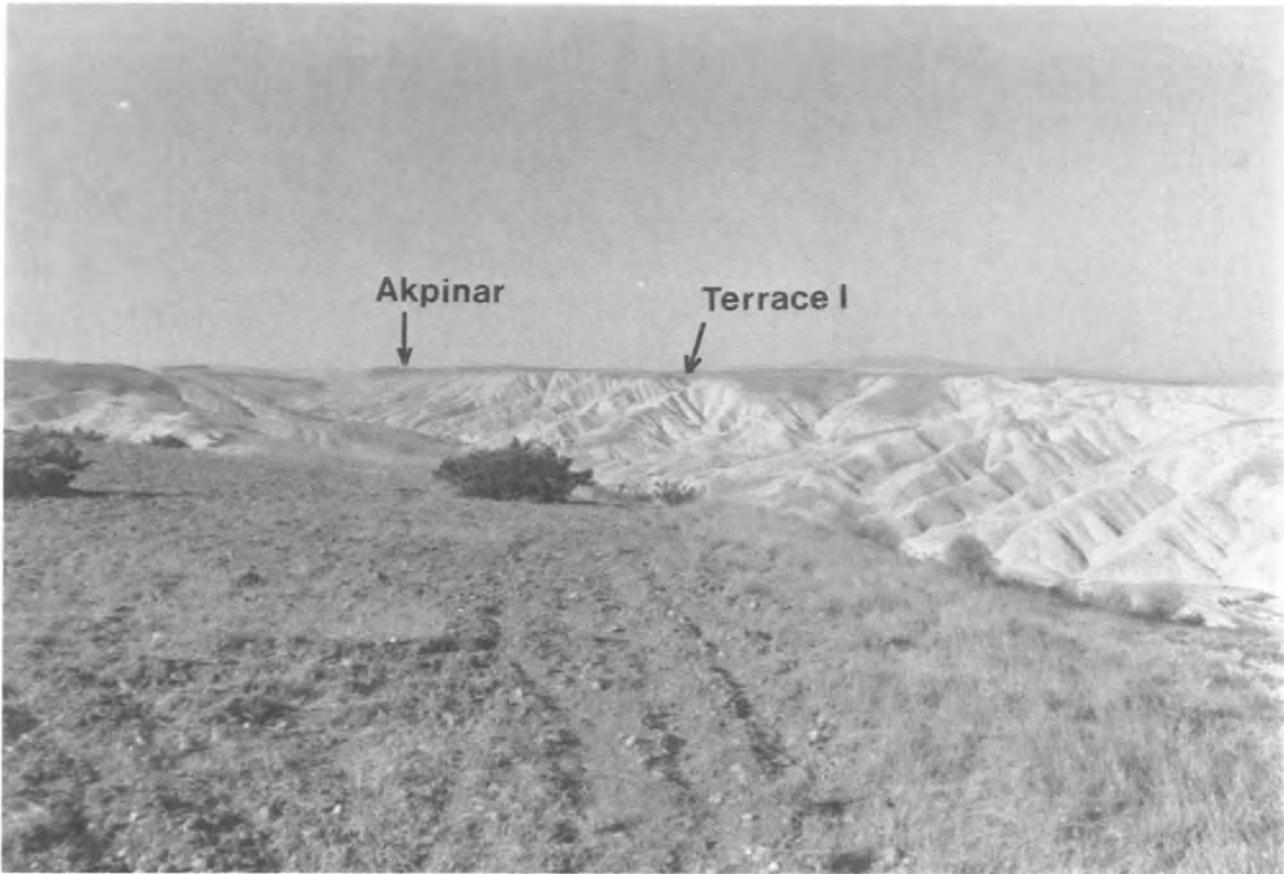


PLATE 2a. Gully-eroded Land Developed on Cretaceous Limestone Veneered with Gravels of Terrace I. In the Vicinity of Akpınar Village, looking South toward Limestone Ridge (in background).



PLATE 2b. The Village of Cümcüme looking Southeast towards the Valley of the İncesu Deresi, Distinguished by the Heavily Eroded Valley Side Slopes (by J. Wilkinson).



PLATE 3. Kurban Höyük from the Northern (right) Bank of the Euphrates. Note the Extensive Gravel Fan behind the Mound which Rests on Euphrates Terrace III. The Euphrates Flood Plain is in the Foreground, Limestone Hills are in the Background (by J. Wilkinson).



PLATE 4a. View looking Southwest, of the Eroded Euphrates Terrace II Showing Site 5 (Kulluk Tepe; extreme right) and a Truncated Gravel Fan of the Terrace III Stage to the left (by J. Wilkinson).



PLATE 4b. View from the Halaf Period Site 20 towards Eroded Limestone Bluff (in shade) Resulting from Spring Sapping during an Earlier Period. The Ruined Village of Dokuzköy is in the Background.

CHAPTER 2

THE RURAL SETTLEMENT AND AGRARIAN
ECONOMY OF THE URFA REGION

Before examining the evidence of archaeological settlement, it is necessary to outline the settlement geography, land use, and economy of the region during the twentieth century. This is treated with the full realization that the rural economy has been radically transformed during the last fifty years by the advent of mechanization, much of it being applied to the production of cash crops. Nevertheless, modern regional variations in crop production do, in part, reflect long-term environmental conditions and constraints and are therefore relevant to the interpretation of past cropping patterns. Moreover, the present settlement system and agricultural economy represent another phase of settlement, and, like the preceding archaeological phases, this reflects a response by the population to the economic conditions of the day. It must however be constantly borne in mind that we are not dealing with a subsistence economy, and consequently cropping areas, for example, are grossly inflated over those of the past in order to supply food for the growing urban markets.

A. THE SETTLEMENT HIERARCHY

The modern settlement hierarchy is most readily perceived through the hierarchy of settlements as ranked for administrative purposes. The following ranks have been interpreted from administrative maps of the Bozova district with additional details being furnished by personal observation.

Urfa, the provincial capital, with a population in 1970 of 100,654, is the main administrative, commercial, and educational center of the province. It functions as the main node of road communications (it lacks both a railway and an airport), and provides an extensive range of services, as well as a large suq, for the benefit of the urban and rural population. It is the prime settlement of the province and overshadows by a considerable margin the settlement rank beneath: the district centers.

The district centers are small towns with a limited range of functions: a secondary school, a clinic, a police station, one or two restaurants/tea houses, a small range of shops as well as a small market. Bozova, the district center for Cümçüme, is one of eight such small towns within Urfa province. The district represents the smallest administrative area for which agricultural statistics are readily available, and this source supplies the basic data for the following analysis of crop production.

Two subdistricts, subsumed within the Bozova district, share the role of administration and provision of local services with Bozova. The subdistrict centers are little more than villages but do provide shops, a school, and a police post.

Villages with *mukhtars* (headman) represent the next rank in the settlement hierarchy and contain the bulk of the rural population. They form the main village network (seventy-four villages occur in Bozova district), and provide a limited range of services. For example, Yaslica, a village 7 km southwest of Cümcüme, possesses one or two small shops, a school, and a mosque. At the time of the village survey in 1967 (Köy 1967), from a total of 644 villages within Urfa province, 272 had schools, 80 had mosques, 74 had small shops, 98 had flour mills, either motor driven or water mills, 42 had guest rooms, 35 had police posts, and 16 had coffee or tea houses. Although the statistics have certainly changed since 1967, especially regarding the number of schools, they are still applicable in demonstrating the limited range of functions provided at the village level.

Finally, at the base of the hierarchy, are small hamlets without *mukhtars*. These are the most common element in the settlement system (103 in the Bozova district), but usually comprise little more than a small group of buildings populated by one or two extended families. Classification of the villages and hamlets according to their population and number demonstrates that settlements with a population of approximately 100 are most common in the Urfa region. Settlements above this size decrease in number in accordance with the rank-size rule and equally, settlements below this size are less frequent (Gülöksüz 1975, p. 148). The significance of this 'lower limb' relationship is discussed in more detail in chapters 4 to 6.

The rural population of the province mainly consists of Turkish (Osmanli and Turkmen varieties) and Kurdish speakers, but in the south near the frontier with Syria villages include a significant proportion of Arabic speakers.

Table 2.1. Nearest Neighbor Statistics for Different Settlement Types in Bozova District.

<i>Category</i>	<i>No. of Measurements</i>	<i>Mean Distance</i>	<i>Percentage of Total</i>
Between villages with <i>mukhtars</i> and nearest neighbor hamlets without	62	3.25 km	49.0
Between villages with <i>mukhtars</i> and other nearest neighbor villages with <i>mukhtars</i>	22	2.98 km	17.0
Between hamlets and other nearest neighbor hamlets	42	2.78 km	33.0
Mean distance between all nearest neighbors (n = 126) 3.02 km			

Available statistics and maps do not enable an accurate spatial analysis of the rural settlement geography to be made, but maps showing the above mentioned settlement hierarchy do provide data on approximate inter-settlement spacing using the shortest road distance between villages. Analysis of inter-settlement spacing enabled us to establish

whether adjacent pairs of villages with *mukhtars*, hamlets without *mukhtars* or combinations of the two were significantly further apart (tab. 2.1).

Villages with *mukhtars* were, in sixty-two nearest neighbor situations (49 percent), closest to hamlets without *mukhtars*. In general however, as is shown on figure 2.1, the mean inter-settlement spacing was not significantly different. Distances ranged from a minimum of 0.30 km, where hamlets were little more than extensions of modern villages, up to a maximum of 9.90 km. Villages with *mukhtars* were never less than 1.50 km apart. The mean distance between settlements was about 3 km, which places Cümçüme as slightly more remote from its neighbors (3.20, 7.20, and 8.30 km) than most villages of the district. This is, in part at least, a result of the constraining effect of topography and water supply which limit the optimum number of settlement locations. These factors may also explain variations in settlement hierarchy throughout the district. To the west in agricultural lowlands within the Urfa-Gaziantep plateau, villages with *mukhtars* were either adjacent to other villages with *mukhtars* or, rarely, were surrounded by up to four satellite hamlets. In the east and southeast, where terrain was broken and uplands were more extensive (see fig. 2.5), hamlets were more frequent and consequently hamlets were usually closer to hamlets. Conversely, villages with *mukhtars* were less likely to be close to other villages with *mukhtars*.

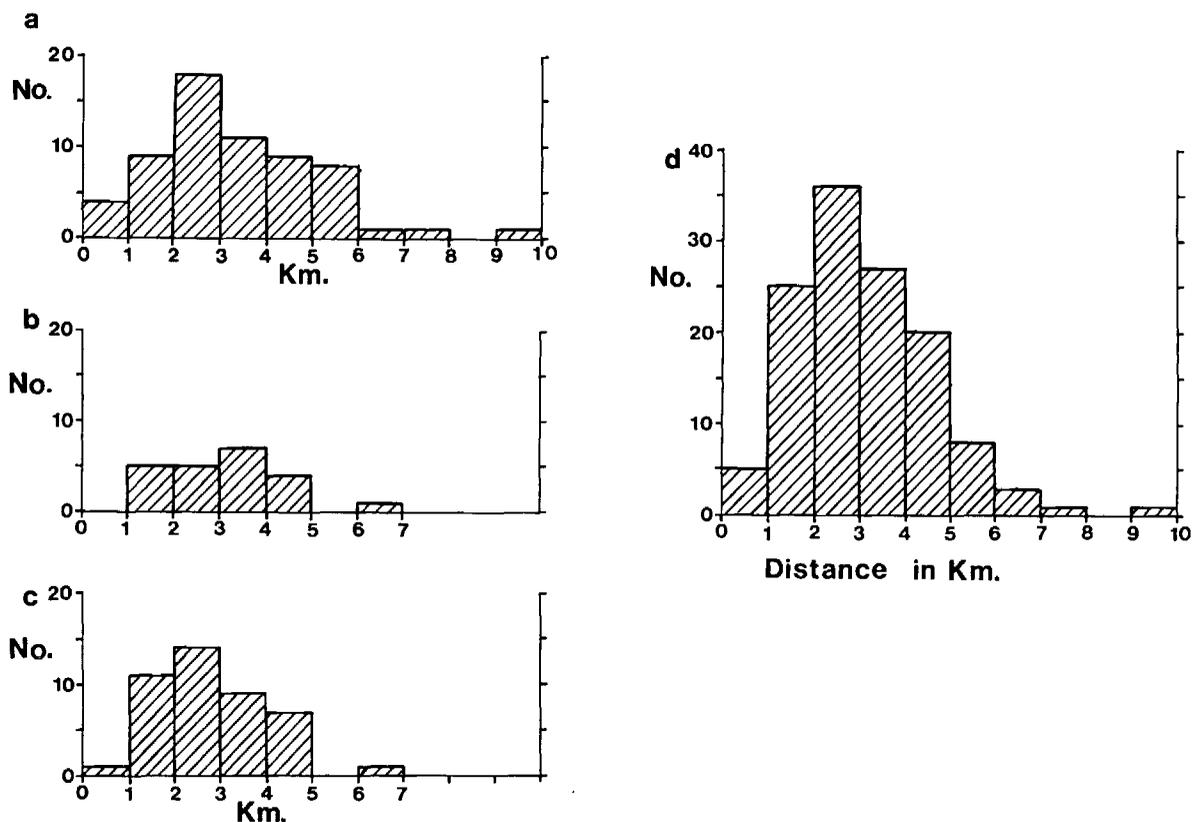


Figure 2.1. Nearest Neighbor Distances Between Villages with *Mukhtars* and Hamlets (a); Villages with *Mukhtars* and Other Villages with *Mukhtars* (b); Hamlets and Other Hamlets (c); and Distances Between Nearest Neighbors Irrespective of Rank (d); (see table 2.1).

The data culled from administrative maps and the village inventory, although only approximate, enable the modal settlement pattern to be summarized. This will, later in the

report, be used as a yardstick against which the settlement patterns of the archaeological record are measured.

The fundamental settlement is the small, nucleated village, usually covering 2–12 hectare (ha) and containing some 200–1,000 people (the mean village population for Urfa province in 1962–64 was 433 per village). Each village has a *mukhtar*, but he is not always in residence. Although the villages have been self sufficient in basic foods during the twentieth century, they have become increasingly reliant upon distant centers, notably Urfa, for essential services and supplies. The villages, most of which are between 2 and 10 km apart, have nominal territories of 1–5 km radius. In Bozova district, the number of villages (74) and dependent hamlets (103) when viewed in conjunction with settlement spacing, implies that each village had rarely more than one or two hamlets within its territory. Cümcüme, for example, had Dokuzköy, a small settlement on the high terrace (terrace I), which was abandoned early in the twentieth century, and a single family dwelling 3.20 km to the south of the village (fig. 2.6). The hamlet of Akpınar, also on the high terrace, although not within the immediate territory of its nearest neighbors (Şaşkan, Cümcüme, and Arikök), is classified as a settlement without a *mukhtar*, and is clearly subordinate in size and status to the neighboring villages.

The identification of this relatively even network of settlements, each with usually one or two satellites, is important to both the modern settlement geography and to an understanding of past settlement patterns as is elaborated in chapters 4 and 5.

B. AGRICULTURAL TRENDS IN THE URFA REGION DURING THE TWENTIETH CENTURY

Since the establishment of the Turkish Republic in October 1923, there has been a steady rise in population together with a dramatic rise in the overall production of certain food crops. The rise was especially marked between 1950 and 1960 when population in Turkey rose by 32 percent and the amount of arable land increased by 55 percent (Dewdney 1971, p. 116). The increase in arable area was at the expense of grazing lands which, during the same period, fell by 24 percent even though there was a concomitant increase in livestock numbers. Most of the newly cultivated land went to the growth of cereals, and southeastern Turkey shared in this growth. Crucial to the spread of cultivation was of course the adoption of tractors, combine harvesters, and other mechanical equipment. The former, for example, which numbered less than 2,000 in 1948, rose to 42,000 in 1960 and reached 440,000 by 1979. The rise in crop production was in fact primarily a result of increases in the cultivated area. This trend has inevitably led to the cultivation of some unsuitable soils, which, when combined with some overgrazing, will inevitably result in the deterioration of many marginal lands. In southeastern Turkey as a whole, the arable extension has, for the period 1950–1969, been associated with a slight declining trend in wheat yields from a little over 1,000 kg/ha in 1950 to around 800 kg/ha in 1969 (Forker 1972, fig. 5; note that this did not appear to be the case for Urfa province however, see below).

Crop yields and changes in cultivated area (fig. 2.2) detail these trends for the province of Urfa from 1930, prior to mechanization, until 1979 (Source: *Agricultural Structure and Production*, The State Institute of Statistics, Ankara). Wheat yields fluctuated widely in

response to yearly changes in weather, but exhibited no discernible increase during the period. Cultivated area, in contrast, rose more than fourfold with the bulk of the increase taking place between 1950 and 1960. This was the period of most rapid mechanization when farm prices for wheat were also rising, although to a lesser extent (Forker 1972, fig. 9). Yields for barley and lentils for the same period again show little increase. Areas of barley cultivation only showed a slight increase, whereas lentils showed a more rapid rise, first during the early 1950s and secondly during the late 1970s.

It might be expected that a consequence of such an expansion of cultivated area would be a decline in livestock numbers, but this was only true in the case of goats and cows. Sheep, on the other hand, continued to increase. To accommodate such increasing pressure on the land, greater reliance must have been placed upon stall feeding and on grazing on the stubble at different times of the year.

The above statistics demonstrate how the agrarian economy has shifted away from subsistence production towards progressively larger surpluses. However, even during the 1930s, it is likely that, as in the province of Elaziğ, many villages were already producing more crops than were required to sustain levels of bare subsistence (Hillman 1973b, p. 232).

Table 2.2. Summary of Crop Yields: Urfa Province.

Wheat		
Urfa province*, Long-term mean	965 kg/ha (42 years)	range 400–1650 kg/ha
Bozova, 1945	540 kg/ha (1 year)	
Bozova, 1946	606 kg/ha (1 year)	
Bozova, 1979	800 kg/ha (1 year)	
Cümcüme, 1981–82	1169 kg/ha (2 years)	range 640–1600 kg/ha
Barley		
Urfa province, Long-term mean	988 kg/ha (42 years)	range 132–1616 kg/ha
Bozova, 1945–46	500 kg/ha (2 years)	
Lentils		
Urfa province, Long-term mean	897 kg/ha (44 years)	range 65–2204 kg/ha
Bozova, 1945	862 kg/ha (1 year)	
Bozova, 1946	760 kg/ha (1 year)	
Bozova, 1979	600 kg/ha (1 year)	

*Urfa province and Bozova yields from *Tarimsal Yapı ve Üretim (Agricultural Structure and Production)* published by the State Institute of Statistics, Ankara.

The graphs presented on figure 2.2 indicate that long-term wheat yields ranged from 400–1,600 kg/ha for the province of Urfa (mean 965 kg/ha). Figures of 540 and 606 kg/ha were obtained for the Bozova district in 1945 and 1946, years characterized by rather low yields on the long term graph (tab. 2.2 and fig. 2.2). Estimates of modern wheat yields by farmers in and around Cümcüme ranged from 640–1,600 kg/ha (mean 1169). The above

TOWN AND COUNTRY IN SOUTHEASTERN ANATOLIA

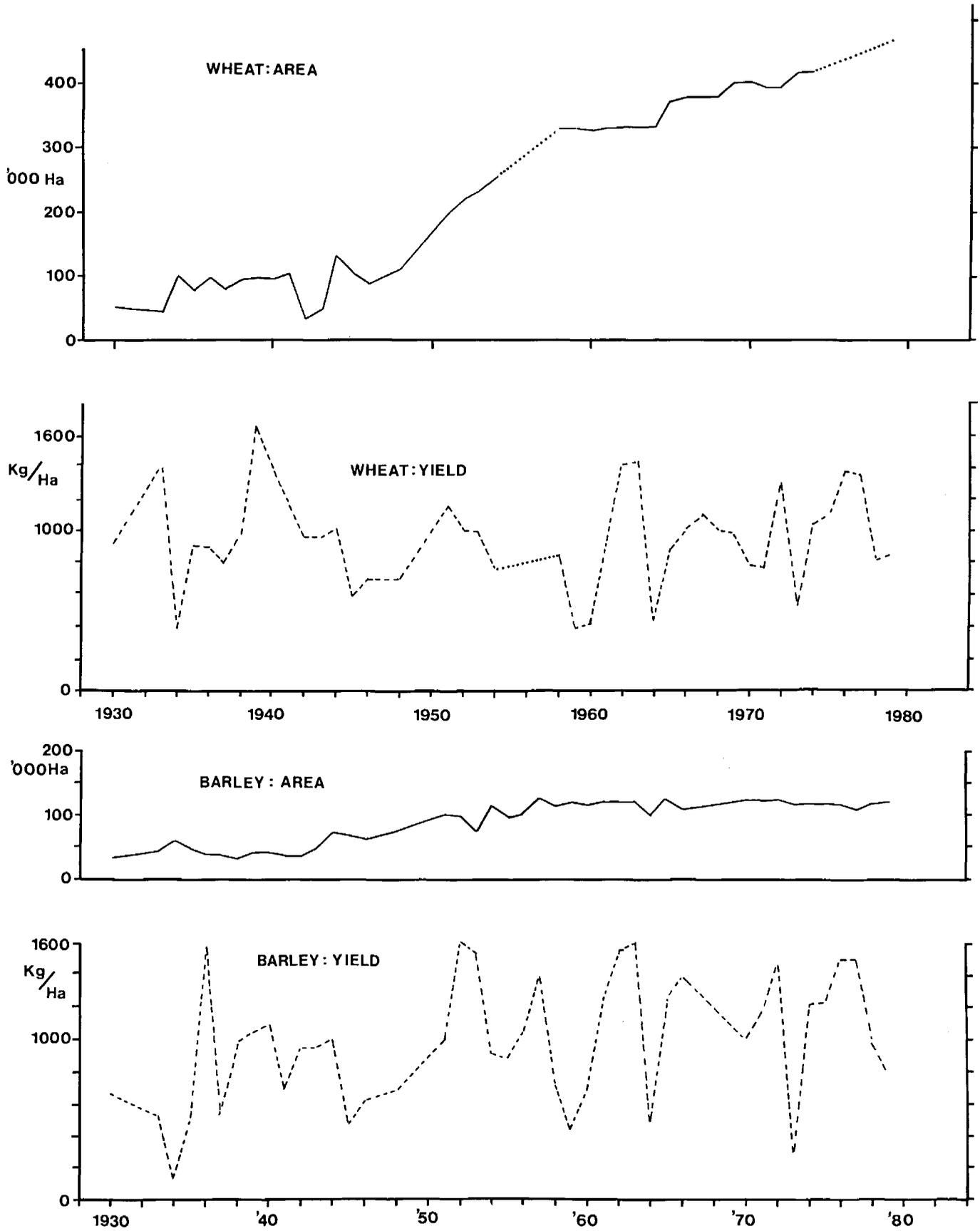


Figure 2.2. Cultivated Area and Crop Yields for Wheat and Barley in Urfa Province for 1930–1980.
(Source: *Agricultural Structure and Production*, State Institute of Statistics, Ankara.)

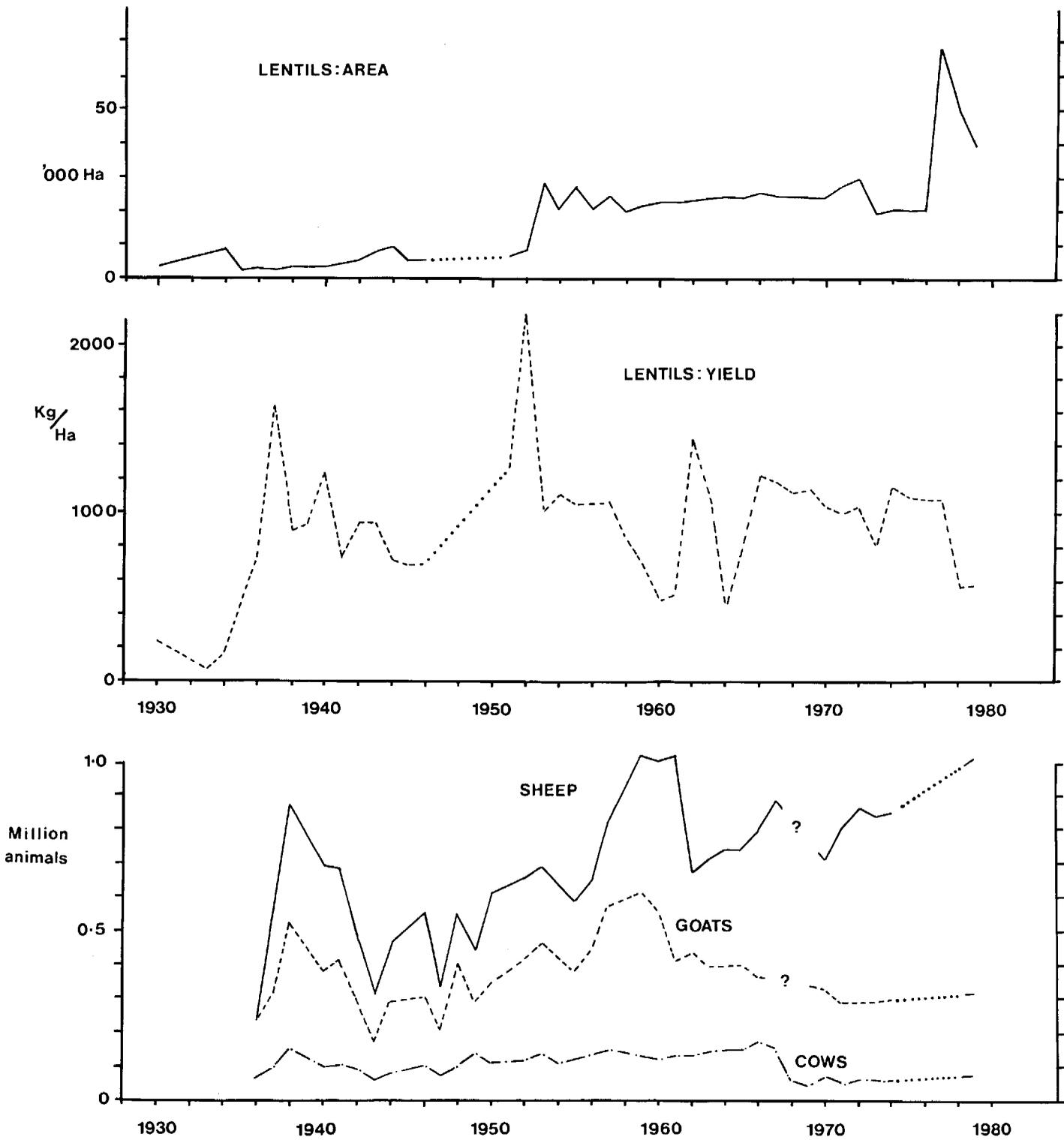


Figure 2.2 (cont.). Cultivated Area and Crop Yields for Lentils in Urfa Province for 1930–1980. Head of Livestock in Urfa Province for 1936–1980. (Source: *Agricultural Structure and Production*, State Institute of Statistics, Ankara.)

yields compare with estimates of 630 kg/ha for dry-farmed wheat at Aşvan in Elaziğ province during the 1930s (Hillman 1973b, p. 227) and a range of 500–1,500 kg/ha for Palestinian barleys and hard wheats under dry land, wooden plow agriculture (Zohary 1969, p. 56).

Although subject to substantial fluctuations resulting from annual weather variations, wheat yields for the Cümçüme-Bozova area can be estimated to between 500 and 1,000 kg/ha for dry land cultivation employing wooden plows for the pre-modern era. Of course, statistics recorded as an average over an entire province may mask a wide range of crop yields. For example, better quality lands which also were likely to have been those used during the period of archaeological record may be expected to show the highest yields if they were not used to the point of exhaustion. In contrast, marginal soils plowed up in recent years may be expected to show lower yields after the first few crops.

C. SPATIAL VARIATIONS IN LAND USE

During, for example, the third millennium B.C. the Cümçüme area shared many characteristics with the Syro-Mesopotamian area rather than the highlands and plateaus to the north, and it is pertinent to document how present day land use varies from north to south within this transition zone. As has already been shown in chapter 1, there is a rapid change in climate from cooler, wetter foothills and mountains within Adiyaman province to the semiarid plains which surround Harran near the Syrian border.

Patterns of crop production as well as crop yields reflect, in part, this general environmental gradient from north to south. When viewed from the perspective of the province, the following contrasts in land use become apparent (fig. 2.3). The main crop of Adiyaman province, in terms of gross weight, is the grape. Wheat and barley are of lesser importance, followed by modern cash crops: cotton and tobacco.

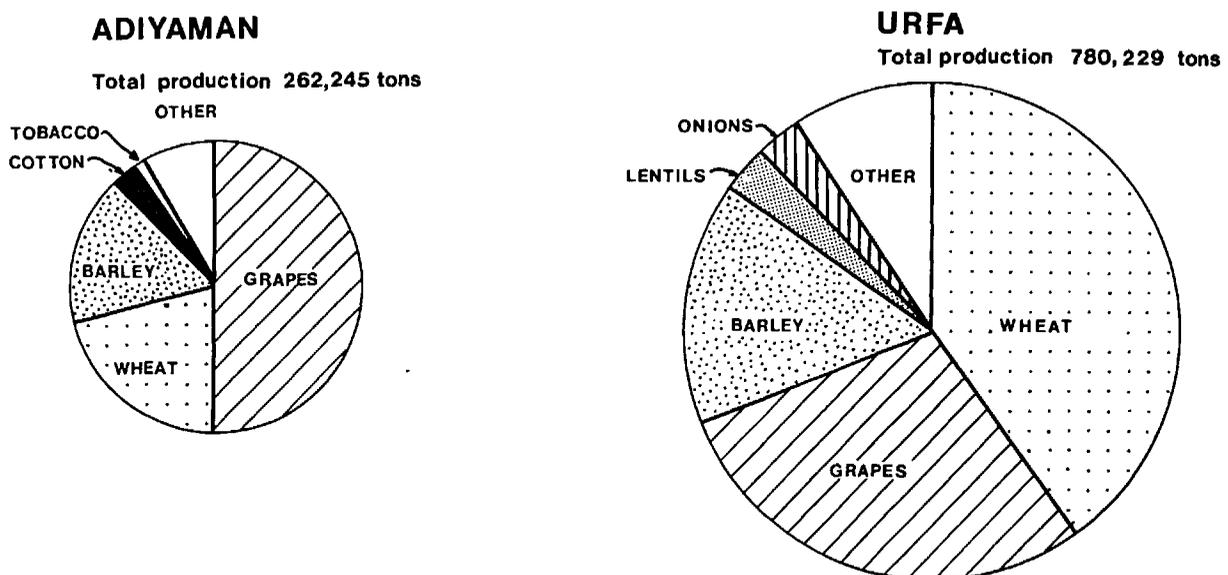


Figure 2.3. Major Crops of Adiyaman and Urfa Provinces, 1970.

In contrast, the drier province of Urfa produces more wheat than grapes, roughly the same proportion of barley as Adiyaman, as well as a significant proportion of lentils. The

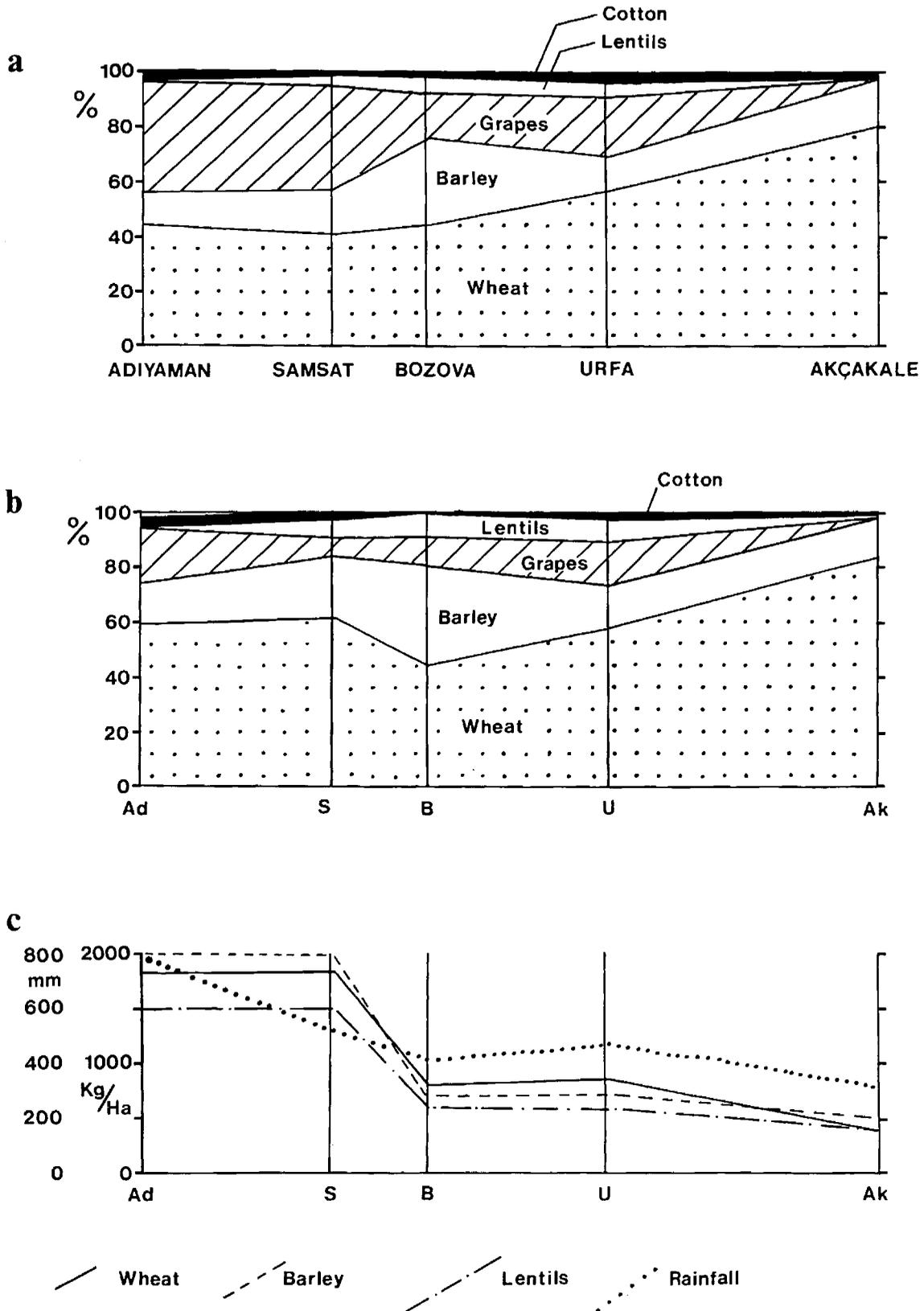


Figure 2.4. (a) The Percentage Change in Production of Major Crops from North to South Across the Urfa-Adiyaman Area. (b) The Percentage Change in the Area of Major Crops from North to South Across the Urfa-Adiyaman Area. (c) The Variation in Crop Yields from North to South Compared with Mean Annual Rainfall at the District Centers. (Source: *Agricultural Structure and Production*, 1979.)

difference is compounded when the pastoral component is computed in terms of head of livestock per ha of cultivated land. Adiyaman has almost double the sheep, four times the goats, and almost three times as many cows per unit area as Urfa province. A large proportion of the higher number of animals in Adiyaman are probably pastured on the uplands and highlands, which, owing to the stony soils and steep gradients, are unsuitable for cultivation.

The above statistics are supported by land use data derived from the smaller administrative area: the district (from: *Agriculture Structure and Production*, Ankara, 1979). A roughly north-south transect (fig. 2.4) shows the five main crops as a percentage of total crop production (fig. 2.4a) and total cropped area of each district (fig. 2.4b) for the districts of Adiyaman, Samsat, Bozova, Urfa, and Akçakale (N.B. the provincial capitals are also centers of their own districts: *merkez*). These smaller units of cultivated land, which range from a minimum of 18,400 ha in Samsat district to a maximum of 161,000 ha in Urfa district, show a clear trend from north to south. Firstly, wheat assumes a greater importance in the drier southern area, whereas grapes become less significant. Barley attains its maximum significance, for unknown reasons, in Bozova province. Lentils show a similar distribution, being most important in the districts of Bozova and Urfa. In the wetter uplands to the north, lentils are squeezed out by grapes and in the semiarid south by the dominant cereals. A similar trend is apparent in the percentages of cropped areas.

Within a broader context, the Urfa province can be viewed within the soil zone of Haplic and Calcic xerosols (F.A.O. 1977, p. 67) which are characterized by poor crops of barley and wheat grown in alternation with fallow years. In drier areas of this zone barley, pulses, and lentils become more extensive than wheat where the use of tractors has encouraged the extension of cultivation to marginal land with shallow soils or low rainfall (F.A.O. 1977, pp. 67–68). The provinces analyzed on figure 2.4a and b would appear to straddle this zone with at first an increasing reliance being placed upon lentils towards the south, followed in turn by a concentration on cereal farming in the still drier areas bordering on the Syrian wheat and barley belt.

The trend favoring a predominantly cereal economy towards the south is paralleled by a general decline in all crop yields from north to south. These are indicated, together with mean annual rainfall, on figure 2.4c. Although rainfall does clearly decline from north to south, the abrupt decline in crop yields that occurs in the vicinity of the Euphrates might reflect, in addition to climatic factors, differences in cropping practice and fertilizer application between the provinces of Urfa and Adiyaman.

Crop production statistics from the district level, when viewed in combination with LANDSAT images, enabled the spatial pattern of agriculture to be estimated for the same area as the land systems map (fig. 1.2 and fig. 2.5). Some of the topographically or geologically defined land use classes (e.g., 1, 8, 9, and 10 below) are identical to those presented on figure 1.2, but cultivated land was mapped again using the distinctive rectilinear images of field patterns. Although ground control within the Kurban Höyük-Cümcüme area was good as a result of detailed plotting of land use, the image of any given crop type could not be traced consistently across the entire image area (140 km from north to south). This was partly a result of differential ripening or growth of crops in response to spatial variations in climate over the area. Nevertheless, in spite of the difficulty of identifying specific crop types, it was possible to define ten land use areas:

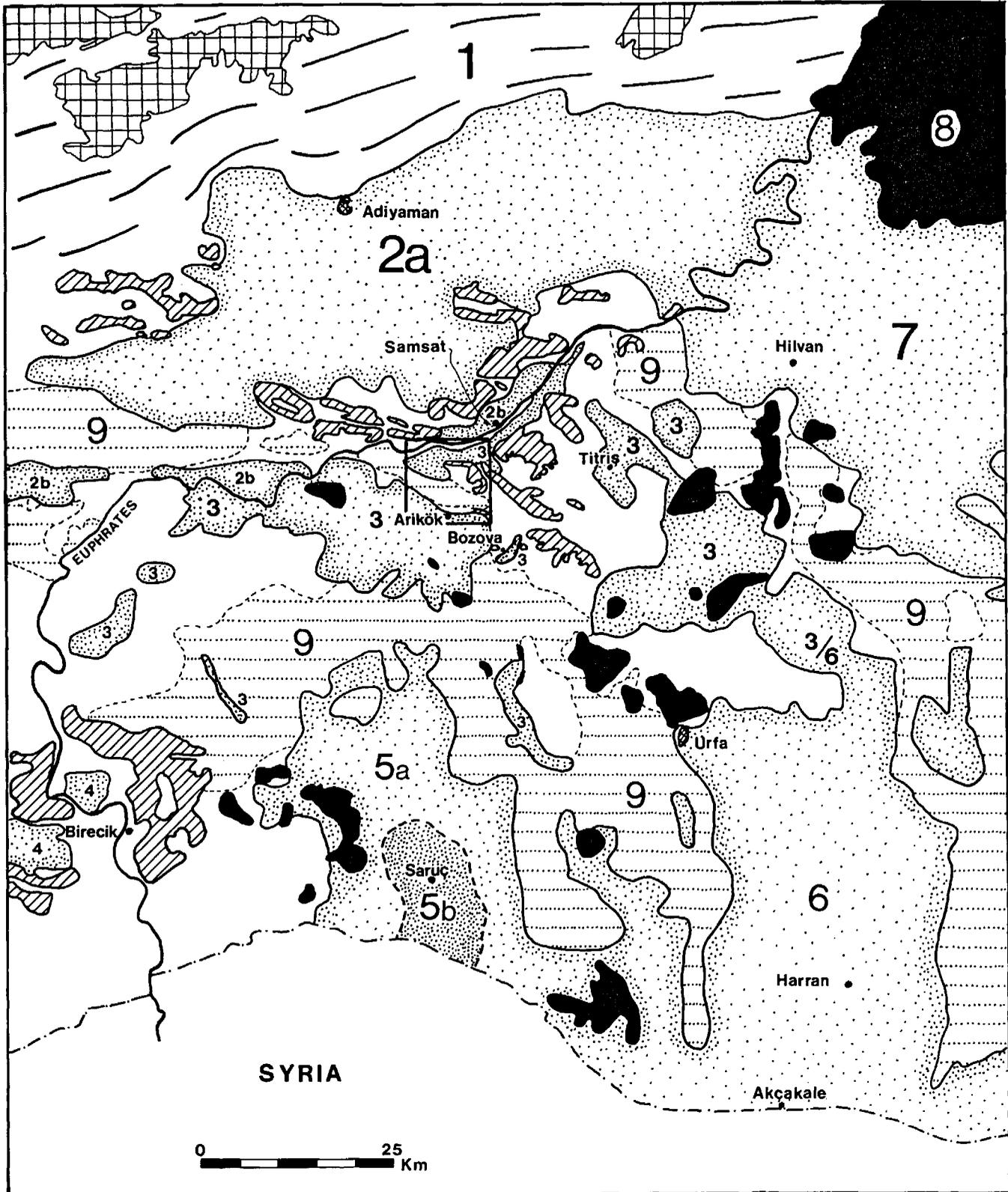


Figure 2.5. Land Use Subregions Within the Urfa-Adiyaman Area. Main Cultivated Areas Based on LANDSAT are Shown Stippled. Land Use Types 1-10 are Summarized in the Text.

1. The Anti-Taurus mountains and foothills: Cereal farming and viticulture; tree crops (pistachios and apricots) are important on the hills which also provided pasture for sheep, goats, and cattle (also land systems 1 and 2, fig. 1.2).
- 2a. Plio-Pleistocene terraces and scarplands: Cereal farming with viticulture and a minor component of lentil cultivation. Cash crops include rice along some perennial streams as well as tobacco and cotton (land system 3, fig. 1.2).
- 2b. North bank Euphrates terraces and adjacent areas: Land use is similar to that given for 2a.
3. Lowlands within the Urfa-Gaziantep plateau and the southern terraces of the Euphrates, including the Kurban Höyük-Cümcüme area: Cereal and lentil cultivation with subsidiary viticulture.
4. Cereal farming with viticulture in the Birecik area: Lentils are a subsidiary crop and olives become significant to the west of the Euphrates.
- 5a. Outer zone of the Saruç basin: Mainly cereal cultivation.
- 5b. Inner zone of the Saruç basin: Cereal cultivation and irrigated crops including significant areas of cotton.
6. Harran-Urfa basin: Extensive cereal cultivation also millet and sesame grown (Brice 1955, pp. 161–68).
7. Hilvan-Siverik plateau: Cereal cultivation with viticulture; also lentils.
8. Uncultivated basalt uplands (land system 7A, fig. 1.2).
9. Uncultivated land and rough pasture on the uplands of the Urfa-Gaziantep plateau (land system 6, fig. 1.2).
10. Highly eroded limestone and badlands (land system 4, fig. 1.2).

The areas which remain blank on figure 2.5 did not provide a distinct image but can be mainly regarded as comprising mixed cultivation and smaller areas of upland.

From the evidence supplied in the preceding section outlining the rapid increase in cultivated area during the last fifty years, it is evident that the cultivated area shown is possibly as much as 2–4 times greater than that of pre-modern times. It is suspected, but cannot be proved with the data available, that an even greater expansion of cropped area took place in areas 2a and possibly 7 during the twentieth century. The southern cultivated areas 3–6 have all probably been extended at the expense of the upland area 9, and this movement has probably also resulted in intensified erosion of the badland area, zone 10.

Although only a generalized assessment, the land use map (fig. 2.5) does clearly show the transition from broad basins dominated by cereal cultivation in the south (areas 5 and 6) through smaller lowlands characterized by cereal and lentil cultivation and viticulture in the vicinity of the Euphrates, to mixed farming with a greater reliance on pastoralism and tree crops in the Anti-Taurus mountains and foothills to the north. Also apparent is the broken belt of cultivation which continues the Harran-Urfa basin to the northwest towards the Euphrates in the Şaşkan-Samsat-Lidar area. It is noteworthy that the important third millennium site of Titriş Höyük (Site 43, *App. A*) occupied a basin within this belt. In contrast, the lowlands of Yaylak-Arikök-Yaslica in the vicinity of Kurban Höyük are separated from the Saruç basin to the south by the upland zone 9. It is within the zone of

terraces extending between the Yaylak lowlands and the above mentioned extension of the Harran lowlands that the Chalcolithic and Early Bronze Age site of Kurban Höyük developed.

D. CÜMCÜME: ITS TERRITORY AND LAND USE

The headquarters of the Kurban Höyük excavations were located in Cümcüme, a small village of Kurdish speakers which overlooked the Euphrates river. Although the village was not subjected to cadastral mapping during the village inventory of 1967 or before, it was possible to obtain some general statistics on the village and its land use during the field program during the early 1980s. The village contained some forty-seven houses, all of mudbrick construction, mainly within walled courtyards, which held an estimated population of 260–330 persons. Its area of approximately 5 ha was comparable to the mounded area of Kurban Höyük (5–6 ha, depending on the estimated site perimeter). Although situated 2.20 km east of Kurban Höyük, the topographic configuration of the area suggests that they shared the same site territory. That of Cümcüme (fig. 2.6) was defined by the Euphrates river (Firat Nehri) to the north, the İncesu Deresi and one of its left bank tributaries to the east, and an unnamed dry valley to the west. The southern limit followed approximately the watershed of the limestone uplands which divided Cümcüme's territory from those of Arikök and Yaslica. The territory of the modern village falls into four main land use zones:

- a. The Euphrates river and its annual flood land. Most of the flood plain was seasonally inundated and its main agricultural function was to provide water and grazing for livestock. Area: ca. 192 ha.
- b. The main river terrace surrounding the village (terrace III) together with a small, higher terrace (terrace II) which overlooked terrace III to the west. The total area of some 858 ha, including 710–750 ha of dry farmed and irrigated land formed the main cultivated area of the village. The remaining 100 ha was taken up by uncultivated slopes, dry valleys, and gravel fans.
- c. The high terrace (terrace I) which extended over some 1,163 ha between the limestone hills and steep limestone slopes which overlooked terrace III. The cultivated area of this terrace extended onto the lower limestone slopes and provided a subsidiary cultivated area given over to large, dry-farmed fields which, because of their distance from the village (2–5 km), lay fallow in some years.
- d. Waste land and rough pasture developed on thin, stony soils of the limestone uplands. Some marginal fields had once been cultivated within this terrain, but most of it was unusable except as sparse grazing land in the winter and spring. The total area within Cümcüme's territory of 181 ha has clearly diminished during the last century as the cultivated area of terrace I was extended onto the lower limestone slopes.

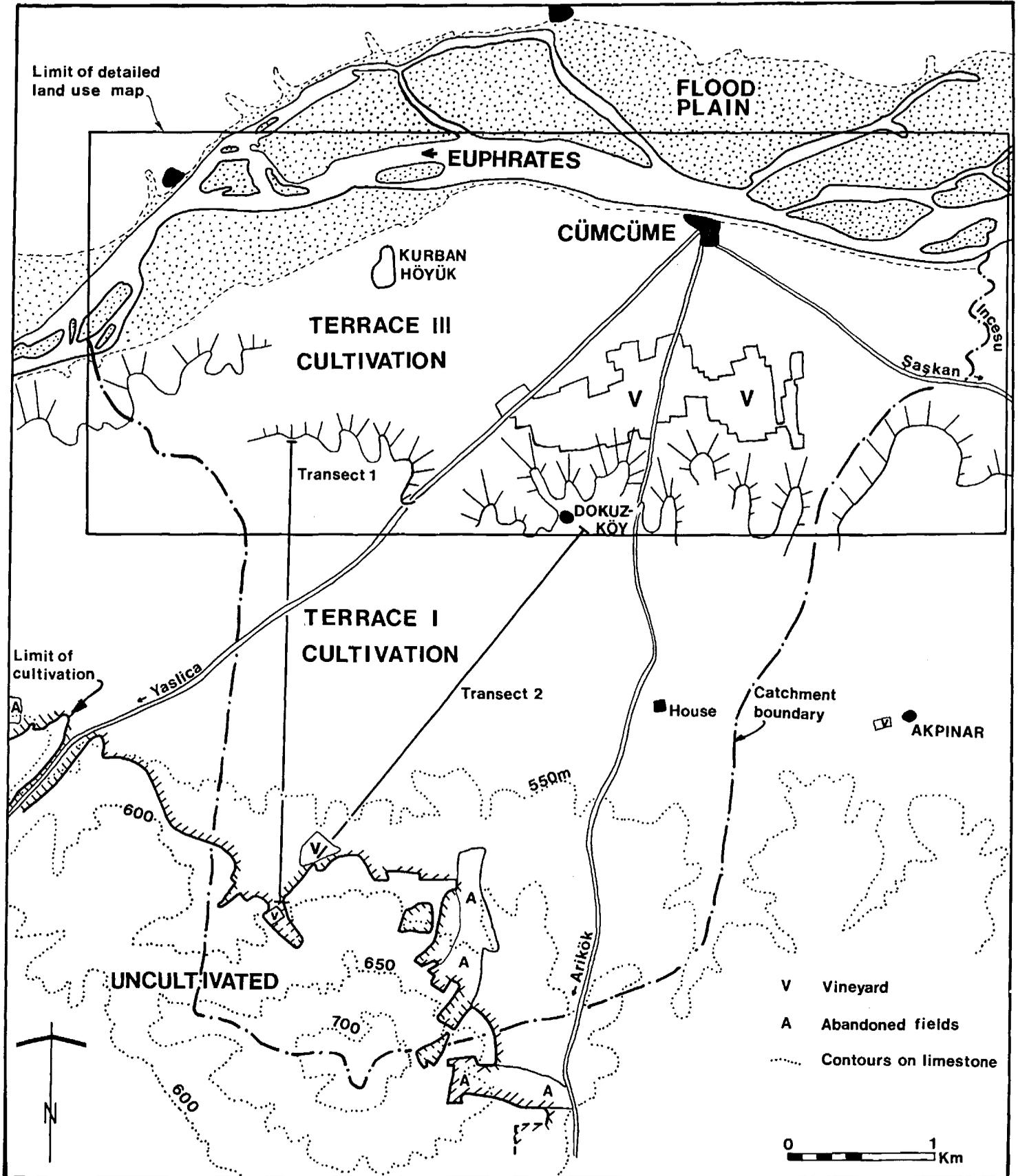


Figure 2.6. The Catchment of Cümcüme Showing the Main Cultivated and Uncultivated Areas and Outlying Settlements.

In addition to these broad agricultural zones, small garden plots located along the bluffs overlooking the Euphrates were irrigated for locally consumed vegetables. These included melon (*kavun*); water melon (*karpuz*); pumpkins (*balkabađı*); squash (*kabak*); cucumber (*hiyar*); eggplant (*patlacan*); okra (*bamya*); tomatoes (*domates*); pepper (*biber*); garlic (*sarimsak*), and onions (*sođan*).

The main cultivated area located on terrace III, was subdivided into long strip fields which were cultivated, mainly without irrigation, every year (fig. 2.7). The main field crops were wheat (*kirmiz buđday*) and lentils (*mercimek*); barley was also grown by some villagers, but it was not mapped separately. Subsidiary nonirrigated crops included wild vetch (*burçak*) and sesame (*susam*). A varying quantity of cotton was irrigated by two modern concrete conduits which received water pumped up 22 and 26 meters from the Euphrates. An additional, roughly constant area of 80 ha located on gravel fans and lower limestone slopes was under vineyards. Subsidiary tree crops within vineyards were figs (*incir*) and pistachios (*Antepfistiđi*). Finally, a small amount of land was either plowed or under fallow at the time of the land use survey (June-August each year). Such land was more extensive during the first year of the project (1981), but declined abruptly after 1982. Fallow would have been more prevalent within the traditional agricultural system, firstly as a means of allowing soil fertility to recover, and secondly as a means of replenishing soil moisture that is stored in the soil from the first winter without crops to the autumn in which crops are sown. Probably because of the anticipated abandonment of farm land in advance of the rising waters of the reservoir, the local farmers, both tenants and freeholders, were trying to extract as much from the land as possible.

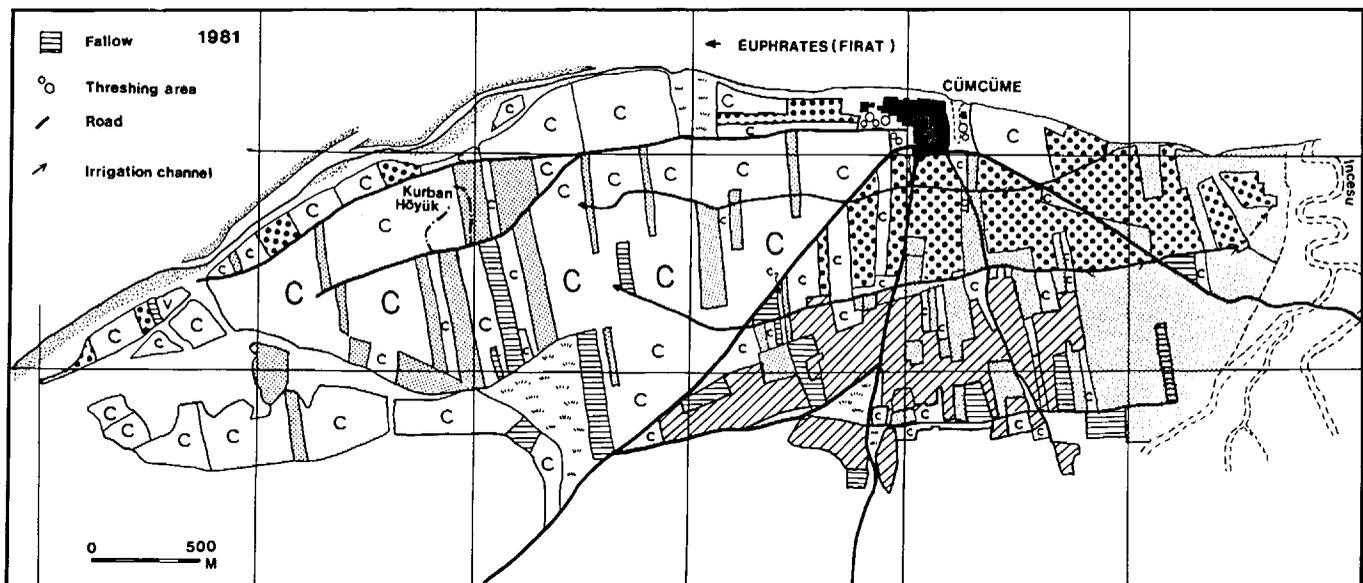


Figure 2.7a. Land Use in the Cümcüme Area, 1981.

Sequential land use maps as recorded in the field between 1981 and 1984, show how cropped area varied over a four year span of time (fig. 2.7a-d). The land use data was accurately recordable annually because during the initial topographic survey in 1981, it proved possible to position the theodolite in such a way as to produce accurate maps of all fields on terraces II and III from viewpoints on terrace I. The fields so mapped were simply

TOWN AND COUNTRY IN SOUTHEASTERN ANATOLIA

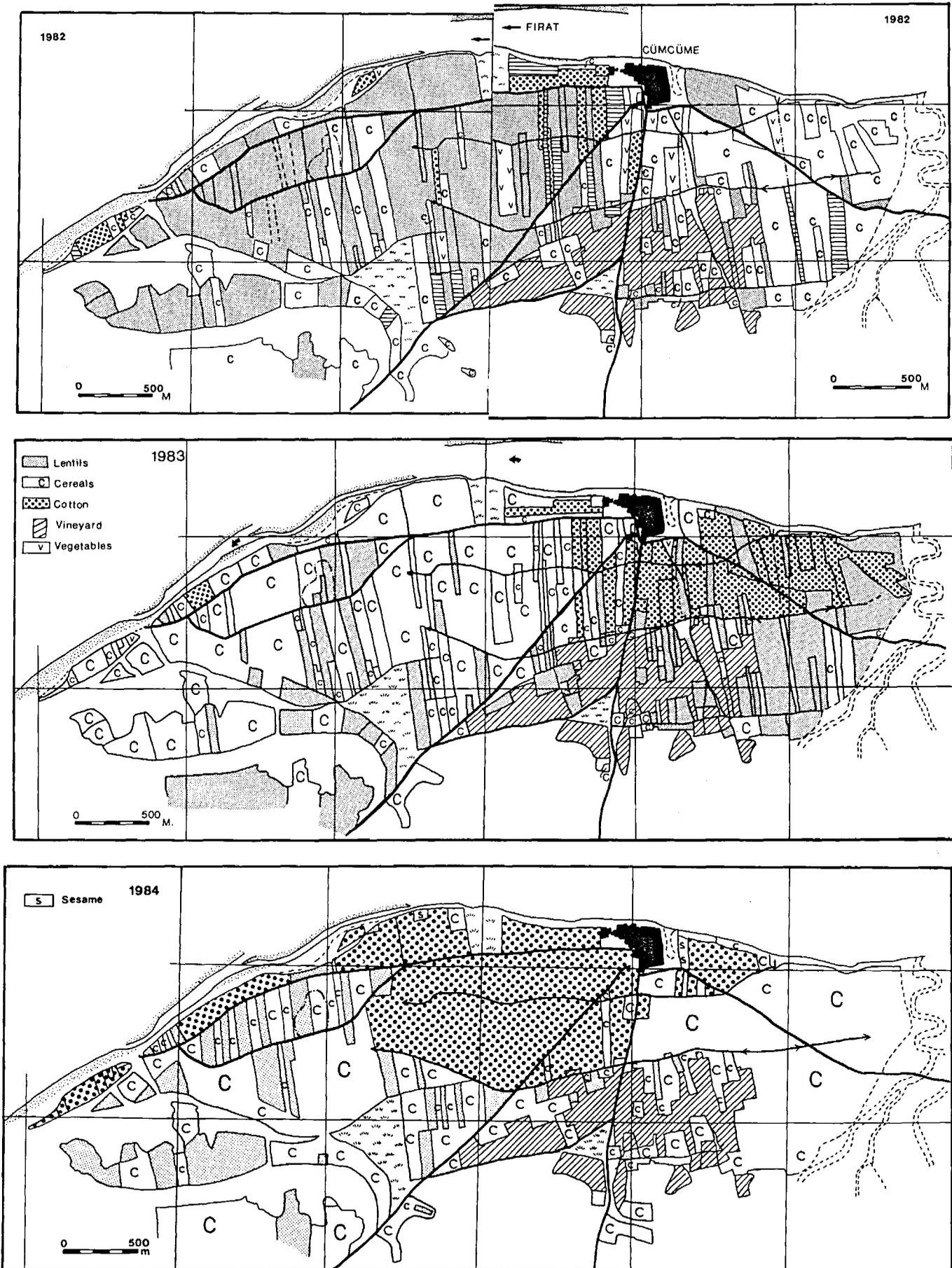


Figure 2.7b-d. Land Use in the Cümçüme Area from 1982-1984.

mapped again with the insertion of new field boundaries every year of the project. The mapping was made easier by the tendency of farmers to combine strips into larger holdings more suitable for mechanized plowing and harvesting.

In general, the lentil and cereal parcels alternated from year to year; the lentils, being nitrogen fixers, enriched the soil before the next cereal crop. For example, lentils were concentrated on lands southeast of the village in 1981 and 1983 and cereals in 1982 and 1984. To the west of the village, cereals predominated in 1981, lentils in 1982, cereals with some lentils in 1983, and a mix of cereals and lentils in 1984. Because the total area of cotton fluctuated widely from 27 to 203 ha, depending on available money for irrigation (mainly diesel fuel for pumps) and perceived net profits, the land available for cereals and lentils varied also. Consequently a simple lentil-cereals-lentil-cereals rotation did not prevail and instead some fields were subjected to cotton-cereals rotations, sometimes with the inclusion of lentil fields. The irrigated area was determined by the location of irrigation channels which were constructed within 1.50 km of the village, thus minimizing time wasted in traveling during the labor-intensive operation of irrigation.

As is evident from figure 2.8, cereals (mainly wheat) were the main crop, by area, on terrace III, lentils were usually the second crop followed by cotton and vines. Only in 1982 was the total area of cereals on terrace III less than lentils (this fact was confirmed by the villagers). The high production of lentils initially held prices down, and profits were further hit when a hail storm in the early summer destroyed much of the crop. With this, many farmers cut their losses and re-plowed lentil fields for a crop of sesame.

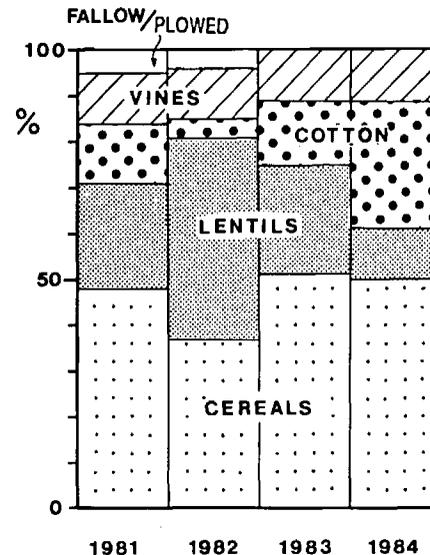


Figure 2.8. Changes in Crop Area Around Cümçüme: 1981–1984.

During the final survey year, 1984, cotton increased dramatically in area possibly because, with the imminent abandonment of the land (anticipated in 1985), the villagers strove to maximize their profit. This expansion was mainly at the expense of lentils which may, however, have assumed a greater prominence on the high terrace (see below). It proved impossible to map the total area of vegetables, because sometimes they were planted within the irrigated cotton. As a result, only fields devoted to vegetables alone are indicated on figure 2.7. Also, because of their small size, gardens within the village and

along bluffs overlooking the Euphrates are omitted. Sesame, a more common crop on the high terrace, was planted on some two ha of land (0.3 percent) in 1984.

The mapping technique employed on terrace III proved impossible on the high terrace and in order to obtain an impression of cultivation on this field area it was necessary to conduct a sample survey by means of two linear transects set out as indicated on figure 2.6. These, which were set out and sampled by G. Stein in August 1982, demonstrated that cereals, mainly wheat, dominated the high terrace, followed by lentils and sesame. Small vineyards were also present and a total of three percent of the field area was plowed or uncultivated. The high terrace included significantly less land devoted to lentils in 1982 than terrace III (29 percent compared with 44 percent on terrace III); again there was a very small percentage of fallow land. Because the sample transects may not have been representative of the land use system, the figures quoted for the high terrace are less reliable than those obtained for terrace III. Even so, it is possible to make the following generalizations:

Terrace III was the most intensively cropped land and also provided the wider variety of crops. Terrace I was mainly devoted to cereals and to a lesser extent lentils. It was harvested after terrace III and in most ways functioned as the subsidiary cropping area providing crops that were mainly surplus to subsistence requirements and were therefore transported to the city of Urfa for sale. The technology employed for cropping and harvesting was mainly modern; wooden plows were entirely obsolete within the territory of Cümçüme and the only evidence of hand reaping was observed in the uplands near Bozova, where small, marginal fields were harvested with sickles.

Terrace III soils, as well as being those closest to the village, appeared to be the most fertile. Phosphate values, which albeit probably include much unavailable phosphate, were highest in the red-brown soils of terrace III. The light gray calcareous soils fringing the gravel fans (class 4, fig. 1.6) had lower phosphate values (see ch. 3) and were also viewed by the villagers as less fertile than the red-brown soils. The still less fertile alluvial fan soils were devoted to vines and other tree crops, but, in order to facilitate tending of the bushes and transport of their fruit, only those slopes and fans closest to the village were used.

Because most animal dung collected was made into small sun-dried dung cakes to be burned as fuel, direct application of animal manure as a fertilizer was not observed. However, fields surrounding the village were enriched with badly needed nitrogen, potassium, and phosphate in two ways: Firstly, sheep and goats were retained overnight on lands immediately south of the village, thus directly enriching the soil. Secondly, ash, which included a significant amount of burnt dung, was occasionally spread on fields within one kilometer of the village. This only appeared to be practiced by one or two farmers, but when examined, the ash piles included various glass fragments, pieces of metal, and shreds of cloth, all characteristic of the ash dumps within the village.

The terrace I soils, although less enriched in phosphates than those of the main terrace, were perceived as relatively fertile by the villagers, being red soils similar to those of the main terrace.

Harvesting of cereals and lentils took place in June and July. Wheat that was not harvested using combine harvesters, as well as lentils, was threshed on flat lands either around the village, or in strategically located areas near fields. Threshing either employed

the traditional flint-bladed threshing sled, or, more frequently, a sledge equipped with rotating metal discs. The threshing devices were mainly hauled by horses, but again, tractors became increasingly used during the 1980s. Winnowing was mainly performed using a hand operated wooden winnowing machine, but during the final survey year of 1984, tractor-operated winnowing machines became increasingly common.

THE PASTORAL ECONOMY OF CÜMCÜME

The sedentary pastoral economy of the Cümcüme area was necessarily closely integrated with the agricultural cycle in order to avoid conflicting labor demands with other forms of land use (Stein and Wattenmaker 1984). Animals were rarely grazed more than a few kilometers from the village although it was evident that shepherds and cattle herdsmen from neighboring villages did have arrangements with farmers in Cümcüme to pasture their animals on fields within Cümcüme's territory. Conflicting labor demands between pastoralism and cultivation were particularly acute during the early summer when the milking season overlapped for almost six weeks with the cereal and lentil harvest.

The herding cycle utilized all four zones within the catchment of Cümcüme (fig. 2.6). In winter, the lambing season, the animals were kept in stables and fed wheat and lentil chaff as well as barley. In early spring, the islands within the Euphrates and also the dissected limestone slopes became the main grazing areas for both cattle and sheep herds. Sheep and goats continued to graze in the badlands through late spring until the wheat and lentil harvest in June. At this point, when forage on the badlands was scarce, animals were shifted to graze on the stubble fields of terraces I, II, and III. Usually the animals followed a broad arc across the stubble to end up drinking at the river around midday or early afternoon. There followed more grazing on the stubble with the animals often spending the night on fields immediately adjacent to the village. The presence of livestock on the fields for much of the summer provided a limited amount of manure to the soils. After the stubble had been heavily grazed, it was burnt, usually in August or early September, and plowed for the autumn sowing season.

THE SUBSISTENCE ECONOMY OF PRE-MODERN CÜMCÜME

Having sketched the present day agriculture of Cümcüme and its catchment, it is necessary to suggest how the same area might have been utilized if the economy was oriented towards subsistence cropping alone rather than a combination of cash and subsistence agriculture. The fundamental proposition to be tested is whether the cultivated area of the main terrace (terrace III) was sufficient to provide food for a village with the same population as that of modern Cümcüme.

Using the mean hectareage for cereals and lentils given on table 2.3, and using a hypothetical mean yield based on those derived from the Bozova district crop returns of 1945, 1946, and 1979, it is possible to show that the cropped areas as mapped in 1981–84 would support 618 people from wheat, plus 332 people from lentils (tab. 2.4). Assuming that the main dietary ingredients were lentils and wheat, 530 ha of terrace III would produce enough food, if fully plowed, for 950 people. A supplementary diet from grapes and vegetables could come from the remaining 200 ha, thus leaving the entire upper terrace (I), flood plain, and limestone hills for pasture. This figure is supported by

alternative calculations employing, for example, the quantity of wheat consumed per year by one person (320 kg at Aşvan, Hillman 1973b, p. 229). Using this figure, the mean area devoted to cereals and lentils, of 530 ha (mean for four years: 1981–84 for terrace III), if used to grow wheat only would yield 530 x 650 kg of wheat, that is sufficient for 1,076 people. If only the modern cereal area of 342 ha was used, this would produce 342 x 650 kg of wheat, that is sufficient to support 695 people. Therefore irrespective of whether the population of Cümçüme was 200 or 500, it is clear that terrace III was capable of supplying sufficient food for two villages similar in size to Cümçüme, if all the land was continuously cultivated, or one village assuming that roughly 50 percent of the cultivated land lay fallow each year. Evidently, unless soil fertility was deliberately maintained with manures and fertilizers, the situation of continuous cultivation would result in a gradual decline in soil fertility. The archaeological evidence for the practice of manuring in antiquity is outlined in chapters 3–5.

A further argument in support of a considerably diminished former cultivated area can be assumed if traditional implements were used for plowing, harvesting, and threshing. These would have ensured that the available labor pool would have limited the area of land cultivated and harvested in any given season to almost certainly within the limits of terrace III.

Although the above manipulations are only approximate, it is quite evident that for a subsistence economy the lands of terrace I would not have been needed for cultivation. It appears that, with the exception of a small area of cultivation around Dokuzköy during the early twentieth century, the high terrace was largely uncultivated prior to large scale mechanization. Therefore the area of terrace I (1,163 ha) if opened up for cultivation during the twentieth century, would have led to gains in the total crop production area (wheat plus lentils) of 150 percent more than was cultivated on terraces II and III. This compares with increases in wheat area of 230 percent within Bozova district since the 1940s and 400 percent within the province of Urfa as a whole, since the 1930s.

In conclusion, the advent of mechanization has clearly enabled much greater crop surpluses to be generated. This in turn, by providing a surplus for trade (probably in response to a greater urban demand), has accelerated the integration of the village economy with those of both the province and the nation.

Table 2.3a. Terraces II and III Around Cümçüme: Area Devoted to Major Crops Each Year from 1981–1984.

<i>Year</i>	<i>Crop</i>	<i>Area in Hectares</i>	<i>Percentage of Total Crop Area</i>
1981	Cereals	340	48.00
	Lentils	165	23.00
	Cotton	94	13.00
	Vines	79	11.00
	Fallow or plowed land	34	5.00
	Total:	712	
1982	Cereals	277	37.00
	Lentils	326	44.00
	Cotton	27	4.00
	Vines	80	11.00
	Fallow or plowed land	29	4.00
	Total:	739	
1983	Cereals	383	51.00
	Lentils	176	24.00
	Cotton	107	14.00
	Vines	80	11.00
	Vegetables	2	0.30
	Total:	748	
1984	Cereals	369	50.00
	Lentils	83	11.00
	Cotton	203	28.00
	Vines	80	11.00
	Sesame	2	0.30
	Total:	737	
Four year means:			
	Cereals		46.50
	Lentils		25.50
	Cotton		14.75
	Vines		11.00
	Remainder		2.25

Table 2.3b. Terrace I: Area Devoted to Major Crops in 1982, Estimated from Transects 1 and 2 (fig. 2.6).

<i>Crop</i>	<i>Length of Crop Along Transect (in m)</i>	<i>Percent of Total Length</i>
Cereals	2665	55.00
Lentils	1404	29.00
Sesame	431	9.00
Vines	256	5.00
Plowed or uncultivated	130	3.00
Total length of two transects: 5682 m; total length of cultivated land: 4886 m.		

Table 2.4. The Calculation of Carrying Capacity of Terraces II and III Based on Mean Crop Areas Given in Table 2.3a.

Wheat		
Mean area of cereals (mainly wheat) 1981-1984		342 ha
Mean wheat yield, Bozova 1945, 1946, and 1979		650 kg/ha
Total yield		223,000 kg
Lentils		
Mean area of lentils 1981-1984		188 ha
Mean lentil yield, Bozova 1945, 1946, and 1979		740 kg/ha
Total yield		139,120 kg

Total population supported on lentils and wheat grown on 530 ha is 950.

Assuming 1 gm of wheat equals 3.15 calories,* then the total yield equals 7×10^8 calories. If a person requires 3,100 calories per day,** the total wheat yield will support 225,885 man days or 618 persons for one year.

Assuming 1 gm of lentils equals 2.7 calories,* then the total yield equals 3.8×10^8 calories. Based on a requirement of 3,100 calories per day**, a lentil yield will support 121,169 man days or, 332 persons for one year.

*The calorific values used are according to figures supplied by the Medical Research Council (UK), see Hillman 1973b: 229.

**This is based on a calculated figure for Aşvan village, Elaziğ province of 3,100 calories per day. A slightly lower figure given by the U.S. Department of Agriculture of 2,650 calories per day, although similar to Hillman's, would give slightly higher population estimates. I have chosen the former more conservative figure.

CHAPTER 3

TECHNIQUES OF ARCHAEOLOGICAL SURVEY

The primary objective of the Kurban Höyük Regional Program was to describe the settlement and land use history within an extended catchment of Kurban Höyük from at least the time of the first occupation until the present day. The study was essentially meso-scale, being intermediate between the detailed resolution of site excavation and the large scale regional surveys of, for example McDonald and Rapp (1972) in Greece and Adams (1981) in Mesopotamia. The limited area examined in detail (fig. 3.1), although it amounted to a mere 100 km², did include a representative suite of terrain types for the area: waterless limestone uplands to the south, Euphrates terraces and their bounding scarps in the middle, and the Euphrates flood plain to the north. The area examined was limited by the excavation permit to the catchment of the site being excavated. This area was surveyed in great detail between 1980 and 1984. Beyond this core, less systematic evidence was obtained by occasional visits to major multiperiod sites within the greater area shown on figure 3.1. The object of the latter policy was to obtain evidence of occupation contemporary with that of Kurban Höyük in order to describe the fourth and, especially, the third millennia settlement modes of the area. This dual approach, with an intensive survey area nested within an extensive area of general study, was expected to provide a more representative information base than an intermediate survey coverage over the entire area, notwithstanding that this greater area, being out of the area to be flooded, was unavailable for detailed study.

During the last fifteen years, archaeological survey has become increasingly important as a means of studying archaeological regions, and both the number of projects underway and the intensity of coverage of each survey have increased significantly. Survey is cost effective and can provide abundant new information on ancient settlement systems, but, conversely, the detailed approach entailed by modern survey methodology raises problems of site definition as more archaeological information is recorded per unit area. Furthermore, if anything meaningful is to be said about where sites do not occur, several man days should be expended per square kilometer of ground covered (Cherry 1983, p. 387).

As an argument against the increased use of intensive survey techniques it is sometimes contended that intensive surveys merely throw up many more small and 'unimportant' sites. First, as will become clear in chapters 4 and 5, the small sites play a crucial role in the discussion of population changes in an area characterized by periodic fluctuations in settlement nucleation and dispersal. Second, careful, detailed surveys can

reveal hitherto unknown occupation complexes which cover very large areas but are relatively inconspicuous. Such extensive, virtually flat sites must have been, in some cases, large population centers of relatively short duration. Third, the network of settlements discovered can be set within a background of more subtle 'landscape archaeology': ancient roads, aligned modern field boundaries, et cetera (see below, section C), which can be related to more abstract data, notably sparse artifact scatters, which are thought to indicate areas of former intensive cultivation (see below, section B). Finally, geomorphological

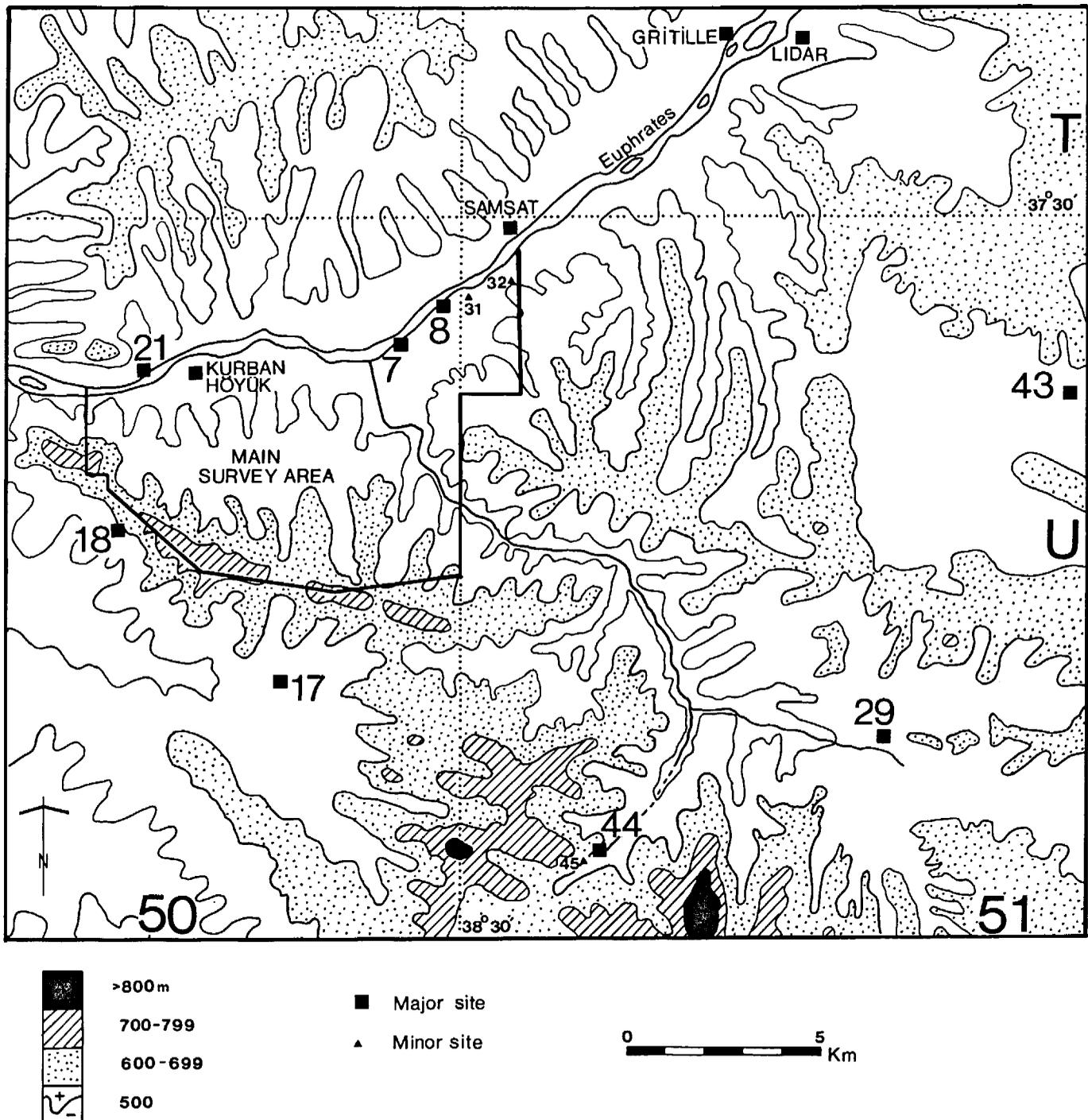


Figure 3.1. The Survey Areas Around Kurban Höyük

surveys can establish where sites have been lost by erosion or sedimentation and also provide information concerning the history of soil erosion and landscape degradation.

The following six sections (A-F) outline the main criteria used during survey, and the techniques employed to record the information recovered.

A. SITE DEFINITION

Although fundamental to site survey, the actual definition of a site can prove problematic in the field, primarily because in many areas of the Old World, a continuum of artifacts and other signs of former occupation can carpet the ground surface. It was one of the major field objectives to attempt to filter out the evidence of habitation sites from such 'background noise.' It is traditional in the Middle East to view sites as being virtually synonymous with mounds; flat sites often being treated as of relatively minor importance. This is unfortunate because low or flat sites, often represented by a fairly short chronological range, can extend for several ha and can offer the best opportunity for area excavation. Here, for the sake of convenience, only areas of former habitation that can be defined by a range of visible criteria, are defined as sites. Other types of evidence, associated with non-habitation such as fields, roads, bridges, sparse artifact scatters, et cetera are excluded from the term site, but they are of course highly relevant to the synthesis of landscape history.

The classic occupation mound, comprising a succession of layers of building debris, floors, and refuse, formed only a minority of sites examined within the detailed survey area. Most sites were defined by the following criteria:

MICROTOPOGRAPHY

Instrumental survey employing contour intervals as little as 25 cm enabled the mounding of several apparently flat sites to be defined (e.g., Site 28, *App. A*, fig. A.15a).

This was especially effective when it proved possible to plot also the profile of the land surface beneath the site from the depth of occupation deposits exposed along the Euphrates bluffs and the slope of the surrounding terrace surface (e.g., Site 7, *App. A*, fig. A.3b and Site 28, *App. A*, fig. A.15b).

STONE SCATTERS

On river terraces, where the dominant superficial deposits comprised reddish-brown loam over the Euphrates silts, sands, and gravels in turn overlying limestone, surface scatters of limestone were anomalous. In almost every case, such scatters proved to be disintegrated foundation stones from former müdbrick buildings. This was clearly the case at Kurban Höyük where most archaeological deposits contained at least some limestone debris. Although the presence of limestone scatters could not aid site definition where sites were located on limestone bedrock, other lithological anomalies did assist in the process of site survey. For example, at Site 13, the possible curtain wall which ringed the hilltop was identified by the presence of limestone blocks with bedding planes perpendicular to those of the underlying limestone (*App. A*, fig. A.7b).

TOWN AND COUNTRY IN SOUTHEASTERN ANATOLIA

Table 3.1. Criteria Used for the Definition of Surveyed Sites.

<i>Site</i>	<i>Mounding</i>	<i>Stone Scatters</i>	<i>Artifact Scatters</i>	<i>Soil Color</i>	<i>Cut Features</i>	<i>Other Criteria</i>
KH	high	s	pot, flint	—	—	—
2	moderate	s	pot, tile	—	—	phosphates
3	flat	s	pot, tile	—	—	—
4	high	s	—	—	—	earthwork
5	low(?)	s	pot	—	—	—
6	low	s	pot, tile	grayish	—	mill
7	high, mod., low	s	pot, tile	—	ditch	exposed sections
8	high and low	s	pot, tile, ts	—	—	—
9	low	s	pot	—	pit	exposed section
10	flat	s	pot	—	—	exposed section
11	flat	—	pot, flint	—	—	—
12	low	s	pot, tile	grayish	—	—
13	flat	s	pot	—	—	bedding plane orientation
14	low	s	pot, tile	grayish	—	—
15	flat	—	pot	—	—	—
16	low	s	pot	—	—	—
17	high	—	—	—	—	multi-period mound
18	high	—	—	—	—	multi-period mound
19	low	s	pot	—	—	—
20	flat	s	pot, flint	—	—	sample survey
21	high	—	—	—	—	multi-period mound
22	flat	s	pot, tile	—	—	—
23	flat	s	pot, o	grayish	—	phosphate
24	flat	s	pot	—	—	—
25	flat	—	pot, flint	—	—	—
26	flat	—	pot, tile	—	—	stone walls
27	low	s	pot, tile	—	pit	exposed section
28	low	s	pot, flint	grayish	—	exposed section
29	high	—	—	—	—	multi-period mound
30	low	s	tile	—	—	—
31	low	s	pot	—	—	—
32	moderate	s	pot, tile	grayish	—	—
33	Şaşkan water mill	—	—	—	—	walls
34	flat	s	tile	—	—	—
35	low	s	pot	grayish	—	—
36	flat	—	pot	grayish	—	—
37	low	s	pot, tile	—	—	—
38	low	s	pot, tile	—	—	—
39	low	s	pot	—	—	—
40	flat	s	pot	grayish	—	—
41	flat	s	pot	—	—	—
42	flat	—	pot, flint	—	—	—
43	high	—	—	—	—	multi-period mound
44	high	—	—	—	—	multi-period mound
45	flat	—	flint	—	—	—
46	flat	—	pot	grayish	—	—
47	flat	s	pot	—	—	—

Abbreviations: Artifact scatters: o = oven lining, ts = tesserae; Stone scatters = s.

ARTIFACT SCATTERS

The presence of a 'background noise,' usually a sparse scatter of small, battered EB or late Roman-Byzantine plain ware sherds over most of the ground surface made site recognition difficult (below, sections B and F). Only when large pottery fragments were abundant was pottery alone used to pinpoint areas of former habitation. Usually supporting evidence was required from scatters of other artifacts: tesserae, roof tiles, flint tools, fragments of oven lining or large pieces of stone querns. Preferably such information was combined with other indicators, such as soil coloration, microtopography, and stone scatters to provide a realistic site definition. The types of evidence used for the delimitation of each site is given in table 3.1.

SOIL COLOR

The occupation deposits of most sites included significant quantities of ash which, when mixed by plowing, lent a distinctive grayish hue to the plow soil. At Site 28, for example, dry soil colors exposed in sections, varied around light brownish-gray (10YR 6/2); plow soils on the site exhibited slightly higher chroma (pale brown: 10YR 6/3), whereas plow soils to the south of the site were more brown with a still higher chroma (light yellowish brown: 10YR 6/4). In the case in question, soil colors were determined using Munsell color charts to measure colors at 20 m intervals across the site. The color change from 10YR 6/3 to 10YR 6/4 took place at the approximate site boundary defined by other techniques, notably microtopography. Although soil color differences were perceptible at other sites, they were not used to provide an objective definition of the sites' limit, other criteria proving to be more satisfactory.

CUT FEATURES

Two types of cut features were visible on sites: First, pits, possibly used for the storage of grain or lentils, were visible where sections were freshly exposed along the eroding bluffs of the Euphrates. Although unusual (pits were only reported from Sites 9 and 27C), they provided good repositories for artifacts which could, in some cases, be plucked straight from the section. Second, a possible ditched enclosure was found around Site 7 (Şaşkan Küçüktepe), but only after detailed topographic survey had indicated the presence of a broad, shallow ditch (*App. A*, fig. A.3a). Although this feature was not excavated, the ditch hypothesis was supported by the presence of deep, broad deposits of loam, probably ditch fills, where the depression intersected the Euphrates bluffs. The significance of this feature to the definition of the site complex at Şaşkan is expanded below (fig. 3.6 and Site 7, *App. A*).

B. 'BACKGROUND NOISE'

The presence of a virtually continuous scatter of artifacts over the land surface has frequently been noted in both Mediterranean survey areas (Cherry 1983, p. 395; Gallant 1982, p. 103) and around a number of Middle East sites (Wilkinson 1982). Similarly, the terraces surrounding Kurban Höyük and the Şaşkan mounds were veneered by a sparse

scatter of artifacts. Recognizable forms or wares were almost invariably of EB or late Roman-early Byzantine type (*App. B*, tab. B.6, and fig. B.28). Because of its narrow chronological range it was possible to demonstrate that the scatter spread over most sites on terrace III, including probably Kurban Höyük. Limited areas of scatter were also present on terrace I although they were dense enough to be mapped only within 1 km of Sites 12 and 14. In fact so persistent were the scatters that only two out of the 265 ten by ten meter sample squares laid out during the mapping program failed to produce sherds.

To distinguish between habitation site artifact scatters and field scatters, an attempt was first made to define the suspected habitation site by using the range of criteria described above in section A. The remaining field scatters were left as a sampling exercise to be undertaken in later seasons. This was achieved in 1982 and 1983 when sherd scatters and soil sampling for phosphate analysis took place (see section F below).

C. OTHER FEATURES

Archaeological survey should not be concerned merely with the location of habitation sites. As Adams showed by his survey of the Mesopotamian plain, landscape features, in his case canals, provided the strands that bound the habitation sites together. In the Kurban Höyük survey area, although early canals were absent, road systems dating back some 2,000 years provided links between contemporary settlements.

The prime feature was a long straight track which followed the Euphrates bluffs and linked the Roman, late Roman-Byzantine, and Medieval riverbank settlements (see ch. 5). Today the track is only used by occasional travelers on donkeys or by tractors. Although undated, its antiquity is suggested by lengths of 'hollow way' developed where the track dipped down to cross valleys. Such 'hollow ways' result wherever intense traffic inhibits the growth of vegetation and encourages high runoff and the development of active gullies (Crawford 1953, p. 53 and pl. 6b). That this hollow way feature is at least Roman in date is suggested by its great depth, which attains 8 m near Site 32, and by its route linking settlements of Roman or slightly later date. A limestone bridge pier, discovered in the bed of the İncesu Deresi on the line of the hollow way is probably the remains of a small Roman bridge (see ch. 5).

Early landscape features can remain fossilized in later landscapes, and in the area in question the modern system of strip fields appears to have been laid out in relation to the hollow way. The relationship between the modern fields, early landscape features, and archaeological sites is elaborated in chapter 5.

Beyond the limits of modern cultivation, on the limestone uplands linear stone scatters appear to belong to a pre-modern system of land boundaries. Although impossible to date archaeologically, the broad spread of the constituent stones suggests the features might be as early as a nearby pastoral camp (Site 26, *App. A*) of late Roman-early Byzantine date. The possible role of these collapsed boundary walls in the pastoral economy of the period is discussed in chapter 5.

Other features included two water mills located on the İncesu Deresi. The more recent was a stone building, Site 33, near Şaşkan village (*App. A*), which, from the condition of its surviving walls appeared to be of Ottoman date. An earlier earthwork feature located downstream and described in *Appendix A*, Site 6, also may have functioned as a water

mill. This interpretation is supported by the presence of a large millstone in the occupation deposits of Site 6 as well as the site's name: Değirmen Harabesi (Değirmen = mill). Its apparent date, late Roman-early Byzantine or early Islamic corresponds to a period when water mills were rapidly being built wherever hydraulic and economic conditions allowed (Avitsur 1960 and Neely 1974).

D. SITE VISIBILITY

A recurring problem of site survey is that the ground surface is not always visible, therefore, if survey is conducted within a single season, a certain proportion of sites will be missed. The dominant factor inhibiting surface collection and site recognition in the Kurban Höyük area was land use. The survey season was necessarily limited by the chosen field season—June-September each year—which coincided with the harvesting of cereals and lentils and the maximum growth of cotton. Sites covered by harvested wheat or growing cotton were difficult to detect, unless they showed significant mounding, therefore surface collection was difficult. Visibility within vineyards was only slightly better and because of their permanence, there was no opportunity to re-survey at a later date. Lentils, in contrast to cereals, when harvested resulted in a clean, well-weathered ground surface upon which artifacts were highly visible. Consequently, whenever possible, sites were surveyed or collected when under lentils. The rotation of fields under lentils every two or three years enabled all cultivated land, except for vineyards, to be inspected and collected under ideal conditions.

It was essential to revisit sites in order to obtain a full range of artifacts and surface material. This became conspicuously apparent at the Halaf period Site 20. When discovered in 1981, the site was uncultivated and the dominant surface artifacts were of flint and hard well-fired painted pottery. Subsequently in 1982 the site was under sesame, a broadly spaced plant that left the ground surface highly visible. Stone tools were less in evidence, painted pottery although present, was scarce, but coarse chaff and grit-tempered sherds were relatively abundant and present in large fragments. In addition, large quantities of angular limestone foundation stones were plowed up (the site was located on gravels of terrace I) as well as a door socket and a saddle quern (see *App. A*, fig. A.11). Evidently, the year's plowing had cut into underlying occupation layers and churned up wall foundations and pottery. The proportions of soft to hard pottery and flint visible immediately after plowing were probably more representative of the proportions within the occupation deposits. After several years, however, the softer sherds would again break down more rapidly until again the more resistant painted pottery and flints would dominate the surface scatter.

The other aspect of site visibility, sedimentation, mainly affected areas of terrace III to the southwest, south, and southeast of Cümçüme village. These are the gravelly fan soils and fringing calcareous silts, soil types 3 and 4 on figure 1.6. Within this area at least one site, the lower component of Site 13, may be buried. Elsewhere, on the high terrace I, fluvial sediments were transported through the area along incised valleys. In general, the reddish-brown loams (type 2 on fig. 1.6) were quite stable and did not show any evidence of aggradation. The zone of terrace III which had not been aggraded continued alongside the entire length of the Euphrates bluffs, as is testified by the presence of several

Chalcolithic sites, which show no evidence of being obscured by sedimentation (Sites 11, 15, 25, and 27C, *App. A*). In fact the main agency of site loss along the Euphrates was not sedimentation, but erosion by the laterally moving river. This had removed some 25–50 percent of Şaşkan Küçüktepe and Şaşkan Büyüktepe (Sites 7 and 8, *App. A*) and may also have resulted in the removal of smaller sites in some localities. Finally, along the İncesu Deresi, both erosion and deposition have prevailed to form a complex mosaic of erosional and depositional terrain. This area was the most difficult to assess in terms of site visibility and the possibility remains that smaller sites located on the fringes of the flood plain or near the mouths of gullies may have been lost. However, the site record, even in this complex terrain is sufficiently consistent to allow settlement patterns to be described with some confidence.

E. SAMPLING TECHNIQUES

Sampling was used either to provide a more detailed spatial and chronological definition of occupation sites or to define more accurately the distribution and density of extensive 'field scatters' which spread between sites. On occupation sites the total collection of artifacts from sample squares provided usable information in only a small number of cases. Only on Kurban Höyük and on the Halaf Period Site 20 were systematic sample squares laid out over the entire site. At the former site, the results were highly biased as a result of differential visibility on the cereals, lentils, and fallow fields that covered the mound. As a result, the technique was discontinued after the first year. At Site 20, as discussed above (section D), the results, although more encouraging, were nullified the next year when the site was plowed and a rather different range of artifacts, but of the same period, became evident.

On larger multiperiod sites, sample areas were laid out over specific sectors of the site or to encompass given topographic units such as 'lower mound west,' 'main mound east slope,' et cetera. Such areas are lettered within the site maps presented in *Appendix A*. On high mounds such as Şaşkan Büyüktepe (Site 8), sample squares laid out across the top of the mound and down one or more slopes enabled some refinement to be made to the chronological sequence (cf. Whallon 1979). Although it was possible to discern some chronological sequences from this technique, there was much blurring induced by later material rolling from up-slope into the lower slope zones. Usually a more satisfactory means of providing evidence of earlier occupation phases was the collection of artifacts from well-defined cuts exposed by erosion around the mound periphery. However whether systematic sampling techniques were used or merely topographically determined areas, it was essential to provide some spatial control on the collected data within the larger sites.

On flat sites, which had usually been occupied for a relatively short duration, the artifact scatters were frequently so sparse that the quantitative collection of sherds would have provided a trivial number of diagnostic forms. As a result, the qualitative definition of the main area of artifact scatter was favored. This area was then searched intensively, often at intervals over several years, in order to obtain a full range of diagnostic forms and wares. Although subjective, this enabled the frequently small but crucial diagnostic wares, such as Late Roman C and 'brittle wares' to be found on sites which otherwise would

merely be described as Roman-early Islamic. Such intensive searches were not conducted at the exclusion of other areas of the site, which continued to be monitored, but was viewed as a means of 'fine tuning' the date of a site's artifact assemblage.

In contrast to the rather mixed results obtained by on-site sampling, the data from systematic collection within 'field scatters' proved to be much more amenable to interpretation. There now follows a description of the methodology employed for the retrieval of evidence of early systems of intensive cultivation.

F. THE RECOGNITION AND RECORDING OF ZONES OF ANCIENT INTENSIVE CULTIVATION

Two methods were used to determine the zones of intensive cultivation around major sites within the survey area. The first, which depended upon the accurate recording of archaeological 'background noise' or 'field scatters' was roughly datable, whereas the second method, being reliant on the measurement of soil phosphates was not. It was therefore necessary to use the two methods in concert to view how different methods of manuring in the past might be reflected in modern day field soils.

FIELD SCATTER SAMPLING TECHNIQUES

As is noted in section B above, the presence of a sparse scatter of artifacts over the land surface made site definition difficult. Scatters, which mainly comprised pottery, varied in density mainly between 5 and 70 sherds per 100 m². In addition to EB and late Roman-early Byzantine pottery, artifacts included fragments of basalt stone quern, tiles, and vitrified kiln waste as well as occasional floor tesserae. The sparse scatter of flints also encountered may result from earlier prehistoric occupations rather than belong to the later period field scatters.

Similar scatters, recorded around the EB and Hellenistic mound of Tell es-Sweyhat, Syria (Holland 1976) and early Islamic sites of Siraf and Sohar in Iran and Oman respectively, have been interpreted as being the result of manuring of fields using urban-derived organic waste (Wilkinson 1982). In these cases, in order to achieve the desired increase in agricultural productivity, the available animal manures were not sufficient. Consequently additional sources of organic fertilizer: 'night soil' from privies, animal dung from street sweepings and urban byres, all possibly ameliorated by composting, were hauled out to fields and applied when soils were moist. Laws of least effort usually constrained the maximum application of manure to the land nearest the settlement, which consequently became progressively enriched in artifacts. It was therefore necessary to develop a sampling technique capable of defining the extent and density of artifact scatters in order to establish how they related to the distribution of archaeological sites.

In order to achieve an effective and moderately even coverage, 10 x 10 m sample squares were set out along mainly north-south transects positioned with respect to modern field boundaries which had been mapped at 1:5,000 during the 1981 land use survey. This technique sufficed for terraces II and III around Cümçüme and Kurban Höyük, but on terrace I the scatters surrounding Sites 12 and 14 were sampled by means of radial transects set out by prismatic compass from the site center. A similar technique supported

by compass triangulation was employed on terrace III around the Şaşkan mounds. As much as possible, sample squares were kept between 100 and 300 m apart, distances being measured by pacing. Total artifact collection was effected within each 10 x 10 m square by pacing up and down along roughly 1 m wide lanes until the square had been fully walked. Finally, to check on the efficacy of the pacing, the diagonals were walked. The minimum sherd size collected was kept to 1 cm square as sherds of this size and above usually retained both faces. It is unlikely that every sherd within the 100 m² area was ever collected and instead a compromise was usually struck between effective collection and time used. It was felt that an attempt to retrieve every sherd would result in a less consistent coverage. In order to get results representative of the surrounding sherd scatters, collection time was limited to 10–15 minutes per square and only one collector, the writer, was used during the entire sampling program. Following the collection of each square, all flints, sherds and other artifacts were counted and a note made of surface conditions within the square. Diagnostic artifacts, including rims, decorated sherds, bases and distinctive wares were retained for more detailed documentation at the dig house. The prime factor inhibiting surface collection was surface visibility. Therefore to ensure an even coverage only harvested lentil fields were collected (see above, section D). Owing to the tendency of farmers to amalgamate fields into blocks, it proved possible to survey major sectors of land within a given year. In the next year adjacent blocks could be samples to complete the coverage.

THE RESULTS

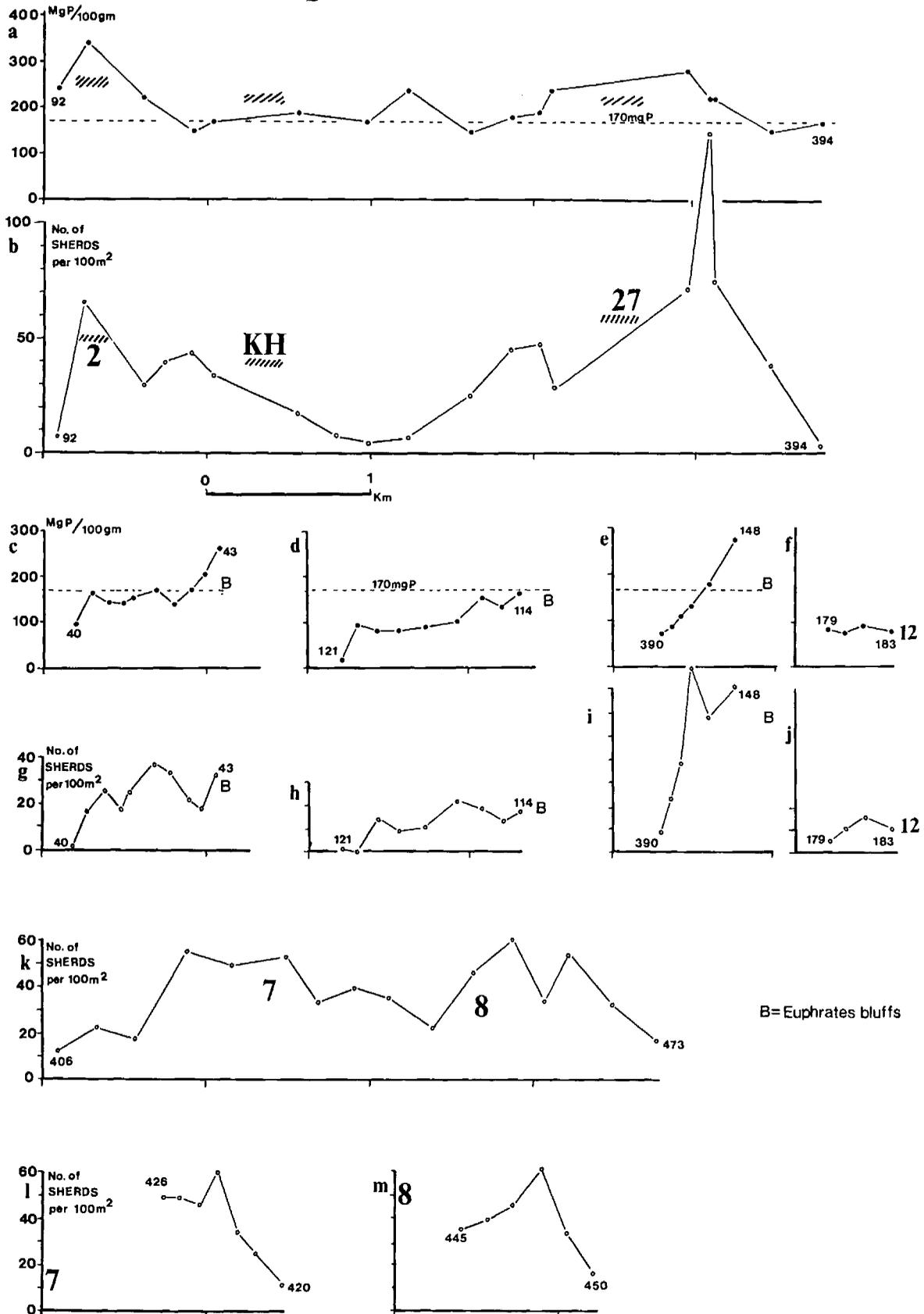
Details of sherd counts per sample square and the number of diagnostics are given in *Appendix C* and are graphically illustrated on figure 3.2 for selected transects. Finally, an intermediate stage field scatter density map is illustrated on figure 3.3 to show also the distribution of sample squares. A complete sherd density map for the entire detailed survey area is given in chapter 5.

The sherd density map shows that Sites 2 and 27 are flanked by relatively dense scatters which gradually decline towards a trough situated a little to the east of Kurban Höyük. Sites 12 and 14 are surrounded by similar, albeit less dense scatters. All of the above-mentioned sites and most diagnostic sherds within the field scatters were of late Roman-early Byzantine date. A similar pattern, which also included a significant component of EB-MB transition period sherds, also emerged around Sites 7 and 8 near Şaşkan. The evidence for this is presented in chapter 4.

The graphical plots of field scatter densities (fig. 3.2:b, g-m) show that although minor fluctuations are present, the scatters are quite consistent across the terrace surface. The gradual decline in density away from both Sites 2 and 27 is dramatically illustrated on figure 3.2b. Equally, the drop in density away from the Euphrates bluffs, although uneven, is also visible. In the case of figure 3.2i, declining sherd densities may partly result from the deposition of calcareous silts over the scatters around the fringes of gravel fans.

A brief comparative discussion of the pottery scatter and phosphate evidence follows below, and the significance regarding the chronology of past land use phases is examined in chapters 4 and 5.

TECHNIQUES OF ARCHAEOLOGICAL SURVEY



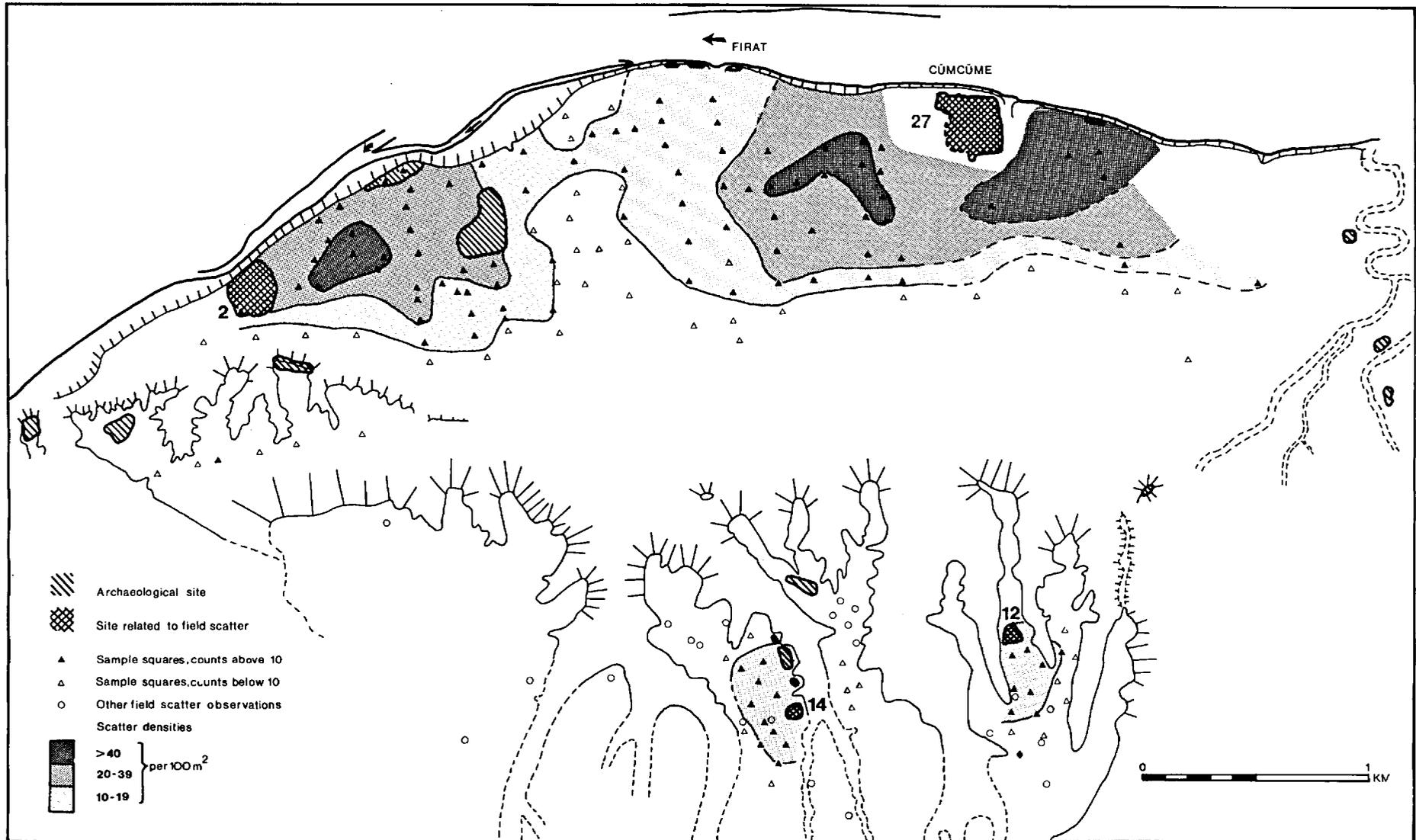


Figure 3.3. Preliminary Map of Field Scatter Sherd Densities and Sample Square Locations Around Sites 2, 12, 14, and 27.

SOIL PHOSPHATES AND EARLY LAND USE

During the extensive sherd sampling program described above (section C), soil samples were taken from the plow soil to determine how the values of soil phosphate varied with distance from archaeological sites. The comparison of areas of high phosphate values with areas of high 'field scatter' sherd density might then allow zones of early intensive cultivation to be inferred. Sampling in the field was conducted by the writer and G. Stein. All samples were sun-dried, crushed, and sieved through a 2 mm mesh, and a sub-sample of each was retained for phosphate determination. Analysis was conducted in the U. K. by D. Gurney for the two sampling seasons, 1982 and 1983.

METHOD OF ANALYSIS (by David Gurney)

The method of analysis used is based on the molybdenum blue method of Murphy and Riley (1962), modified for use in archaeological field survey by Dr. M. J. Hughes and Dr. P. T. Craddock of the British Museum Research Laboratory (Sieveking et al. 1973, pp. 195–96; Hughes et al. 1976, pp. 30–31), whose continued support and encouragement is gratefully acknowledged.

The analytical procedure for the determination of the inorganic phosphate content of the samples may be summarized as follows:

One gram of each sample is treated with 5 ml of 2N hydrochloric acid, and then heated in a water bath. 0.2 ml of the resulting solution is pipetted and mixed with 10 ml of the diluted molybdenum blue color reagent (Murphy and Riley 1962, p. 33). In the presence of phosphate, an intense blue complex forms. This is measured colorimetrically, and calibrated against a series of standard solutions. Results are expressed in milligrams of phosphorous per 100 gm of soil (mg P/100 gm).

This method measures the inorganic component of the soil's total phosphate content. It is generally accepted as being appropriate for the determination of ancient phosphates, as phosphates of anthropogenic origin are likely to have undergone conversion to the inorganic form, and the effects of modern fertilizers are minimized (Hamond 1983, p. 62). Full details of this method and some recent applications can be found in Craddock et al., 1985.

THE RESULTS

Soil samples for phosphate analysis were collected from the following contexts within the immediate survey area of Kurban Höyük (fig. 1.6).

- a. Thin soils on limestone hills a long distance from all known ancient or recent settlements (soil type 1; 3 samples).
- b. Thicker reddish-brown loams on terrace I, a long distance from all known ancient or recent settlements (soil type 2; 5 samples).
- c. Plow soils on terrace I, the same as b but within the areas of late Roman-early Byzantine artifact scatters thought to result from manuring of field soils (39 samples).

- d. As for c, but from the small area of terrace II soils which remain to the southwest of Kurban Höyük (soil type 2; 6 samples).
- e. From a soil profile exposed in a pit cut into type 2 soils on terrace III near Kurban Höyük (fig. 1.7E, located at E, fig. 1.6). Six samples taken from the plow soil down to a depth of 2.30 m. The upper part of the profile contained occasional potsherds (fig. 1.7E) and judging by the history of settlement in the area, this soil might have been under virtually continuous agricultural use for the past 5,000 to 7,000 years.
- f. From a section exposed in the eroded bluffs of terrace III to the north of Kurban Höyük. Like e, the upper soil profile had probably been under agriculture for 5,000 to 7,000 years (soil type 2; 5 samples).
- g. From artifact sample squares laid out on terrace III. Although much of the area comprised reddish-brown loams of type 2 soils, to the south of Cümcüme the sample squares fell within the area of pale brown or gray calcareous silt loams (soil type 4) washed from the adjacent heavily eroded gullies (105 samples).
- h. A buried reddish-brown loam of type 2, developed on terrace III sealed beneath 7 m of occupation deposits of fifth-third millennia B.C. date at Kurban Höyük (fig. 1.7A; 6 samples).
- i. Plow soils developed on Sites 2, 12, 14, and 23 (10 samples).
- j. Various types of occupation deposit excavated at Kurban Höyük. These comprise ash layers, deposits of burnt dung, floor deposits, and mudbrick in various forms (28 samples).

The objective of sampling such a wide range of contexts was to provide, firstly, a range of relatively non-intensively cultivated and little altered soils with which to compare agricultural soils which surrounded settlements. These had presumably been receiving higher inputs of manures and therefore phosphates through time. Secondly, the samples from occupation sites and their deposits would demonstrate the higher degrees of phosphate enrichment that prevailed. Although the resultant picture was far from clear, it can be summarized as follows:

The shallow soils on limestone hills (category a, fig. 3.4) exhibit a wide scatter which ranges from high values of 340 mg P/100 gm down to moderate values of 120 mg P/100 gm. The sample was not large enough to be representative of the full range of limestone soils or bedrocks, but the high values quoted might relate to a source of phosphate rich minerals, such as apatite, within the Eocene limestones of the southern ridge. This rock unit is only locally cut by the valley heads which drain terrace I. These are mainly cut into the white Cretaceous limestone which is the source for the calcareous silts aggraded on to terrace III.

The plow soils in the vicinity of Site 12 and 14 on terrace I (category c, fig. 3.4) were slightly enriched in artifacts presumed to have arrived as a result of manuring, but shows phosphate values no higher than the terrace I control samples of category b. The soils from terrace II also fell within this range.

Plow soils on terrace III (category g, fig. 3.4) showed a wide range of phosphate values ranging from 18 to 300 mg P/100 gm. Subsoils from the pit at E, the section at G, and in the buried soil below the mound in Area A (categories e, f, and h, fig. 3.4) yielded phosphate

values of mainly between 68 and 120 mg P/100 gm, whereas plow soils showed slightly higher values of 140 and 150 mg P/100 gm. Inexplicably, a lower reddish-brown loam in section G, sealed below Euphrates sands of a minor aggradational phase, produced a single value of 170 mg P/100 gm. The total range from subsoils and buried soils of terrace III must therefore be expanded to 68–170 mg P/100 gm as depicted on figure 3.4 within the horizontally positioned and broken lines.

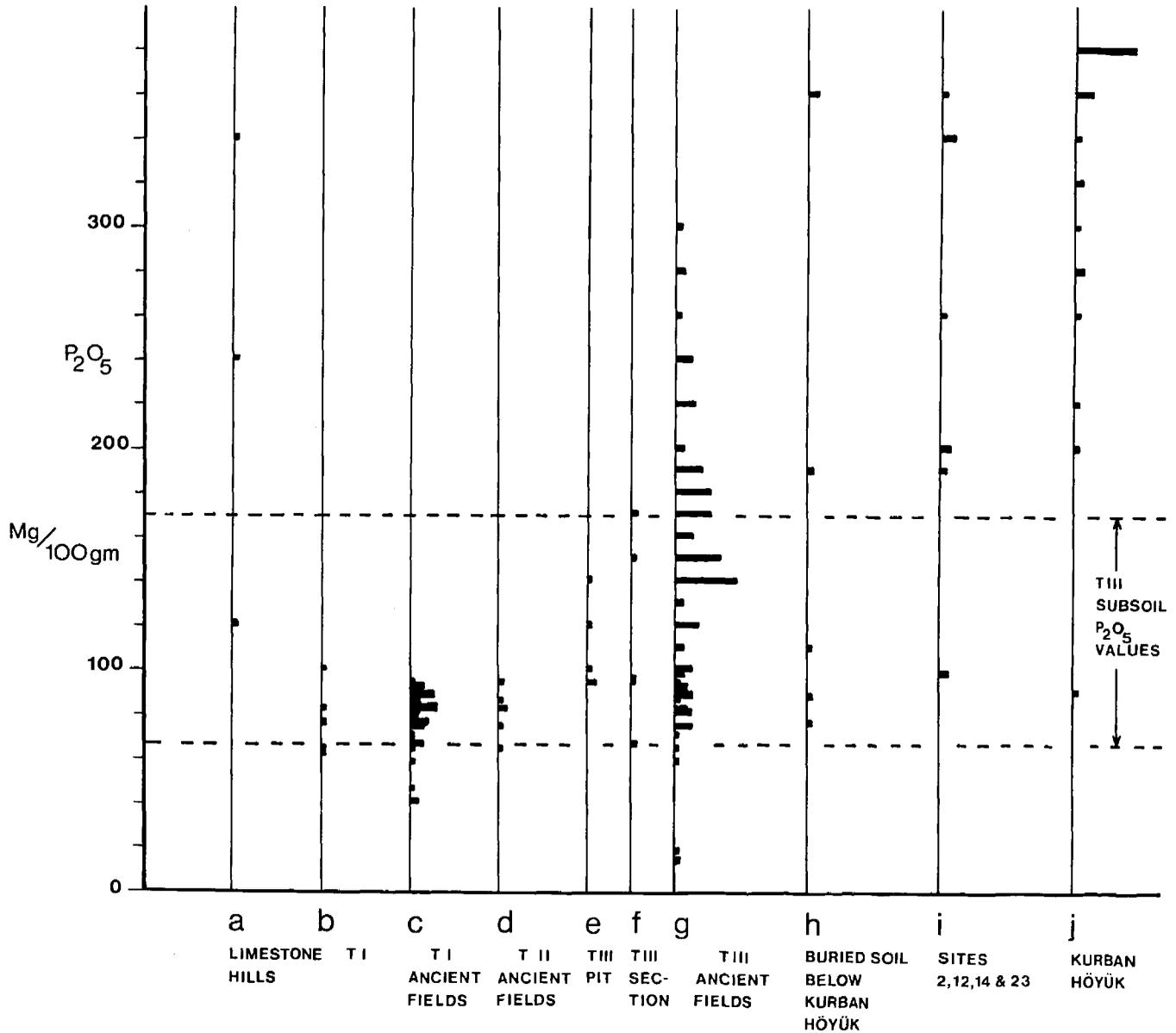


Figure 3.4. Phosphate Values in mg P/100 gm According to Sampled Contexts.

When viewed in plan (fig. 3.5a), the phosphate values adopt a rather complex distribution. Higher values are developed on the reddish brown loams that predominate more in the west and south of terrace III (type 2 soils with slightly alkaline pH values of 7–8). Lower values fringe the bluffs to the south of Cümçüme where pale brown or gray calcareous silts predominate. Extreme highs of 200+ mg P/100 gm occur nearer the

Euphrates, to the east and west of Cümcüme village, to the east and southwest of Kurban Höyük, and between Kurban Höyük and Site 2.

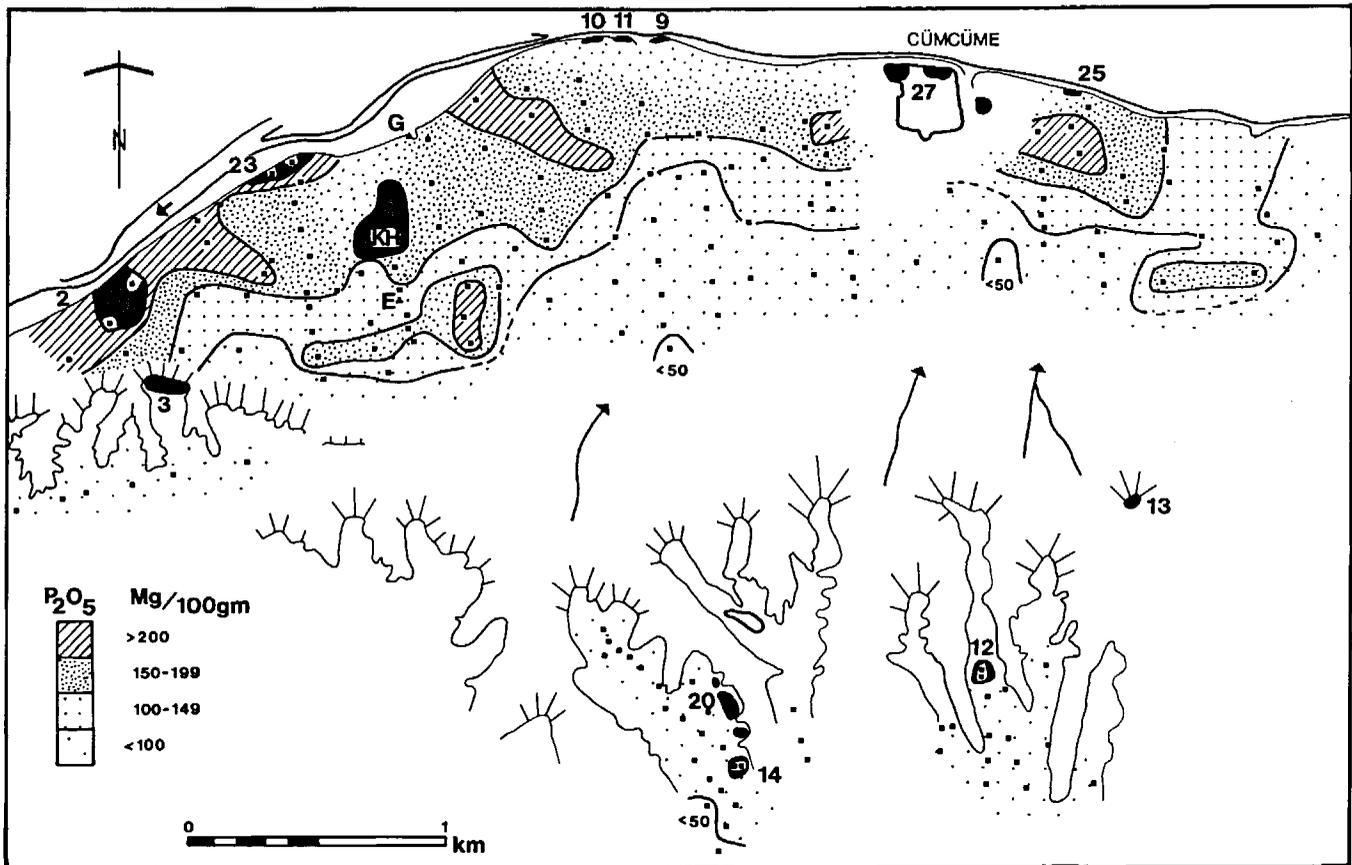


Figure 3.5a. Phosphate Values in mg P/100 gm for Plow Soils Around Sites 2, 12, 14, and 27.

Finally, the most phosphate-enriched soils were, predictably, those sampled from the archaeological sites. Phosphate values were usually greater than 200 mg P/100 gm, with significantly higher values than those samples from the surrounding field soils (categories i and j, fig. 3.4). Only a minority of samples registered low values: 91 mg P/100 gm from a deposit from Kurban Höyük, and 97 mg P/100 gm from two samples at Site 12. Both deposits probably incorporated a significant quantity of mudbrick material which probably reflect the phosphate values in the mudbrick source rather than the occupational input.

INTERPRETATION OF THE PHOSPHATE RESULTS

Only the terrace III soils showed significantly higher phosphate values than those of the control samples taken from distant soils or subsoils. The definition of a suitable 'pre-agricultural' phosphate value for the terrace III soils was hindered firstly by the wide fluctuations in the buried or subsoil layers (68–170 mg P/100 gm) and secondly by the presence of highly calcareous soils to the south of Cümcüme, which registered the lowest soil phosphate values.

The raw data illustrated on figure 3.5a show that low values occur to the southwest, south, and southeast of Cümcüme village. These calcareous silts are rapidly aggrading (ca.

3 m in 4,000 years below Site 13) and the low figures correspond to tongues of silt aggradation emanating from the gravel fans. The soil profiles of the reddish-brown soils to the west and north appear to have remained much more stable during the Holocene (ch. 1). On these soils the highest phosphate values may reflect the extended pasturing of animals, manuring of the terrace III soils, and in certain cases settlement. The last named are indicated by the peaks on Sites 2 and 23 to the west of Kurban Höyük. In general, the highest plow soil values are grouped around Site 2 (Hellenistic-early Islamic), Kurban Höyük (Halaf-EB and early Islamic) and Cümcüme (Site 27: Halaf, EB, Hellenistic, Late Roman-Byzantine, Medieval).

The above pattern is by no means clear. Therefore, to provide a finer resolution from the data, an attempt has been made to isolate soils of possible phosphate 'enrichment.' If the assumed 'pre-agricultural' phosphate value from the control samples is set at a moderate 120 mg P/100 gm phosphate 'enriched' soils are those with positive values shown stippled on figure 3.5b. Using a higher assumed pre-agricultural phosphate level of 170 mg P/100 gm, as suggested by the maximum value from profile G, the 'enriched' soils are more clearly delimited and are localized around the three sites: 2, Kurban Höyük, and Cümcüme (hatched area on figure 3.5b) which for convenience of plotting is shown as values of 50 mg P/100 gm above an arbitrary datum of 120 mg P/100 gm. At least part of the heightened definition depends on the gap between Cümcüme and Kurban Höyük. This is an extension of a lobe of lower values which penetrates northward from the gravel fan situated to the south of Kurban Höyük. The deposits along this path are, like those to the south of Cümcüme, deposited by stream flow from the alluvial fan and feeder valleys.

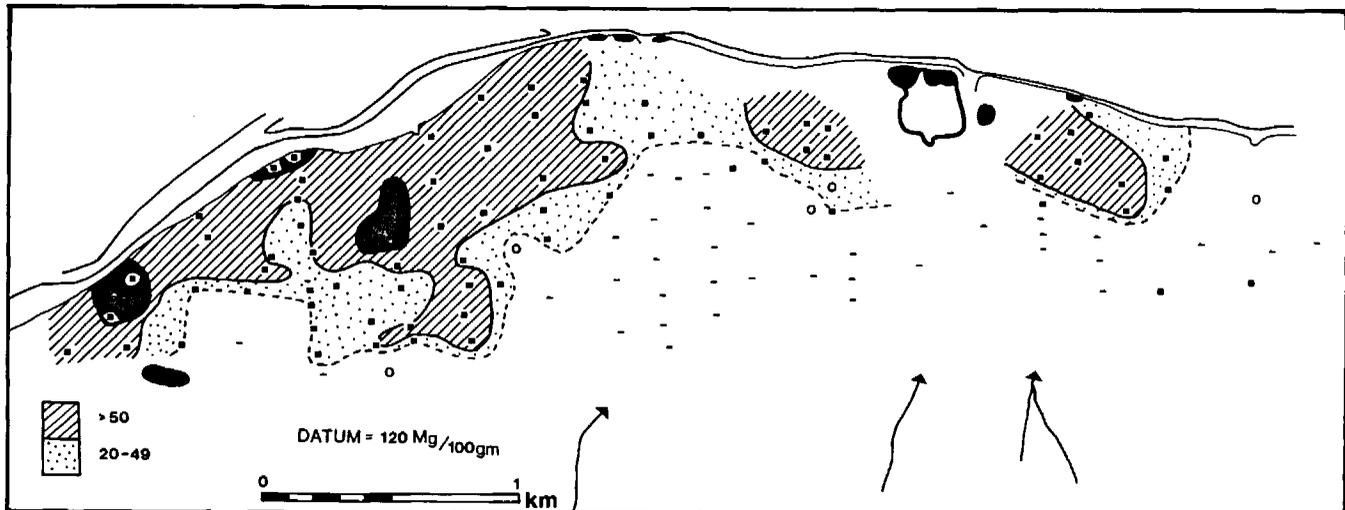


Figure 3.5b. Phosphate Values in Excess of an Arbitrary Value of 120 mg P/100 gm. Values Falling Below this Figure are Indicated by '-'. The >50 mg P/100 gm Residual is Equivalent to the Highest Value of 170 mg P/100 gm for "Pre-occupation" Soils.

G. DISCUSSION

The sherd scatter and phosphate values, although showing some correspondence, do not show a statistical correlation. Areas of high sherd density around Site 27 and east of Site 2 do, however, correspond approximately to areas of high phosphate values. On terrace I, the sherd scatters surrounding Sites 12 and 14 are not reflected by significantly higher phosphate values.

In general, soil type and sedimentation patterns strongly affect soil phosphate values on terrace III but have only a limited influence on sherd scatter densities. Although the evidence is slight, sedimentation may have resulted in silt accumulation over the sherd scatters.

The low phosphate values on terrace I soils imply that the manuring episode inferred from the sherd scatters was of short duration and had negligible influence on soil chemistry. This conforms to the archaeological evidence which indicates that apart from a brief Halaf occupation at Site 20, habitation only occurred between the fourth and eighth centuries A.D.

In contrast, the terrace III soils, which probably also possessed a higher pre-agricultural phosphate level, exhibited significant areas of enrichment. These probably reflect extended settlement, cultivation, and pasturing of animals over much of the Holocene.

Unlike soil phosphates, the sherd scatters exhibited a short chronological range, namely the late Roman-early Byzantine period, with a possible minor EB component. Where the late Roman-early Byzantine sherd scatters correspond to high phosphate values it is likely that heavy manuring with settlement-derived refuse took place. However, in the high phosphate-low sherd density area east of Kurban Höyük, the evidence for manuring with settlement-derived refuse is meager. Instead, the phosphate values might result from any one or all three of the following causes: intermittent settlement, manuring with animal manure poor in artifacts or from the extended pasturing of animals. Only the physical proximity of this area to Kurban Höyük enables one to tentatively posit that the phosphate enrichment was contemporaneous with settlement at the mound.

H. CONCLUSIONS

Figure 3.6, which shows the component sites of the Şaşkan complex, provides a good example of how intensive site survey can amplify the results of a preliminary survey. After an initial survey, only the two multiperiod mounds of Şaşkan Küçüktepe and Şaşkan Büyüktepe were known (Özdoğan 1977, U50/17 and U50/6, pp. 179–80). Subsequent discoveries during the Kurban Höyük survey program demonstrated the existence of the lower mound and ditched enclosure at Küçüktepe and the lower site at Büyüktepe. Most remaining open space between the two, now extended sites, was occupied by the Neolithic Site 28 plus a small, subsidiary late Roman-early Byzantine settlement at Site 30.

Prior to intensive survey, Küçüktepe and Büyüktepe occupied a modest 0.24 and 1 ha respectively, after erosion. The entire complex as defined by intensive survey occupied some 28 ha. This area, in turn, was surrounded by extensive artifact scatters which resulted probably from manuring with settlement-derived refuse during the late third-early second millennia B.C. and late Roman-early Byzantine times. No similar occupation area was found around Kurban Höyük and the significance of such a hitherto unknown multiperiod settlement complex at the junction of the İncesu Deresi with the Euphrates is a recurrent theme in the following two chapters.

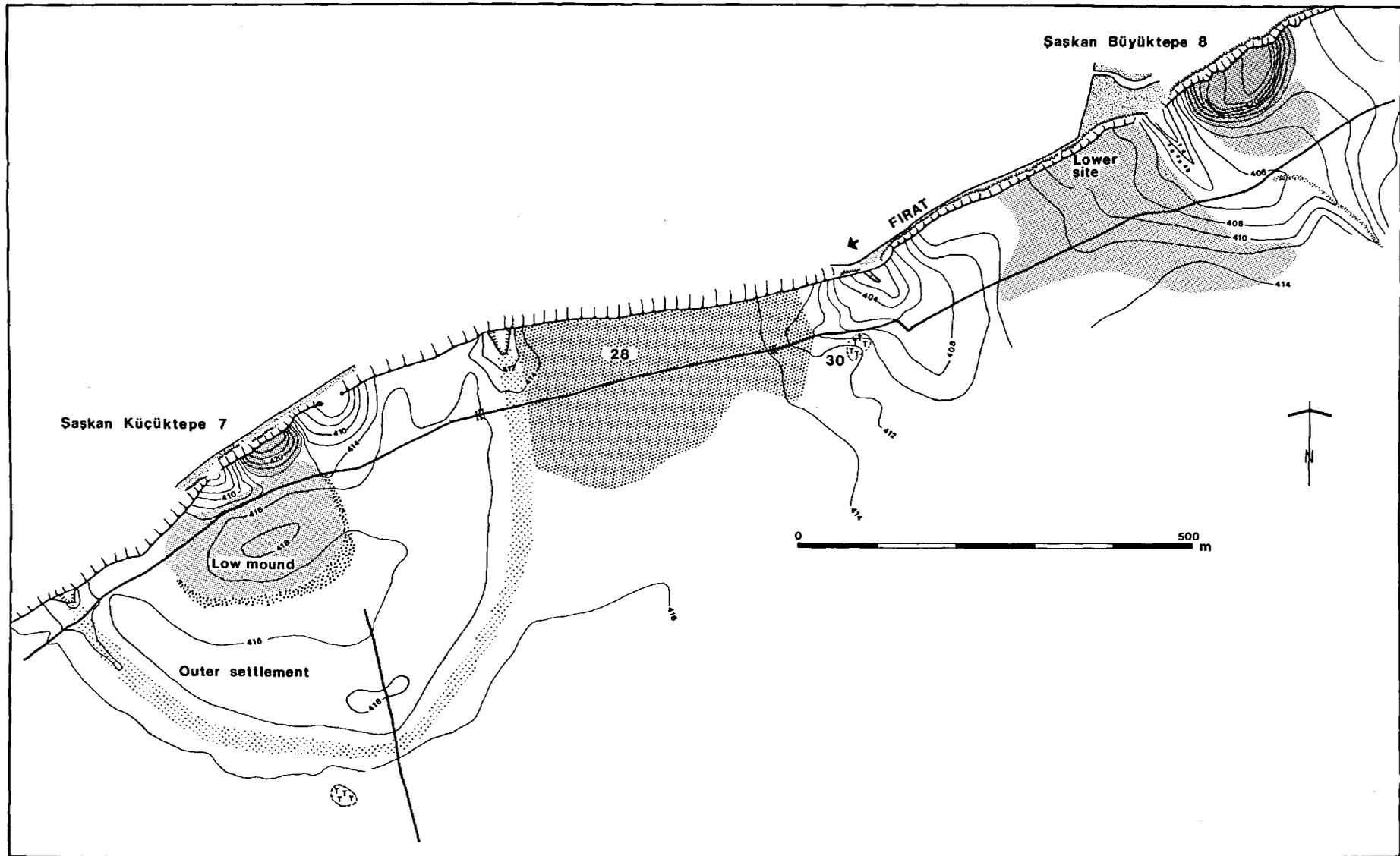


Figure 3.6. Component Sites of the Archaeological Complex which Surrounds Şaşkan Küçüktepe and Şaşkan Büyüktepe.

CHAPTER 4

THE DEVELOPING SETTLEMENT PATTERN:
SIXTH TO LATE THIRD MILLENNIA B.C.

In the following two chapters the evidence of settlement, land use, and the contemporaneous environment will be described sequentially for the ceramic periods recognized. The first period, the Neolithic, not being present at Kurban Höyük, is discussed with respect to the site of Kumartepe on the Şaşkan sector of terrace III. The other periods employed in this chapter correspond to the broad ceramic periods defined at Kurban Höyük (Algaze in Marfoe et al. 1986). The text is not encumbered by detailed site or ceramic descriptions, the burden of which is contained in appendices 1 and 2. The main measurable attributes of each site are given in tables 4.1 and 6.1.

The small number of sites from such a restricted area, some 100 km², is too few to enable histograms of site size to be constructed. Instead, rank-size distributions illustrate simply and concisely the rank and size of the range of settlements cataloged for each period. Under the rank-size rule "... the number of settlements of a given type should continue to increase as size decreases, so that we should not only expect more villages than towns, but more hamlets than villages and more isolated farms than hamlets" (Hagget et al. 1977, p. 114). Because of the so-called 'lower limb effect,' the number of small settlements, that is within the Urfa area, those with less than 100 inhabitants, are fewer than predicted by the rank-size rule (Gülöksüz 1975, p. 148). Where this is the case, the rank-size curve drops off rather precipitously below a threshold size. Conversely if there is a cluster of settlements around a certain size, a flat or decline in the gradient of the slope is evident. Rank-size distributions with a very steep gradient throughout their length are indicative of a nodal system dominated, in this case, by a single nucleated settlement. Although open to question because of the small sample size, the rank-size distributions have the merit of immediacy as well as isolating fundamental characteristics of settlement size distributions.

A. THE NEOLITHIC AND CHALCOLITHIC ENVIRONMENT

Although pollen analysis is to be preferred for the reconstruction of past vegetation patterns, the distance of the survey area from pollen columns of the appropriate date renders their data of dubious value. This is not helped by the disparity between the vegetation sequences from Van (van Zeist and Woldring 1978, pp. 115–23) and the Ghab in Syria (Niklewski and van Zeist 1970, pp. 737–54 and van Zeist and Bottema 1982).

Table 4.1. Site Areas and Aggregate Site Areas Tabulated According to Period, for Periods A–I.

<i>Period</i>	<i>Site</i>	<i>Area in Hectares</i>	<i>Find Reference</i>
A (Neolithic)			
	28	6.04 (best estimate)	figure B.1 (see <i>Appendix B</i>)
B (Halaf)			
	KH*	1.50 (estimated)	KH II **, pls. 1–11, 144, and 165
	18	0.30 (estimated)	figure B.26
	20	0.90 (measured)	figure B.2 and B.3
	27C	0.30 (measured)	figure B.3
	42	0.14 (measured)	figure B.3
	44***	—	figure B.26
Total area 3.14 ha (range = 2.50–3.50 ha)			
Settlement area per 100 km ² = 3.30 ha			
Number of settlements per 100 km ² = 5			
C (Middle Chalcolithic)			
	KH	1.00 (estimated)	KH II, pls. 12–16 and 144
	11	0.30 (measured)	figure B.4
	18	0.30 (estimated)	figure B.26
	25	0.20 (measured)	figure B.4
	39	0.30 (estimated)	figure B.26
	21	—	3 possible period C sherds
Total area 2.1 ha (range = 1.80–2.40 ha)			
Settlement area per 100 km ² = 2.20 ha			
Number of settlements per 100 km ² = 5			
D and E (Late Chalcolithic B and A)			
	KH (D and E?)	(?) (D)	KH II, pls. 17–42, 145,
		4.00 (E)	151, and 157
	15	0.25 (E, measured)	figure B.6
	17	0.30 (E, estimated)	—
	18	0.30 (D, estimated)	figure B.5
	21	0.50 (D, estimated)	—
	39	0.30 (E, estimated)	figure B.26
	44***	—	figure B.26
Total area 5.65 ha (range = 4.80–6.50 ha)			
Settlement area per 100 km ² = 5.95 ha			
Number of settlements per 100 km ² = 6			
F (Early EB)			
	KH	1.00 (estimated)	KH II, pls. 43–52, 146, 152, and 157
	8	0.50 (estimated)	figure B.23

* KH = Kurban Höyük

** KH II = *Town and Country in Southeastern Anatolia, Volume II: The Stratigraphic Sequence at Kurban Höyük.*

*** Sites outside area of detailed survey.

THE DEVELOPING SETTLEMENT PATTERN

Table 4.1. Site Areas and Aggregate Site Areas Tabulated According to Period, for Periods A-I (cont.).

<i>Period</i>	<i>Site</i>	<i>Area in Hectares</i>	<i>Finds Reference</i>
F (Early EB) (<i>cont.</i>)			
	17	0.30 (estimated)	table B.2 (see <i>Appendix B</i>)
	18	0.30 (estimated)	table B.3
	21	0.50 (estimated)	table B.4
	24	0.50 (measured)	figure B.7
	39	0.30 (estimated)	figure B.26
	44***	—	—
Total area = 3.40 ha (range = 2.90–3.90 ha)			
Settlement area per 100 km ² = 3.60 ha			
Number of settlements per 100 km ² = 7			
G (Mid-Late EB)			
	KH	6.00 (estimated)	KH II, pls. 53–96, 146–48, and 157
	8	1.10 (estimated)	figure B.23
	17	2.00 (estimated)	figure B.8
	18	0.30 (estimated)	table B.3
	21	1.10 (estimated)	table B.4
	29***	6.00 (estimated)	table B.5
	43***	25–35 (estimated)	table B.6
	44***	3.10 (estimated)	table B.6
Total area (within detailed survey area) = 10.50 ha (range = 9–12 ha)			
Settlement area per 100 km ² = 11 ha			
Number of settlements per 100 km ² = 5			
H-I (EB-MB transition and early MB)			
	KH	1.20 (estimated)	KH II, pls. 97–136, 148, 149, and 157
	7	0.20 (estimated)	figure B.20
	8	1.10 (estimated)	figure B.24
	13	0.30 (estimated)	figure B.10
	16	0.40 (see ch. 4)	figure B.9
	17	2.00 (estimated)	table B.2
	18	0.30 (estimated)	table B.3
	27B	0.75 (estimated)	—
	37	0.50 (estimated)	—
	41	0.30 (measured)	—
	29***	—	—
	43***	—	—
	44***	—	—
Total area (within detailed survey area) = 7.50 ha (range = 6–8 ha)			
Settlement area per 100 km ² = 7.50 ha			
Number of settlements per 100 km ² = 10			
*KH = Kurban Höyük			
**KH II = <i>Town and Country in Southeastern Anatolia, Volume II: The Stratigraphic Sequence at Kurban Höyük.</i>			
***Sites outside area of detailed survey.			

The former, which demonstrates the existence of a lengthy period of steppe vegetation until forest encroachment reached a maximum at approximately 1600 B.C., contrasts markedly with the latter which indicates a maximum extent of forest between 8000 and 6000 B.C. Kurban Höyük, located within the wetter fringes of Syro-Mesopotamia appears to have experienced a vegetation history intermediate between that of Lake Van and the Ghab. Hence, in van Zeist's tentative palaeo-vegetational reconstruction for 8000 B.P. (ca. 6000 B.C.), the survey area falls immediately south of a belt of 'forest steppe' or steppe with scattered tree stands (van Zeist and Bottema 1982, fig. 14.12). By approximately 4000 B.P. (ca. 2000 B.C.), the woodland may have developed into a continuous cover. On van Zeist's maps, no account is taken of man-made clearances which, as will be shown, must have become progressively obvious throughout the Chalcolithic (van Zeist and Bottema 1982, fig. 14.13). This admittedly tentative reconstruction can be tested by employing the available, but scanty, information provided by excavated plant remains and fauna.

Shortly before the growth of sixth millennium B.C. Kumartepe, a small sedentary community of aceramic neolithic date developed at Gritille Höyük, 11 km to the northeast during the seventh millennium B.C. Faunal remains from the excavated levels suggest a pastoral economy dominated by sheep and goats which comprised almost 40 percent of the sample, outnumbering pigs by almost 4 to 1 (Stein and Wattenmaker 1984, p. 4). Similar figures of 37 percent for sheep/goat and 11 percent for pig were determined by Buitenhuis from aceramic levels at Hayaz Höyük 7 km west of Kurban Höyük (Roodenberg, personal communication). Carbonized plants recovered from Gritille Höyük by flotation include common remains of emmer wheat, lentils, and bitter vetch, whereas barley and a range of wild plants were present only in very small quantities (Voigt 1985, p. 15).

These data conform reasonably well to the characteristic subsistence economy that prevailed through much of the Near East during the Pre-Pottery Neolithic B (PPNB) and described by Clutton-Brock as dependent on "cultivated einkorn and emmer wheat, barley, sheep and goats" (Clutton-Brock 1978, p. 38).

In contrast, by the time of the Pottery Neolithic period at Kumartepe, domestic pig (*Sus domesticus*) formed 45 percent (by weight) of the faunal sample, compared with 29 percent sheep/goat and 17 percent cattle (Roodenberg, personal communication). This development had probably taken place by the early sixth millennium B.C. (uncalibrated ¹⁴C determination on charcoal from the base of occupation at Kumartepe: 5980 ± 80 B.C. GrN-12652).

By the late fourth millennium B.C., the faunal remains from Kurban Höyük, Hassek, and Hayaz were still dominated by pig, forming 51 and 62 percent of the identified sample from the two first named sites. The position was again reversed by the third millennium B.C., by which time sheep and goats again dominated the faunal sample from Kurban Höyük and Gritille (Stein and Wattenmaker in Marfoe et al. 1986).

The above data may reflect, of course, purely cultural or economic strategies in pastoral production, but because of the often quoted association of pig with shifting agriculture in forested areas (e.g., Clark 1947, pp. 122-36) it can be argued that their dominance of the faunal sample signifies at least a partial reliance on a woodland economy.

Charred plant remains from excavated levels at Kurban Höyük suggest that during the early EB (early third millennium B.C.) the area was almost certainly more wooded than

today with oak being the dominant species (Miller in Marfoe et al. 1986). As at Aşvan Höyük in the Keban area to the northeast, oak was probably the dominant source of fuel (Willcox 1974). Nevertheless, at Kurban Höyük throughout the Chalcolithic and Early Bronze Age, trees were probably sufficiently sparse to make animal dung a significant alternative fuel source (Miller in Marfoe et al. 1986).

In summary, during the seventh millennium B.C. when Gritille Höyük was first occupied, the economy was probably oriented towards sheep/goat pastoralism, cereal cultivation, and some hunting, possibly in a more open and steppic environment. A similar environment of forest steppe or steppe with scattered tree stands has been inferred by van Zeist in his reconstruction of vegetation conditions for 8000 B.P. (van Zeist and Bottema 1982, fig. 14.12). There followed, between the sixth and early third millennia B.C., a period in which woodland possibly increased in extent and became a more important element in the subsistence economy.

PERIOD A: NEOLITHIC (EIGHTH TO EARLY SIXTH MILLENNIA B.C.)

Only one well-dated Neolithic site, Kumartepe (site 28) was found within the survey area of Kurban Höyük, but three sites, Nevalla Çori beyond the survey area to the northeast of Kurban Höyük (Hauptman 1984; Mellink 1984), Gritille Höyük, 15 km northeast of Kurban Höyük (fig. 4.4; Voigt 1985), and Hayaz Höyük 7 km west of Kurban Höyük (fig. 4.4, Roodenberg 1979–80), have been excavated during the recent Karababa rescue campaigns. The site of Nevalla Çori, which included cell-like buildings with stone foundations, yielded early aceramic Neolithic artifacts and was probably occupied during the eighth millennium B.C. Slightly later in date was Gritille, again of aceramic Neolithic date, which to judge by a series of six radiocarbon dates, was occupied between ca. 6700 and 5800 B.C. (uncalibrated, Libby half-life; Voigt in press). The latest sherds with smoothed or burnished surfaces and others tentatively described as *vaiselle blanche* (Voigt in press). This latest neolithic artifact assemblage has been suggested as belonging to a settlement phase immediately preceding that of Kumartepe (Voigt in press), but the single radiocarbon date from Kumartepe of 5980 B.C. (see footnote 1) suggests that there may have been an overlap between the latest phase at Gritille and the earliest phase at Kumartepe.

Kumartepe, Site 28, was the only neolithic site recorded within the detailed survey area (fig. 4.1). The first evidence of sedentary occupation appeared during the ceramic Neolithic period and is dated to the early sixth millennium B.C., and a little later.¹ Although a few sherds of Dark Faced Burnished Ware were noted from Chalcolithic contexts at Kurban Höyük, neither in situ deposits nor a full range of artifacts for the ceramic Neolithic were recovered. Similarly at Site 11, the presence of chipped stone tools resembling those from Kumartepe suggested the possible presence of neolithic occupation, but the associated ceramics were wholly of Middle Chalcolithic type.

As described in *Appendix A* and in Roodenberg et al. (1984), Kumartepe appeared to be large, probably extending over some six ha. Excavations conducted by Dr. J. Roodenberg during the brief field season in the autumn of 1983 demonstrated that

1. ¹⁴C determination on charcoal from base of occupation: Grn-12652, 7930 ± 80 B.P., uncalibrated. Dr. J. Roodenberg (personal communication).

occupation deposits spread over at least two ha, and reached a depth of some three meters below the modern ground surface. Only the lower 50 percent of this accumulation contained clearly undisturbed evidence of in situ neolithic occupation. Built structures were sparse but included pebble floors, flint working areas, a few limestone wall foundations with associated traces of mud or mudbrick walling, a hearth, and a plaster floor. In addition a few pebble-filled pits were dug into the horizontal virgin reddish-brown loam substratum (Roodenberg et al. 1984, pp. 4–5).

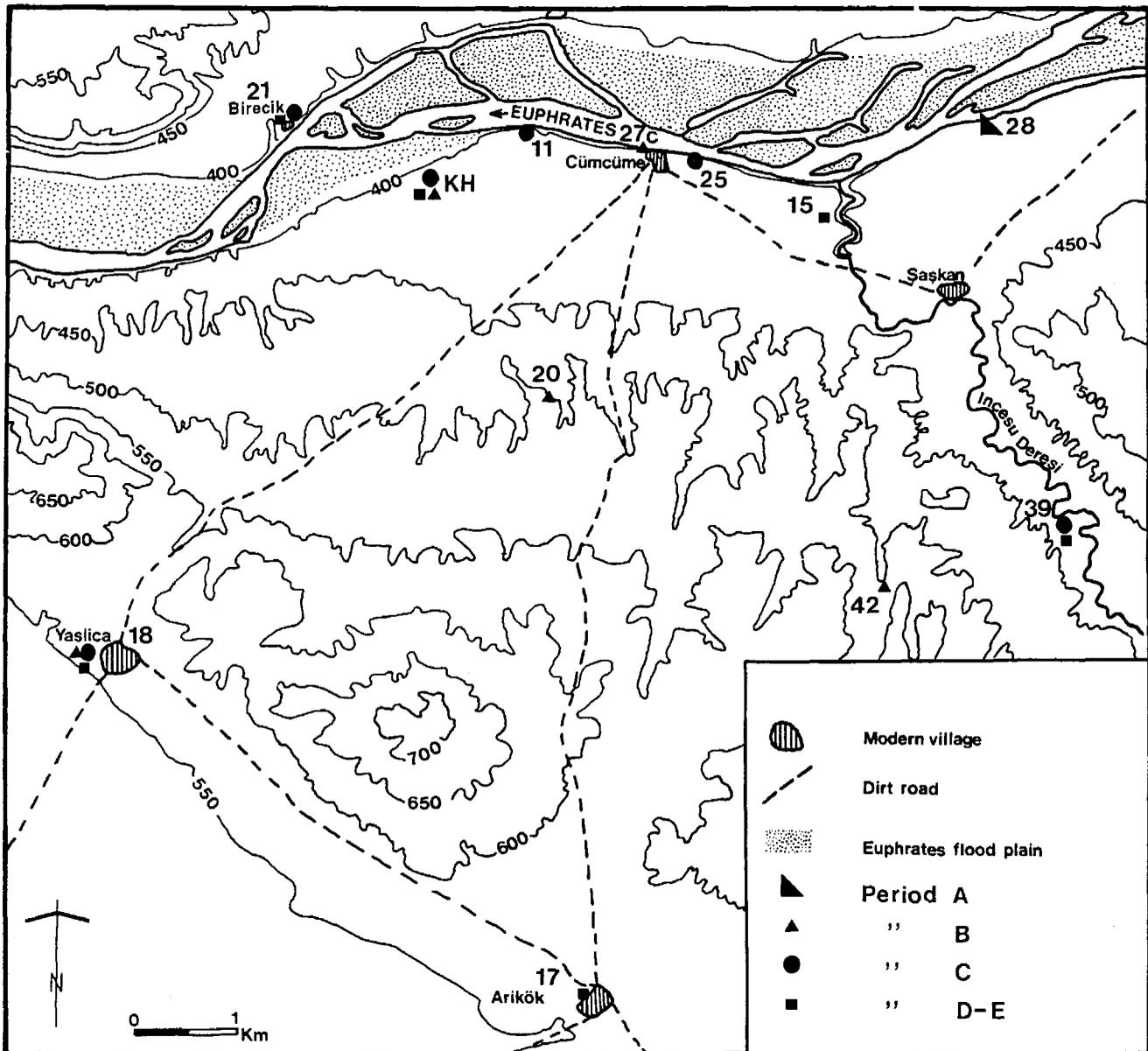


Figure 4.1. Location of Neolithic and Chalcolithic Sites Within the Detailed Survey Area.

If the detailed surface assessment of the site's area is correct (*App. A*, Site 28), Kumartepe must have been the biggest single settlement within the survey area until Kurban Höyük attained its maximum extent in the mid-late EB (mid-late third millennium B.C.). Kumartepe was, however, occupied only briefly and by the Halaf period habitation

had apparently ceased. It is impossible to determine what happened to the occupants of the settlement after its demise, evidence of Early Chalcolithic settlement being absent in the immediate vicinity (fig. 4.1). This absence might be accounted for by the eroded riverward edges of Sites 7, 8, and 28 which all indicated significant lateral erosion by the Euphrates since the Neolithic period.

The artifacts from the site (*App. B*, Site 28) indicate few wide-ranging contacts. The ceramics, although crude and handmade, resemble those from Mersin and the 'Amuq A and B to the west (Roodenberg et al. 1984, p. 8) as well as from sites on the Balikh to the southeast, such as Tell Aswad VIII–VI, Telul Breilat I–II, and Mafraq Slouq (Voigt in press). Obsidian represented less than two percent of the lithic component and many flint tools were manufactured from flints gathered from the Euphrates gravels. The low obsidian count is anomalously low in view of the location of the site within 320–480 km of obsidian sources (Renfrew et al. 1966) and seems to suggest that the site was poorly integrated into exchange systems with the northwest and northeast. The source of the marble-like limestone, employed in the distinctive large rounded bowls, is unknown but was certainly located outside the immediate area of the Urfa-Gaziantep plateau.

The duration of occupation is uncertain, but the single radiocarbon determination together with the absence of both an earlier aceramic horizon and a later painted pottery phase imply a time span covering the early sixth millennium B.C. When calibrated, the radiocarbon result suggests that occupation was present during the late seventh millennium. The sparse evidence of built structures indicates a rather low population density within the settlement. This is likely to have fallen below the frequently quoted population density for urban settlements in the Near East of 125 persons per ha (Adams 1981, p. 69 and note 6) and may have fallen within the lower range measured by Kramer at Shahabad, Iran (119 ± 54 , Kramer 1980). Therefore in spite of its impressive size, the population of the ca. six ha site may only have been in the range of 300–400 persons, all of whom may not have been permanent residents.

The presence of abundant flint microborers, drills, reamers, and burins in excavated layers testify to a wide range of activities on site (Roodenberg et al. 1984, p. 7), but they cannot be used to demonstrate year-round occupation. Evidence of cultivation is equally elusive. On the one hand sickle blade elements, which formed 1.10 percent of a large sample, suggest but do not prove cereal cultivation, whereas the dearth of grinding stones suggests relatively little processing of grain on site. As described above, the pastoral economy was dominated by pig with domesticated sheep, goat, and cattle being subsidiary sources of meat and/or secondary products (J. Roodenberg, personal communication).

In conclusion, the site of Kumartepe, although extensive, may have had a population little greater than a modern village. The location of the site at the northern end of the İncesu corridor corresponds to a favored location for settlement from around the early third millennium B.C. until medieval times. The significance of the location of Kumartepe on an important route to the Jazirah and Balikh headwaters to the southeast is strengthened by Voigt's suggestion that the ceramics from Kumartepe show as many (or more) parallels with sites in these areas as to the west (Voigt in press). This suggests that the north-south İncesu valley route formed a significant locational factor as early as the sixth millennium B.C., and probably operated as a conduit for people, goods, and ideas from the steppe and Balikh headwaters in the south and east towards the Taurus foothills in the north.

PERIOD B: HALAF (KURBAN HÖYÜK PERIOD VIII;
LATE SIXTH-EARLY FIFTH MILLENNIA B.C.)

The Halaf period witnessed a dramatic change in the settlement geography of the area with five sites, all apparently below two ha in surface area, being dispersed across the 100 km² of the survey area (fig. 4.1). Beyond this area, Halaf occupation was also confirmed at the base of Bozova Höyük. Of the sites yielding Halaf painted pottery, two, Kurban Höyük and Site 18, were at the base of multiperiod mounds, and as a result of the mass of overlying layers their occupied areas proved difficult to estimate. At the former site, excavation demonstrated that occupation was limited to the larger south mound and consequently the site area has been estimated as a modest 1–2 ha. This figure is a little larger than for the Middle Chalcolithic settlement that followed. Sites 20, 27C, and 42 were all single component Halaf sites but were not necessarily contemporaneous with each other. Nevertheless, the similarity of the painted ware from Sites 18, 20, and Kurban Höyük suggests that the first two sites may have at least one phase in common with the lengthy Halaf occupation at Kurban Höyük. Only Site 20, located on the high terrace I (fig. 4.1) was well defined spatially. The estimated area of 0.9 ha compared with an estimated area based upon pit distributions of 0.3 ha for Site 27C and on artifact scatters of 0.14 ha for Site 42.

Building types were only evident at Kurban Höyük where excavations at the base of the Area A sequence exposed five phases of construction which included the stone foundations of a rectangular and two *tholos*-type structures in superimposed levels (Ingraham in Marfoe et al. 1986). A dense scatter of limestone foundation stones together with a door socket, suggests that similar structures may have been occupied at Site 20. In contrast, at Site 27C located to the west end of Cümçüme village the only structures present were pits, probably for the storage of wheat or lentils. Basalt grinding stones (saddle querns or grinding slabs: Ataman in Marfoe et al. 1986) were also present in Halaf deposits at Kurban Höyük and at Site 20. These stones confirm the palaeobotanical evidence that cereals and lentils were in use and probably were cultivated in the vicinity (Miller in Marfoe et al. 1986).

The artifact assemblages from the five sites share characteristics with painted wares from a wide range of sites located within the Halaf style zone of northern Syria, northwest Iraq, and southeastern Turkey. In addition, coarse, usually chaff-tempered wares were also common, but at Site 20, where the best surface assemblages were present, owing to differential abrasion of the softer coarse wares it proved impossible to calculate relative proportions of coarse to painted wares (see *App. B*, Site 20, and Algaze in Marfoe et al. 1986, fig. 21). Obsidian tools were present, but as in the preceding Neolithic period obsidian only formed a small percentage of total chipped stone. In fact the proportion of obsidian tools at Kurban Höyük was so small that McDonald has suggested that the source was merely obsidian collected from neolithic sites in the area (in Marfoe et al. 1986). Basalt for grinding stones must have been imported, either from the Karadağ area, 75 km to the east of Kurban Höyük, or from Kara Köprü, some 45 km to the southeast, near Urfa. A soft green stone resembling chlorite used in the manufacture of small stone bowls of high quality found at both Kurban Höyük and Site 20 was also imported, but its source is unknown.

During the early fifth millennium there was evidently a marked increase in the number of settlements compared with the preceding Neolithic period. The total settlement area declined however from an estimated six ha down to a little over three ha during the Halaf Period. These figures cannot be used to demonstrate unequivocally that population declined because of the aforementioned low building density within Site 28. Also, it is not clear whether sites as large as Kumartepe were very common within the Karababa area. Nevertheless, it is evident that during the fifth millennium settlement locations diversified to include the limestone-fringed basin of Yaslica-Arikök and the high Euphrates terraces as well as the main terrace III. The trend onto the high terrace was only repeated significantly during the late Roman-early Byzantine period when the population density of the survey area attained an all-time high (see ch. 5). The expansion of site locations was not restricted to the Kurban Höyük area for, amongst others, a small Halaf settlement has recently been investigated at Çavi Taulosi by a team directed by Dr. Behm-Blancke (Mellink 1985, p. 555). The site, located a little above the proposed flooding limit of the Karababa dam near Hassek Höyük, consisted of several phases of *tholoi* and, like Sites 20 and 42, was situated on a high terrace near a spring.

The Halaf period represents the first well-defined step in the development of a continuous network of settlements within the survey area. Only two nodes of the later settlement pattern were missing: the absence from Arikök Höyük (Site 17) may be explained by the substantial covering of EB and later occupation deposits whereas the absence from the Şaşkan area *may*, as mentioned above, result from lateral erosion by the Euphrates.

The settlements appear to be small and there is no evidence of a hierarchy of site sizes (fig. 4.2). On first impression the wide dispersal of small settlements is perplexing. The total area of approximately 3.20 ha, assuming population densities of around 100 persons per ha, would house some 300–350 people. This, employing calculations using present day cropped areas and cropping intensities, could all be accommodated on and sustained by terrace III and a small area around Yaslica. If instead of annual cropping, fallow intervals of varying duration were employed the sustaining area for the sites would expand considerably. If the most extensive short fallow or bush-fallow techniques were employed, the settlement of the high terrace would then become a realistic option in view of the expanded sustaining area required for a settlement. The significance of extended fallow periods in the evolution of settlement patterns and land use systems is amplified in chapter 6.

The above mentioned extension of population on to the high terrace must be viewed within the contemporaneous environmental setting. During the fifth millennium, the options provided by the high terrace were almost certainly more enticing than today. Much or all of the bare, gullied bluffs are a post-Early Bronze Age development (see ch. 1) and the water supply was almost certainly more generous than today. This is vividly illustrated by the spring which issues opposite Site 20. Today the water merely seeps from the base of a 2–3 m high limestone scarp. This feature has resulted from a phase of higher spring activity which, by means of ‘spring sapping’ has caused the headward retreat of the adjacent rock face (Sweeting 1972, p. 215). As suggested in chapter 1, during the early Holocene, when the landscape was less degraded and infiltration was greater, higher spring discharges would almost certainly have prevailed. Therefore unlike today when the settlements of the

settlements of the high terrace, namely Akpınar and Dokuzköy (abandoned early twentieth century), have proved to be very marginal, during the Halaf these niches would have provided a realistic option for the development of settlement.

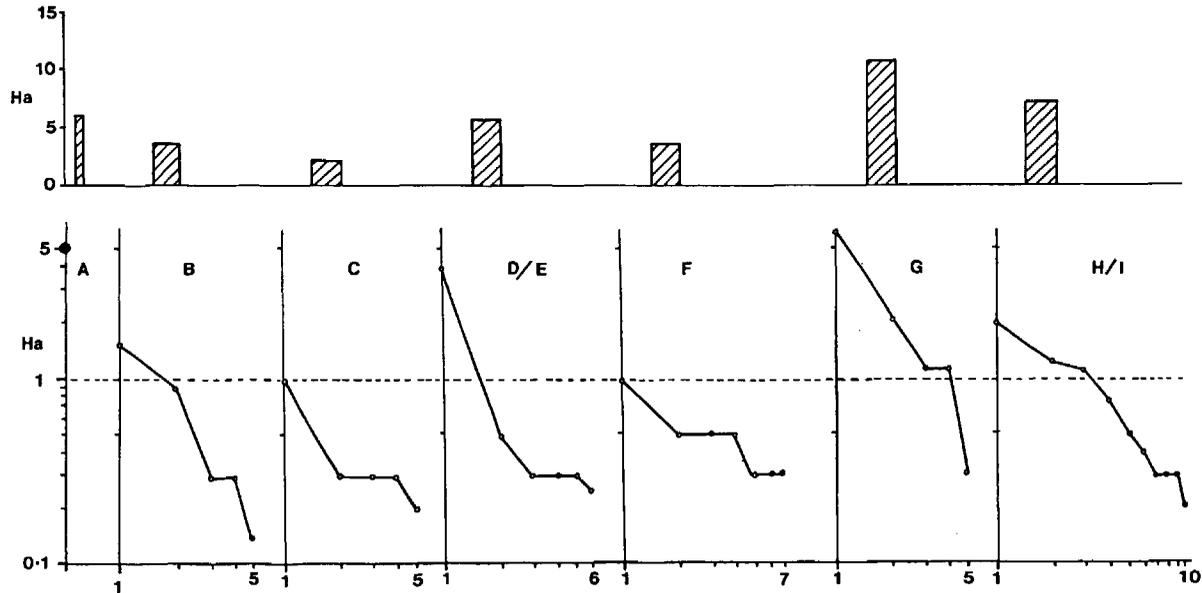


Figure 4.2. Rank-Size Graphs and Aggregate Site Area Histograms for Settlement Periods A-I.

In conclusion, it is necessary to view the settlement of the Halaf period within the following perspective:

- a. More attractive 'wet point' locations were available on the high terrace.
- b. A longer fallow interval than one year cultivation to one year of fallow may have been practiced.
- c. A greater woodland cover may have formed a mosaic interspersed within cultivated land and pasture on both terrace I and terrace III.

PERIOD C: MIDDLE CHALCOLITHIC (MID-FIFTH-EARLY FOURTH
MILLENNIA B.C.; INCLUDES KURBAN HÖYÜK PERIOD VII)

The Halaf period settlements were followed by a rather ill-defined period designated, for convenience, the Middle Chalcolithic. Certain elements of the matte-painted pottery showed affinities with northern or 'local' Ubaid wares, although as Algaze has pointed out, these are often more local than Ubaid. The pottery from the survey is described in *Appendix B* (Sites 11, 18, 25, and 39) but the salient point to be emphasized is that the occupation of the four recorded sites is not necessarily contemporaneous with that excavated from Kurban Höyük. The pottery from the period VII deposits in Area C, although of similar general type, provided few identical wares or decorative elements.

Not only were the chronological phases apparently fragmented, but also settlements were smaller and less well-defined than during the Halaf period. Occupation had withdrawn from terrace I and was developed on terrace III or on land of comparable elevation away from the Euphrates. The Middle Chalcolithic produced the first recorded evidence of settlement along the İncesu Deresi (fig. 4.1, Site 39).

Little can be said about the architectural layout of settlements. Site 18, at Yaslica, was buried beneath several meters of overlying occupation deposits, as was the settlement at Kurban Höyük, Area C. The presence of one stratigraphic phase of the latter settlement at the base of the smaller northern mound enabled its area to be estimated to a modest one ha or possibly even less. The exposure was too small to reveal building layouts.

Two short-lived Middle Chalcolithic sites, Sites 11 and 25, of 0.30 and 0.20 ha respectively, were defined in the field. These can have been little more than the settlements of extended families, and the dearth of foundation stones within the site scatters implies that buildings were either solely of mudbrick or were of some other medium such as wood or reeds.

The rank-size curve shows the settlements to be small and dispersed with no tendencies towards the development of a central place (fig. 4.2). The slight decrease in total settlement area since the Halaf (tab. 4.1) is compounded by the possibility that several of the sites may not have been occupied at the same time. Consequently the total settlement area, which amounted to approximately 2.10 ha, may have accommodated rather less than the estimated 200 people.

The pattern of small, dispersed settlements like that of the Halaf may have been associated with a similar extensive long fallow system. Even if such a land use system was in operation, the population was apparently not large enough to justify the development of secondary settlements on the high terrace at this time.

PERIODS D AND E: LATE CHALCOLITHIC (KURBAN HÖYÜK PERIOD VI: FOURTH MILLENNIUM B.C.)

As has been suggested above, the fourth millennium B.C. environment was probably significantly more wooded than both the modern landscape and that of the late third millennium B.C. Main cultivated crops remained the Near Eastern staples, namely, wheat, barley, and lentils and it was at this time that flax attained its peak in production (preliminary information from Miller, table 7, in Marfoe et al. 1986). Carbonized grape seeds appeared for the first time in the archaeological record at Kurban Höyük. If the grapes were grown locally, it can be inferred by analogy with modern crop patterns (see ch. 2) that a small vineyard probably developed either on the lower limestone slopes between terraces I and III, or on the gravel fans immediately to the south of Kurban Höyük.

The recovery of substantial deposits of Late Chalcolithic date from Kurban Höyük has enabled the ceramic record from the site to be subdivided into two phases with an additional third phase being supplied from survey sources (Algaze KH II). Because this tripartite ceramic subdivision is crucial to the interpretation of the settlement record it is necessary to review the evidence and its implications.

At Kurban Höyük two broad ceramic phases were distinguished for the Late Chalcolithic. The first was defined on the basis of the dominance of chaff-tempered ceramics characteristic of 'Amuq Phase F (Kurban Höyük period VIB). The second was characterized by a continuation of the previous wares with the addition of grit-tempered Plain Simple Wares (PSW) and a range of Uruk-type forms which also included beveled

rim bowls (Kurban Höyük period VIA). Algaze has demonstrated the gradual nature of the change from an early chaff tempered period VIB to a later grit-tempered period VIA assemblage. With the exception of a pure chaff tempered pit group from Area C01 (Pit 203), no pure chaff tempered or grit tempered assemblages were isolated. It has been suggested, however, from the evidence of this pit group that there was a very early chaff tempered phase at Kurban Höyük (Algaze in KH II, pt. two, ch. 8).

Although the same two classes were also recognized during survey, no single phase Late Chalcolithic B sites were found. Therefore the illustrated assemblage has been selected from a collection made at Site 18 on the basis of its typological similarity to the Kurban Höyük period VIB assemblage (*App. B*, fig. B.5). It is not therefore a pure, independent assemblage. In contrast to the Late Chalcolithic A assemblage from Kurban Höyük (period VIA), that collected from Sites 15 and 39 was exclusively grit-tempered, with the exception of a few beveled rim bowls. This was also the case at Grik Tepe further upstream (Özdoğan 1977, T52/20; Algaze KH II).

The presence of an overwhelmingly grit-tempered assemblage on two small, peripheral sites and its absence on the large mound of Kurban Höyük is of some significance to the interpretation of the settlement distribution. Although it might imply that a chronologically later stage existed within the Late Chalcolithic, the ceramic forms are the same as those from Kurban Höyük period VIA. It is unwise to dismiss the absence of the softer chaff-tempered wares on the basis of their vulnerability to abrasion because the presence of beveled rim bowls suggests that at least some chaff-tempered wares would be expected to survive. The stylistic parallels with Kurban Höyük show that the outlying sites are at least ceramically contemporaneous with Kurban Höyük period VIA. But, the outlying sites might have contained a more limited assemblage of pottery, perhaps reflecting functional differences between Kurban Höyük and these settlements. A similar interpretation has been made for Late Chalcolithic sites around Malyan in Iran (Alden 1979). Bearing this difference in mind, the pottery classes employed for the purposes of survey are essentially the same as those identified at Kurban Höyük: an earlier dominantly chaff-tempered and a later grit-tempered assemblage.

The Late Chalcolithic B occupation was predominantly present on the southern mound at Kurban Höyük, at Site 18, and also was represented by a few sherds from Site 17. No single period sites were found, and the record is altogether too sparse to indicate the presence of any settlement hierarchy. The ceramics belong to a pottery tradition which exhibits parallels in the ʿAmuq and a number of sites in the Syrian Jazirah (Algaze in KH II, pt. two, ch. 4). This assemblage was then progressively replaced by Uruk-related ceramics that show strong parallels with Mesopotamian types.

Although the total number of sites is meager, the introduction of Uruk-related pottery coincides with a striking change in the settlement pattern. Both mounds of Kurban Höyük showed significant occupation and the settlement expanded to an estimated size of four ha. During at least part of this occupation small, isolated settlements developed at Sites 15 and 39 along the valley of the İncesu Deresi. Although the latter developed on a Middle Chalcolithic settlement, there was no evidence of an intervening chaff-tempered phase corresponding to Late Chalcolithic B. Site 15 was occupied only briefly and neither earlier nor later ceramic phases were present. Finally two or three examples of Kurban Höyük period VIA forms at Site 17 suggest an Uruk presence at that site probably buried beneath

the thick later occupation deposits. Beyond the survey area, both chaff-tempered wares and a beveled rim bowl were recovered near the base of Bozova Höyük, Site 44. Surprisingly, in spite of detailed searches, there was no evidence to suggest a Late Chalcolithic occupation at either Şaşkan Büyüktepe or Şaşkan Küçüktepe. Although Özdoğan observed chaff-faced wares of apparent Late Chalcolithic type, as well as a few other Late Chalcolithic indicators at these sites, none of the distinctive Kurban Höyük or 'Amuq F assemblages were found during the intensive survey program. In view of the substantial lateral erosion incurred along this southern edge of the Euphrates flood plain, it is feasible that a Late Chalcolithic settlement has been removed by the river. Therefore the absence of settlement from this area should not be viewed as indicative of any significant negative locational factor.

What is not clear from the survey evidence is whether the gaps in the Chalcolithic sequences recorded at multiperiod Sites 17, 18, and 21 are accurately representative of the history of settlement, or whether they merely exemplify the difficulties of obtaining representative ceramic collections from multiperiod sites. In spite of this problem, the evidence that is available demonstrates that during the period of Mesopotamian trade and influence Kurban Höyük expanded considerably in size, probably to accommodate 300–400 people or more. Simultaneously, subsidiary hamlets, probably housing only a few groups of about ten people developed at approximately 4 and 8 km from this main settlement. In turn, Kurban Höyük may have been subsidiary to Samsat. The settlements of the period are therefore characterized for the first time in the archaeological record by the growth of a marked nodal center which probably included a wider range of functions than the smaller, previous Chalcolithic settlements on the same site.

In spite of the punctuated Late Chalcolithic record, with the exception of the Şaşkan mounds (Sites 7 and 8), all the major nodal mounds of the survey area (Kurban Höyük, Sites 17, 18, and 21) showed evidence of occupation during Late Chalcolithic times. The presence during Late Chalcolithic A of a marked settlement hierarchy provided a conspicuous contrast with the Early Chalcolithic settlement pattern of small dispersed hamlets and villages and set the stage for the growth of the well-developed settlement system of the Early Bronze Age.

The expansion of total settlement area during the Late Chalcolithic must have been concurrent with both an increase in population and in crop production. Settlement did not take place on terrace I, however, and instead it appears that the main focus remained terrace III. In order to minimize the journey to work in the fields, cultivation would have been concentrated on terrace III also. The combined effect of increasing population and a finite cultivable area on terrace III would have logically resulted in an increased intensity of land use. This may have developed from a long fallow system during the Middle Chalcolithic (theoretically as much as one year of cultivation followed by eight years of fallow) to a relatively short fallow system of one year cultivation to two years of fallow during the fourth millennium B.C. Although speculative (see ch. 6), these figures indicate that by an adjustment of farming practice the entire population of, for example, period VIA Kurban Höyük and Site 15 could have been sustained from terrace III production. The cultivation of this expanded and probably intensified field area would have been assisted by the plow which was introduced by Late Chalcolithic times, if not earlier (Adams 1981, p. 80 and Oates 1972, p. 305).

B. THE EARLY BRONZE AGE ENVIRONMENT

The third millennium B.C. produced the first evidence of landscape degradation during the archaeological record. As described in chapter 1, aggradation commenced at this time to the south of Cümcüme village to form 2–3 m of fan gravels over a palaeosol dated ceramically to before the EB-MB (late third millennium B.C.). The aggradation, which resulted from the accelerated erosion of nearby limestone slopes, was in turn probably initiated by devegetation and forest removal.

As was suggested above, the dominance of pig bones in Late Chalcolithic faunal assemblages may indicate a more forested environment during the fourth millennium B.C. By the onset of the third millennium B.C. the pastoral emphasis had reverted to sheep and goat husbandry, but pigs remained significant and pig bones were especially common within certain sectors of the excavated settlement at Kurban Höyük during the late third millennium (Stein and Wattenmaker in Marfoe et al. 1986).

Oak charcoal, especially from early EB contexts (early third millennium B.C.), points to a significant cover of oak woodland in the area (Miller in Marfoe et al. 1986). This supports, in a general way, van Zeist's tentative reconstruction of the vegetation around 4000 B.P., which indicates a virtually continuous woodland cover by the end of the millennium (van Zeist and Bottema 1982, fig. 14.13). The only significant difference between the proposed model and that of van Zeist is that in the region of Kurban Höyük local factors may have led to woodland removal in the latter half of the millennium.

Wheat, barley, and lentils continued to be the major field crops while the presence of carbonized grape seeds indicate the increased significance of viticulture. The last named attained their peak in the flotation record during the mid-late EB (mid-third millennium) when the site of Kurban Höyük attained its maximum area. Nuts, pistachios, almonds, and acorns increased in importance through the millennium to attain their peak towards the end of the millennium (Miller in Marfoe et al. 1986).

Using the above-mentioned faunal and palaeobotanical indicators in concert with the evidence of accelerated erosion, the following vegetation history can be suggested: A significant quantity of woodland probably existed on the limestone hills, the upper terrace and its fringing scarps, as well as along the flood plain edges during the early third millennium B.C. Gradually during the millennium, as the source of wood fuel declined, dung became increasingly significant as a fuel source (Miller in Marfoe et al. 1986), and eventually by the end of the millennium devegetation had proceeded to such an extent that a major episode of soil erosion was underway.

PERIOD F: EARLY EB (EARLY THIRD MILLENNIUM B.C.; KURBAN HÖYÜK PERIOD V)

In marked contrast to the preceding Late Chalcolithic A, the settlement pattern of the early EB was one of dispersed hamlets and villages. Of the seven settlements recorded within the detailed survey area, none appears to have been much more than one ha in size. At Kurban Höyük the settlement of this period was limited to the smaller, northern mound and covered an estimated one ha. All the major settlement nodes within the survey area were occupied: Kurban Höyük, Sites 8, 17, 18, and 21, but, with the exception of Kurban

Höyük, their occupied areas could only be tentatively estimated from the quantity and approximate distribution of artifacts on site.

Of the smaller, dispersed settlements, Site 24 (fig. 4.3) developed overlooking a spring close to what must have been the territorial limit of the nodal settlements of Kurban Höyük and Site 8. A second small settlement, Site 39, developed on a pre-existing Chalcolithic settlement which overlooked the İncesu Deresi, 3.50 km to the south. Together with Site 8 and Kurban Höyük these show a regular spacing of sites at intervals of 3–4 km, probably in order to extract the optimum use from agricultural land and water resources. The small size and increased number of sites produced a low gradient rank-size curve which provides a marked contrast with that of the preceding Late Chalcolithic and succeeding mid-late EB periods (fig. 4.2). Beyond the immediate survey area, early EB occupation was noted at Bozova Höyük (Site 44).

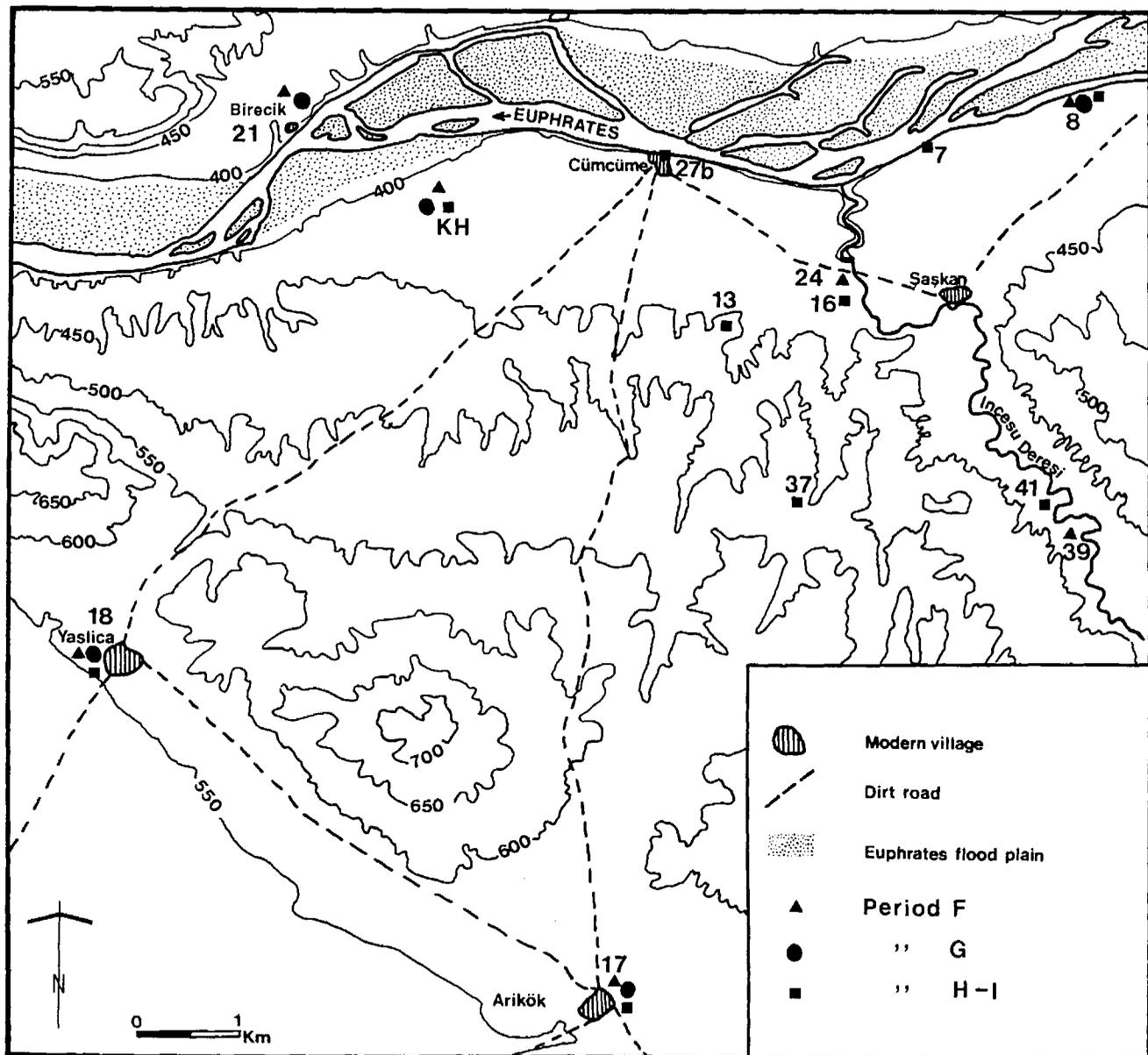


Figure 4.3. Location of EB and MB Sites Within the Detailed Survey Area.

At Kurban Höyük the boundary between the Late Chalcolithic A and the early EB levels (periods VIA and VB respectively), although exhibiting an architectural break, was not marked by a radical change in the ceramic sequence. In area C01 a crucial transitional horizon is described by Algaze (KH II, pt. two, ch. 9). In this horizon (period VB) chaff-tempered pottery was virtually absent, as were beveled rim bowls and other Uruk indicators. Some grit-tempered Plain Simple Ware forms were shown to continue and evolved into early EB forms. The newly introduced coarse wares ('cooking pot wares') exhibited Anatolian affinities and variations of this type were shown to continue in use throughout the Early Bronze Age. Few ceramics of this period find parallels with those of northern Syria, and none with south Mesopotamian types. In contrast to the preceding Late Chalcolithic A, the ceramic parallels demonstrate a shift in orientation away from southern Mesopotamia towards northwest Syria, the 'Amuq, and the Anatolian highlands, specifically with the Keban-Malatya region (Algaze in KH II, pt. two, ch. 9).

The ceramic continuity, exemplified by the forms of the transitional horizon, was also traced at Sites 8, 17, 39, and possibly Site 21. At Site 8, the absence of the preceding Late Chalcolithic wares implies that either the settlement was established during the early EB or that a pre-existing Chalcolithic settlement was initially present but was eventually eroded by the Euphrates. Interestingly, the pottery from Site 24 included two small cups (Kurban Höyük bowl 5a) characteristic of the transitional horizon. Their presence suggests that the settlement developed immediately or very soon after the demise of Late Chalcolithic Site 15 situated 500 m to the north. In view of the position of Site 24 on the putative territorial limit between the two early EB nodal settlements of Kurban Höyük and Site 8, it is tempting to see Site 15 as fulfilling a similar role; in this case with the eastern node having been removed in antiquity.

Surprisingly, three adjacent early EB sites, Kurban Höyük, Site 8, and Site 24, with surface areas approximating to a mere 1, 0.5, and 0.5 ha, respectively, all produced examples of pottery wasters. All were of small cups, apparently of *cyma-recta* type. Although the manufacture of utilitarian cooking pots in hamlets with as few as 40–60 people might have been expected, the production of wares of such high quality suggests that each settlement down to hamlet level might have been equipped with a throwing wheel and a kiln capable of achieving temperatures up to vitrification point. Moreover, the localization of production units in this way would make trade in such items virtually unnecessary.

Similar observations, but for Late Chalcolithic wares, pertain to the Mesopotamian plains where Adams has observed that Late Chalcolithic sites as small as 0.20 ha showed evidence of ceramic production (Adams 1981, p. 78). What this means in terms of social organization remains debatable, but clearly the early EB phase of settlement fragmentation and dispersal was also accompanied by the dispersal of functions more normally associated with urban sites.

If settlement population densities for the early EB sites were comparable to those of the Late Chalcolithic, the decline of aggregate site area from around 5.60 ha to 3.40 ha implies a decline in total population with a concomitant decrease in land use intensity. Both settled population and land use intensity may therefore have declined to the level of the Middle Chalcolithic or Halaf periods. With such a low land use intensity, it seems unlikely that the inferred vegetation degradation and accelerated erosion noted above commenced at this

period, and the absence of settlements from the high terrace I suggests that this terrain unit may have remained as woodland or wooded-steppe mosaic throughout the early third millennium B.C.

PERIOD G: MID-LATE EB (CA. MID-LATE THIRD MILLENNIUM B.C.;
KURBAN HÖYÜK PERIOD IV)

At Kurban Höyük, following a hiatus in occupation of unknown duration, the site was re-occupied and attained its maximum spatial extent during Kurban Höyük period IVB. At this time the settlement occupied both mounds and occupation deposits of this date were intercepted in all excavated trenches. The estimated area of some six ha indicates that the mid-late EB settlement was probably the main nodal settlement within the area of fig. 4.3. In contrast to the early EB, subsidiary hamlets were absent and Sites 24 and 39 were abandoned. Sites 8, 17, 18, and 21 continued as nodal settlements and may have increased in size, although the presence of later archaeological deposits precluded the accurate definition of the areas of such multiperiod mounds. Further afield, Sites 29, 43, and 44 were all substantial nodal settlements, and among them Tiriş Höyük (Site 43) attained the veritable 'urban' area of 30 ha. The mid-late EB settlement geography of the greater survey area is elaborated below.

A wide range of distinctive new pottery types appeared with the first mid-late EB levels at Kurban Höyük. Parallels for these wares extended through a broad arc from the western Habur basin in the east to the 'Amuq plain in the west. Further north, eastern Anatolian painted wares indicated interaction with the Murat and Keban region. Unlike the previous phase of nucleated settlement development during Uruk times, direct Mesopotamian influence cannot be inferred from ceramic evidence alone and instead the area appears to have fallen within the zone of northern Syrian city states.

The increasing nucleation of nodal sites resulted in a steep, peaked rank-size curve which contrasted markedly with that of the early EB sites (fig. 4.2). Aggregate settlement area also increased within the survey area to three times that of the preceding period. Within the confines of the Kurban Höyük-Cümcüme terrace III area, aggregate settled area increased from 1.50 ha to around 6 ha. Assuming a standard population density of 100 persons per ha and that one ha of cultivated land, cropped annually, would produce the grain equivalent of crops for two people, the total population of some 600 people at Kurban Höyük would require approximately 300 cultivated ha for basic crop production. The evidence of a peak in carbonized grape seeds during Kurban Höyük period IV implies that viticulture attained its maximum extent at this time, possibly approaching that of today (see ch. 2). If allowance is made therefore for 80 ha of vines, albeit on relatively low quality gravel fans to the south of Kurban Höyük, it appears that in order to cultivate 300 ha every year, the 620 ha of terrace III (i.e., 70–80 ha of vineyards) would require cropping every two years. If the population inferred for Kurban Höyük (above) is an underestimate, which is quite possible if other comparative data are employed (Hassan 1981, p. 298), then the threshold for one year cultivation-one year fallow would be crossed and an annual cropping system would result. If this were not adopted, some settlement would need to develop on the high terrace. Although these calculations are very approximate, they serve to demonstrate that the available land on terrace III might have been just sufficient to support

a settlement of six ha without resorting to an intensive manuring-cultivation system. The survey evidence indicates that mid-late EB settlement did not take place on the high terrace, neither was there evidence of manuring using settlement-derived refuse. If manuring did take place, it must have been with animal dung left either by pasturing herds or collected from byres but not from artifact-rich sources. Such a process may account for the rather high soil phosphate values that surround Kurban Höyük (see fig. 3.5).

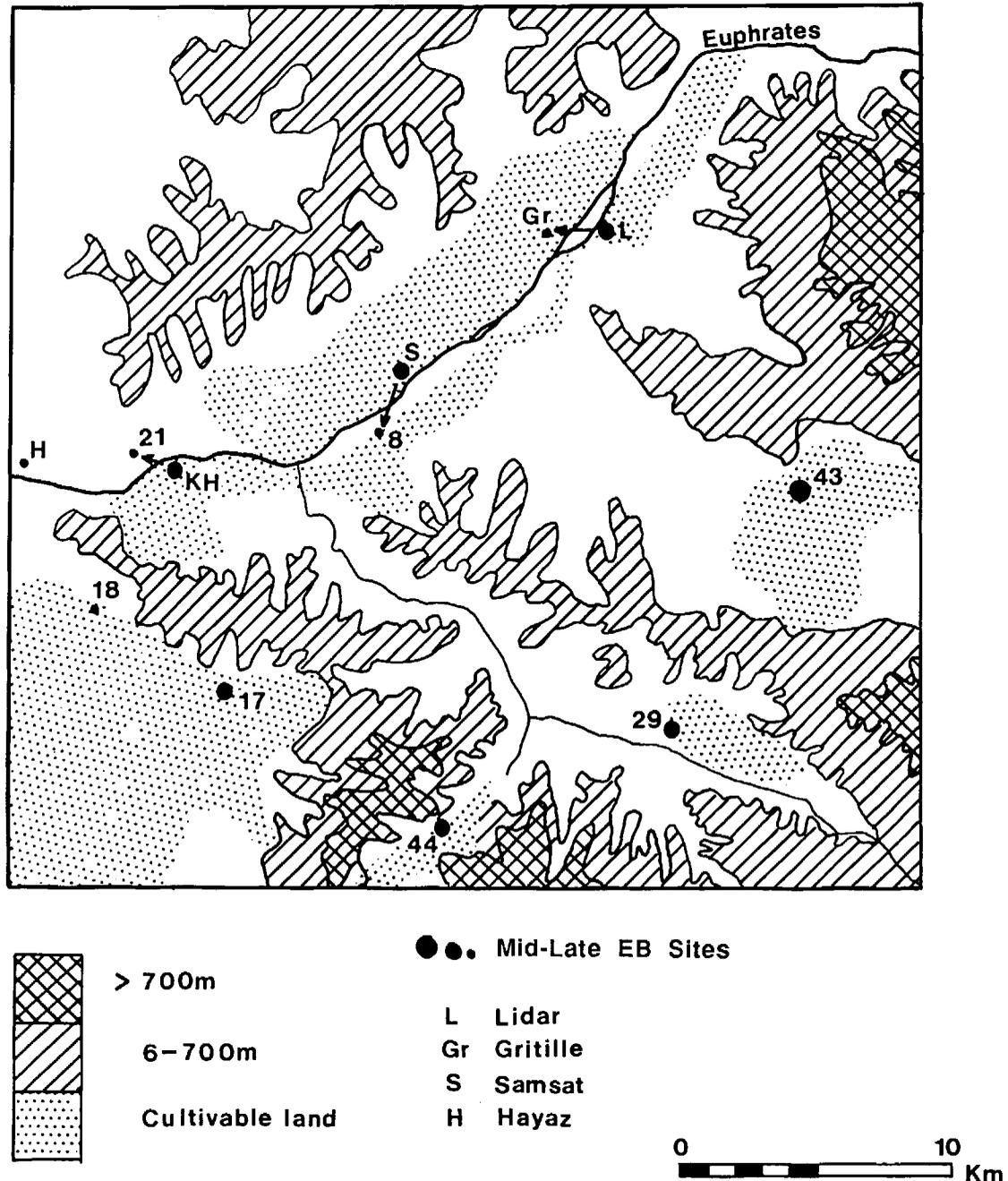


Figure 4.4. Distribution of Mid-Late EB Sites Within the 1000 km² "Area of Interest".

Brief site visits made during the field seasons enabled the general network of nodal settlements south of the Euphrates to be established. When combined with the results of Özdoğan's survey (1977) and recent excavations at Hayaz, Gritille, and Lidar it is possible to sketch a preliminary mid-late EB settlement geography for an area of approximately 100

km² (fig. 4.4). The absence of small, dispersed hamlets within the detailed survey area suggests that such hamlets might also have been absent from other areas, thus facilitating the reconstruction of at least a preliminary settlement pattern. Nevertheless, figure 4.4 must be viewed with the possibility in mind that some smaller settlements of this date remain undiscovered.

Nearest neighbor measurements from the figure 4.4 map indicate a mean settlement spacing of 7.30 km; this is considerably greater than equivalent measurements for the following period (EB-MB) or for the modern settlement pattern. The wider spacing than that of modern settlements can be adequately accounted for by the absence of subsidiary hamlets which diminish mean settlement spacing considerably. In fact, the main nodal settlements of the mid-third millennium B.C. usually occur within modern villages and in some ways the modern pattern duplicates that of the Early Bronze Age nodal settlements.

By the superposition of contour lines from small-scale topographic maps, data from LANDSAT images, and selected archaeological information, it was possible to place the mid-late EB settlements within a framework of physical resources, communications, and approximate site territories (fig. 4.4). Cultivable lowlands occupy 243 km² (24,300 ha) or some 23 percent of the mapped area of 1,056 km². The land was divided between ten sites, all but one (Site 18) being over one ha in size. A further two sites, Birecik Höyük (Site 21) and Hayaz Höyük, were developed within cultivated areas too small to be mapped using LANDSAT sources.

Each cultivable lowland or terrace area contained between one and three nodal settlements. Each site would have access to a mean area of 24 km² of cultivable land, although as we know from the Kurban Höyük catchment that only land situated within convenient access to the settlement would have been cultivated. The smallest cultivable enclave defined, approximately 9.40 km² around Bozova Höyük, was still more than enough to sustain the estimated settlement area (ca. 3.10 ha). Catchment boundaries probably conformed to watersheds or drainage lines, and roads were evidently mainly along major valleys or across cols which cut through ridges.

The resultant map, although probably inaccurate in detail, indicates how the topographically fragmented terrain may have been subdivided into a mesh of smaller territories, each comprising a cultivable lowland, intermediate valley side slopes, and uplands. The territories, which ranged in size from 28 to 110 km², occupied three zones on figure 4.4:

- a. A line of settlements along the northern bank of the Euphrates: Hayaz, Birecik (Site 21), Samsat, and Gritille.
- b. An equivalent line which followed the southern bank of the Euphrates: Kurban Höyük, Şaşkan Büyüktepe (Site 8), and Lidar Höyük.
- c. An inland settlement zone 6–14 km south of the Euphrates: Yaslica (Site 18), Arikök (Site 17), Bozova (Site 44), Tatarhöyük (Site 29), and Titriş Höyük (Site 43).

The more extensive area of interest also encompassed an extended settlement rank-size hierarchy (fig. 4.5). Paramount among these settlements is Titriş Höyük (Site 43, *App. A*) which with an area of 25–35 ha may have contained a population of between 2500 and 5000 people. On the basis of an inscription of a high official under Shu-Durul, the penultimate king of the Akkadian dynasty (ca. 2168–2154 B.C.), Titriş must have had

official relationships with Akkadian Mesopotamia at this time and may have been an important Akkadian outpost or regional center (Marfoe et al. 1986). Although falling within the most accepted span of occupation for period IV at Kurban Höyük, it is not clear whether this inscription was contemporary with period IVA or IVB. If it was contemporary with the later period (IVA), this was a time when the settlement apparently retreated to the southern mound of the site. Because of problems inherent in the resolution of fine chronological phases from ceramic data alone, it is not therefore possible to establish unequivocally that both Tiriş Höyük and Kurban Höyük attained their urban florescence simultaneously. Notwithstanding such problems, it is evident from the broad distribution of mid-late EB pottery forms over the entire lower site at Tiriş that for at least part of this period the settlement emerged as a substantial urban center. It clearly dominated the regional settlement hierarchy, although settlements such as Lidar may also have been significant urban centers as well (fig. 4.5). Evidently, during the mid-late EB, and in part contemporary with the Akkadian dynasty, the settlement network became highly nucleated with an established hierarchy of central places, some of urban proportions. Although the ceramics from these sites are more characteristic of a zone encompassing northern and northwestern Syria, communications, for official purposes at least, must have extended into the Akkadian heartland of Mesopotamia.

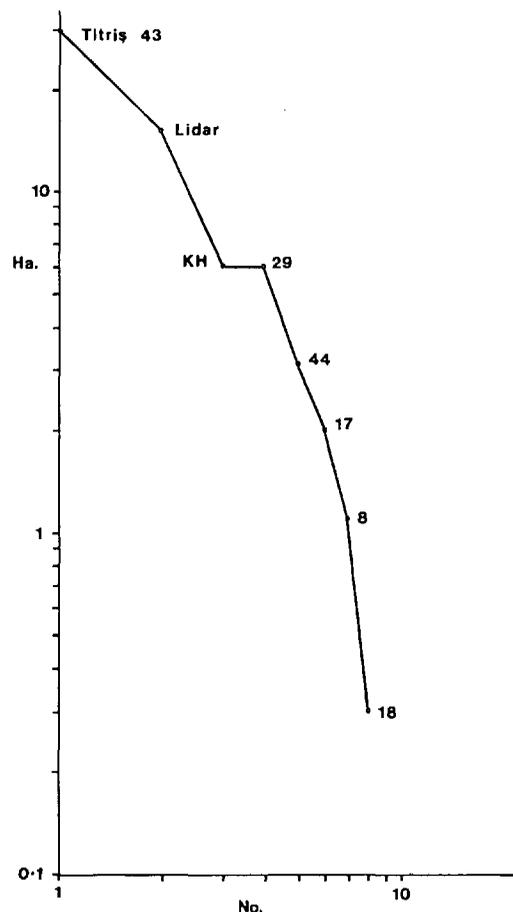


Figure 4.5. Rank-Size Hierarchy for the Mid-Late EB Sites South of the Euphrates.

The pattern of settlements along the Euphrates probably best exemplifies the importance of communication links within the region. On figure 4.4, the distance between sites can be seen to be much less for those on opposite banks of the Euphrates than for those located elsewhere: the cross river spacing ranges from 1.50–2.70 km; the mean spacing of all sites was 7.30 km. From their proximity, it is logical to deduce that the linkages are indicative of a high degree of interaction between the sites, but from their obliqueness it is evident that neither bridges nor fords provided the communication links. In two of the three cases (the size of mid-late EB Samsat is unclear, Algaze, personal communication), the larger mid-late EB settlement was upstream of the smaller settlement. This may suggest that the latter formed the receiving settlements for goods or people disbursed from the larger upstream settlement. The prime-settlement:receiver-settlement pattern was as follows: Lidar: Gritille, Samsat: Şaşkan Büyüktepe (Site 8), Kurban Höyük: Birecik (Site 21). A subordinate relationship may therefore account for the relatively small size of mid-late EB Şaşkan and Birecik compared to other nodal settlements within the region. In other words, they may not have been autonomous central places but may have grown in response to the upstream settlement during the period in question.

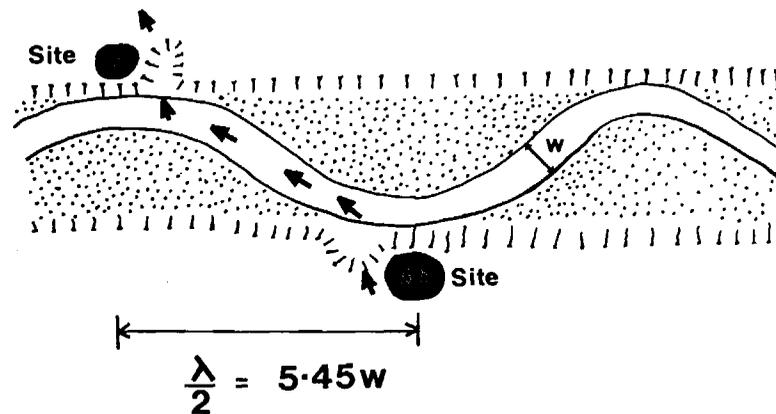


Figure 4.6. Diagram Illustrating the Possible Mode of Cross-River Transport.

On initial inspection, the downstream site of each pair appears to be displaced an unduly long distance downstream from the upstream site. In normal conditions, crossing the ca. 200 m wide river today with even a mere rubber inner tube (for earlier times read inflated goatskin) would entail a displacement due to current action of a few hundred meters at most. It was however probably more expedient to transport goods across the entire flood plain, thus avoiding swamps, old channels, rough ground, et cetera located within the flood plain. If it is therefore assumed that the upstream settlement was located where a river bed impinged upon the terrace edge, it would be necessary for the downstream 'receiver settlement' to be fully half a meander wavelength away, again at the point of impingement (fig. 4.6). The present, complex, anastomosing channel pattern precludes the definition of a simple yardstick of downstream displacement based upon channel geometry. Nevertheless, for a mean channel width of 200 m, a *meandering* channel would have a one-half wavelength of some 1090 m.² This figure probably represents a minimum distance because braided channels may exhibit longer wavelengths

2. Wavelength = 10.90 w^{1.01} where w = channel width; Leopold, Wolman and Miller 1964, table 7.11.

than those which meander. Nevertheless, this model does illustrate the most efficient route between two population centers.

Similar paired EB settlements interpreted from the survey data at Özdoğan (1977, pl. 13) may be as follows: T51/44 and T51/39 upstream of Lidar Höyük; T52/18 (Hasek) and S52/11 (Tille). Although other paired relationships could be inferred, the ceramic evidence for their simultaneous occupation is less secure.

During the mid-late EB, pronounced settlement nodality appears to have developed in association with a strengthened network of communications. The latter were of both local importance, as exemplified by the suggested cross-river links, as well as extending to as far away as Mesopotamia. As is shown in the next section, they were, however, vulnerable to changes in the economic-political milieu and could not outlast the settlement pattern that nourished them.

PERIODS H AND I: EARLY BRONZE AGE–MIDDLE BRONZE AGE TRANSITION (LATE THIRD–EARLY SECOND MILLENNIA B.C.; KURBAN HÖYÜK PERIOD III)

The period IV settlement of mid-late EB date at Kurban Höyük was abandoned probably around 2100 B.C. and, following a brief hiatus, the southern mound was reoccupied by a small settlement which covered some 1.20 ha. Some pottery forms continued in use from the preceding period, but a variety of new Plain Simple Ware forms were introduced. Many of the ceramic classes resemble both late EB and MB types from sites in northern Syria, but at Kurban Höyük they were demonstrably contemporaneous, being found often in a semi-complete state on floors within the Area D complex (Algaze in Marfoe et al. 1986). Survey demonstrated this Kurban Höyük period III assemblage to be common on sites in the survey area, but in the case of two sites (Sites 8 and 13) an additional range of distinctive MB forms were also present. Ceramic parallels from Tell Hadidi, Mardikh, and Halawa (Dornemann 1979, Matthiae 1977, and Orthmann 1981) suggest that occupation continued at Sites 8 and 13 possibly as late as Syrian MB II (ca. 1800–1600 B.C.). These sites were almost certainly inhabited throughout most of the first quarter of the second millennium B.C., thereby outlasting the settlement at Kurban Höyük.

Clearly the EB-MB was even more of a transition on the survey sites than at Kurban Höyük. For analytical purposes, although it should have been necessary to distinguish between Kurban Höyük period III and full MB occupied areas on Sites 8 and 13, no spatial distinction was possible. As a result, all EB-MB sites are presented together on the rank-size curves.

Following the nucleation of the mid-late EB, settlement again resumed a dispersed pattern with a total of ten sites being occupied within the detailed survey area (fig. 4.3). Small settlements reappeared along the İncesu Deresi, very close to those abandoned towards the end of early EB times. Hence Site 24 was replaced by Site 16, which developed on a hilltop to the south of the spring (*App. A*, fig. A.8). The modest site area of 0.15 ha, as measured in the field, may be an underestimate resulting from the burial of occupation beneath debris deposited on the foot of the slopes surrounding the site. No evidence of such a lower occupied area was visible however. Furthermore, the presence of several EB-MB sherds at Site 6, on the opposite bank of the İncesu Deresi, may indicate the presence of outlying occupation. Consequently the measured site area of some 0.15 ha has been upgraded by an additional 0.25 ha to allow for these contingencies.

Further south along the İncesu Deresi the Chalcolithic and early EB Site 39 was replaced by EB-MB occupation at Site 41 (fig. 4.3). Other evidence of settlement came from sparse traces of small settlements at Sites 27B, 13, 7, and 37. The main nodal settlements continued to be occupied, but the decline in occupied area at Kurban Höyük was matched by an apparent cessation of habitation at Birecik, possibly in response either to a decline in cross-river trade, or because channel movements encouraged the locus of settlement to shift. Sites 8, 17, and 18 all remained in occupation, but the total inhabited areas proved difficult to estimate (tab. 4.1).

Of particular interest was the development of minor settlements such as Site 16 close to the mutual territorial boundary between Kurban Höyük and Site 8. This appeared to be part of a developing process. The first stage in the locus of settlement development was represented by Late Chalcolithic Site 15 which grew up 4 km east of Kurban Höyük overlooking the İncesu Deresi and 300 m south of the Euphrates. The abandonment of the site was followed, possibly without a chronological break, by the development of early EB Site 24, which was situated roughly midway between the early EB sites of Kurban Höyük and Site 8. Following a hiatus, which corresponded to the mid-late EB stage of settlement nucleation, Site 16 was established on higher ground during the EB-MB, eventually to be replaced by Site 13 on still higher ground 1 km to the east, later in the same period. The latter site continued to be occupied some time after the demise of Kurban Höyük (period I) and was itself abandoned during the Middle Bronze Age.

It is difficult to account convincingly for the above trajectory of settlement movement, but the initial move during the late fourth millennium B.C. from Site 15 may have been to obtain a cleaner or more reliable water source, the İncesu Deresi by this time being occupied and farmed around Site 39 and beyond. The later stages, all of which were located near springs, appear to belong to a trend towards higher sites. Although the move to Site 16 may have been merely to avoid settling on cultivable land, the move to Site 13 may have been for military reasons. This hilltop stronghold, apparently encircled by a curtain wall and commanding both terrace III and a major road to the south, makes a strong case for an increased emphasis on defence around the turn of the millennium.

The ubiquity of settlement during the closing stages of the third millennium is supported by the record from the greater survey area. The three sites examined, Sites 29, 43, and 44, all showed a strong presence of EB-MB occupation and continued to be occupied well into the Middle Bronze Age (*App. B*, fig. B.26 and accompanying text).

Within the detailed survey area, despite an increase in settlement numbers from five during the mid-late EB to probably ten during the EB-MB transitional period, the aggregate settlement area shows a decline to some two-thirds of its former peak. It was still, however, double that of the early EB. Most of the aforementioned decline can be accounted for by the precipitous decline of Kurban Höyük from 6 to 1.20 ha. In view of the problems of estimating both occupied area and the contained population, there is a broad margin of error in these figures. Interpreted conservatively they clearly indicate a movement to outlying settlements together, possibly, with a slight population decline.

The archaeological record of this period was complicated by the presence of a sparse scatter of EB sherds over areas of modern fields on terrace III (fig. 4.7). These were part of a much more persistent scatter of late Roman-early Byzantine sherds which are discussed in chapter 5. Among the EB sherds were a small number of mid-late period

pressure on the animal dung resource which probably had a long history of use as a subsidiary fuel (Miller in Marfoe et al. 1986). Consequently there was a higher demand than before for artifact-rich settlement-derived manure for use as fertilizer. This episode contrasts with the preceding population peak during the Late Chalcolithic when purely animal manures may have been applied because the high woodland cover still provided a source of fuel.

The late third or very early second millennium B.C. witnessed the final demise and abandonment of Kurban Höyük, but judging from the record of MB ceramics at Site 8 occupation and cultivation continued on the Şaşkan sector of terrace III (period I). During the final stages of Kurban Höyük's occupation there may have been a transfer of population to Site 8. Although field evidence was obscure, the latter site possibly expanded thus initiating a phase of increased land use intensity exemplified by the 'field scatters' of figure 4.7. During the early second millennium B.C. settlement stage, the only trace of occupation within the former territory of Kurban Höyük was at the hilltop stronghold of Site 13. There followed a significant decline in the archaeologically recognizable evidence of settlement which is described in chapter 5.

C. DISCUSSION

Before discussing the development of settlement patterns from the Neolithic period to the early second millennium B.C., it is necessary to emphasize that the number of sites occupied at any given time is a much more reliable statistic than aggregate settlement area. Area statistics vary from rather accurately measured areas made on single component sites to crude estimates on multiperiod mounds. The outcome of this amalgam is that differences of less than 10–20 percent in the aggregate occupied area may not be significant in terms of population. In order to provide some measure of accuracy, figures on table 4.1 are indicated as measured or estimated and a likely range in aggregate occupied area is appended in brackets (± 15 percent).

For the earliest stages of sedentary occupation, the change from the single large nucleated site of Kumartepi to the dispersed scatter that followed in the Chalcolithic period poses many problems of interpretation. Firstly, it is unlikely that sites comparable in size to Kumartepi were distributed evenly over, for example, the Karababa area. Instead, such sites may represent localized population concentrations within very extended territories. Secondly, unlike sites such as Çatal Höyük Phase VIB, of comparable date, Kumartepi may have been rather sparsely settled. If so the approximate estimate of six ha (more or less depending upon one's interpretation of the field data) may have contained as few as 300 people or less, not all in residence at one time.

The phenomenon of grouping of population into large single settlements was not necessarily long lived. Hence Kumartepi showed no traces of Chalcolithic occupation. Similarly, the 11 ha PPNB settlement of Abu Hureyra in Syria was abandoned before the full development of the ceramic Neolithic (Moore 1975, p. 63). The 13 ha settlement of Çatal Höyük attained almost urban proportions during the early sixth millennium B.C. and its formation has been interpreted as that of a 'gateway' town for those entering this Anatolian obsidian source area (Mellaart 1967; Todd 1976). A similar emphasis upon inter-regional communications may be paralleled by Kumartepi's position on the İncesu corridor. Çatal Höyük apparently dominated the settlement pattern of its region, there

being only a few contemporaneous satellites within the Konya plain (French 1972, p. 232; Todd 1976, p. 129). This 'large agglomeration phase' was then replaced by 'small agglomerations' (5500–4000 B.C.) and 'small agglomerations and farmsteads' (4000–3000 B.C.; French 1972, pp. 232–33).

The above scheme well describes the evolution of settlements around Kurban Höyük, where the small Halaf and Middle Chalcolithic settlements appear to belong to a phase of small communities relying on a mixed cultivation and pastoral subsistence economy. The dispersal of settlements on to the high terrace during Halaf times is taken to indicate a settlement expansion, but one characterized by a non-intensive cultivation system. As to whether it represents a subsistence economy based on long fallow intervals, separated by short episodes of hoe cultivation requires further research (Smith and Young 1972, p. 44). Certainly for other parts of Syro-Mesopotamia Oates has argued that the plow might have been introduced by the Samarran period (sixth millennium B.C., Oates 1972, p. 305), but for the survey area the small communities observed might have been adequately sustained by long fallow hoe cultivation.

If the evidence provided above for the Halaf and Middle Chalcolithic periods is taken as representative of a wider area, it is likely that a density of some 5 sites per 100 km² may have prevailed over much of the plateau and lowland mosaic of southeastern Turkey. Aggregate settlement areas would suggest population densities of two to three persons per km² averaged over extensive areas of terrain.

Trade and interaction with distant regions appear to have been better developed during Halaf times than either the preceding or the following periods. Ceramically, the Karababa falls within the western part of the Halaf style zone, an area characterized by a greater proportion of coarse wares than in the Halaf core area of northern Iraq (Algaze in Marfoe et al. 1986). Soft stone objects of chlorite-steatite suggest trade with areas beyond that of Halaf settlements whereas obsidian, as in the Neolithic period, was rare and may not even have been traded at this time (McDonald in Marfoe et al. 1986). The paucity of obsidian during both the Neolithic and Halaf occupations is unusual given that Kumartepe appears to have developed on a major road and the Halaf sites show good evidence for an extended trade network. This is compounded by the known extension of Halaf sites into the obsidian producing region of eastern Turkey (Mellaart 1975, p. 162).

Although the pottery of both the Halaf and Middle Chalcolithic (loosely 'local Ubaid') sites has widespread parallels within their respective style zones, they appear to include a wide range of 'local painted wares.' If pottery manufacture was as localized as for example during the early EB, most settlements would have been equipped with kilns and some workshop facilities and long distance ceramic trade might have been less vigorous than the ceramic parallels might suggest.

An endogenous ceramic culture, with parallels predominantly within northwestern Syria and the 'Amuq (Phase F), prevailed during the earlier stages of the Late Chalcolithic. This pattern was progressively transformed during the fourth millennium B.C. by the introduction of a range of Uruk-type Plain Simple Wares of characteristic southern Mesopotamian type. The excavated evidence from Kurban Höyük suggests that initial contacts were probably indirect, but progressively became more tangible during the late fourth millennium B.C. when an Uruk outpost was established at Habuba Kabira to the south and a related indigenous settlement developed at Hassek Höyük.

Irrespective of the mechanism underlying the inclusion of the Karababa area within the Uruk economic sphere, it is evident that this event was accompanied by a substantial expansion and nucleation of settlement. Aggregate site area (tab. 4.1) indicates a mean Late Chalcolithic population density of perhaps 6–8 persons per km², that is two to four times that of the preceding Halaf and Middle Chalcolithic. The ceramic record, itself eloquent testimony to the wide ranging contacts of the period, is supplemented by the first evidence of copper and viticulture at Kurban Höyük (Snow and Yener, and Miller in Marfoe et al. 1986).

Unlike southern Mesopotamia, where Adams was able to document a substantial demographic flux concomitant with urbanization within the Uruk period, in the hilly flanks we are merely able to demonstrate a trend towards settlement nucleation. This was accompanied, around Kurban Höyük at least, by the establishment of small, outlying settlements (Sites 15 and 39) which set the pattern of settlement distribution for the following millennium and beyond. Furthermore, many Late Chalcolithic nuclear settlements became the eventual sites of modern villages, which in four out of five cases were established by this time. Only Şaşkan Köy, which today occupies a location 2 km southwest of the original settlement complex (Sites 7 and 8), did not display a long history of occupation.

The settlement dispersal which marks the change from Late Chalcolithic to the early EB was associated with less evidence of contact with Mesopotamia and a greater affinity with northwestern Syrian material cultures. The development of a network of expanded nodal settlements that followed during the mid-late EB witnessed the renewal of tangible contacts with Mesopotamia in the form of the late Akkadian inscription from Tiriş Höyük. As a counterweight to this evidence, however, the ceramic assemblage is characteristic of the northern Jazirah in Syria, with a subsidiary eastern Anatolian component (Algaze in Marfoe et al. 1986). The nucleation of settlements which was accompanied by increased evidence of cross-river links again suggests a strengthening of the communication network. This can be interpreted from the regional map (fig. 4.4) as being primarily along major valley systems which lead southwards towards Harran and northern Syria. The expansion of Tiriş Höyük (Site 43) into truly urban proportions (ca. 30 ha) that occurred during the mid-late EB can be compared with a period of maximum urbanization in Mesopotamia during late Early Dynastic times (ca. mid-third millennium, Adams 1981, p. 138). In northern Syria Ebla emerged as a major urban center between 2400 and 2250 B.C. (Mardikh IIB1) and, although it is possible that the Karababa basin fell within the broader area of influence of Ebla (Matthiae 1977, fig. 47), it was probably beyond the area of direct political control of the Eblaite kings (Algaze in KH II, pt. two, ch. 10). Many sites in northern Syria and northern Mesopotamia attained their peak size during the second half of the third millennium B.C. and within the survey area, peak settlement size combined with maximum settlement nucleation, may be linked with a strengthening and extension of communications. This reflects Boserup's contention that, "there is a close correlation between population density and the feasibility of creating a transportation network" (Boserup 1983, pp. 390–92).

During the EB-MB, some cross-river links appeared to decline with Kurban Höyük diminishing in size and Birecik, its downstream subordinate, showed no sign of occupation. The settlement dispersal of this period may have been associated with a minor

concentration of population at Site 8 which, being the downstream subordinate of Samsat, would have continued a strong interaction with this local center. As aggregate site area appeared to decrease during the early second millennium B.C., the survey area still showed ceramic links with sites in northern Syria: MB Halawa, Hadidi, and Mardikh for example. Then, at some time towards the middle of the millennium, ceramic parallels became elusive and the settlement pattern became obscure for approximately one millennium.

CHAPTER 5

SETTLEMENT DISCONTINUITY AND CHANGE: MID-SECOND MILLENNIUM B.C. TO THE PRESENT DAY

This chapter commences with a poorly documented episode which followed the shift of settlement from Kurban Höyük to the Şaşkan area during the early second millennium B.C. Except for the early Islamic (Kurban Höyük period II), an excavated pottery assemblage was lacking and more reliance has been placed on ceramic parallels from outside the region. In addition, some preliminary statements have been provided by the excavators of sites within the Karababa area.¹ Because of the absence of a full comparative assemblage, only traded items, fine wares or particularly distinctive pottery types, have been used for dating purposes and as a result fine chronological divisions were difficult to achieve. In spite of these problems, certain historical periods, notably the late Roman to Medieval periods (ca. late third-thirteenth centuries A.D.), were subdivided sufficiently to throw considerable light on demographic changes during this phase of fluctuating frontiers. Other periods, such as the Late Bronze and Iron Ages are poorly served by the survey record. These will be discussed, where necessary, in the light of the quality of survey evidence and a more limited range of ceramic parallels. In fact some artifact assemblages from both single component and multiperiod sites are virtually 'floating,' and although tentatively dated these must await the further publication of excavated assemblages before they can be fixed chronologically.

There follows an outline of the slender evidence for environmental change in the region. The evidence for settlement development and change is then presented, as before, period by period, with a primary focus on the area of detailed survey. Finally, an interpretive discussion will attempt to place the settlement periods wherever possible within their historical or regional setting. A more general theoretical discussion of the demographic evolution of the area as it relates to changes in the environment and land use is given in chapter 6.

A. ENVIRONMENTAL CHANGE SINCE THE EARLY BRONZE AGE

As outlined in chapters 1 and 4, the closing phases of the Early Bronze Age appear to have been marked by the localized development of gravel fans, most probably in response

1. I am grateful to Dr. R. Ellis, G. Stein, and S. Redford of Gritille, Dr. H. Hauptmann of Lidar, and Dr. D. French of Tille Excavations as well as A. Northedge for providing assistance in dating the post-third millennium B.C. pottery.

to accelerated erosion resulting from deforestation. Evidence for a similar event elsewhere in the region came from two lakes: Gölbaşı Lake some 75 km northwest and Bozova Lake 15 km south-southeast of Kurban Höyük respectively (van Zeist et al. 1970).

At the former site, a pollen core documented some deforestation shortly after 3080 ± 115 B.P. (GrN-4873). This event was followed by the deposition of two meters of sediment during approximately 1000 years at which time the intensity of human activity increased. This event, dated to between 900 B.C. and A.D. 200, was concurrent with or was followed by a general trend of rising valley bottom water tables which may have resulted from the damming effect of the extending alluvial fan (van Zeist et al. 1970, p. 35).

The Bozova Lake pollen core provided little direct evidence of vegetation change, tree pollen being low throughout. On the other hand, the sedimentary sequence may relate to changing intensities of soil erosion of the region. The lake deposits comprised 2.05 m of gray clay over 0.20 m of brown clay which in turn overlay 2.55 m of reddish-brown clay with concretions. The last named rested on bedrock. The lowest reddish-brown clay was almost certainly a palaeosol comparable to that covering the Euphrates terraces and below the aggraded gravel fan sequence at F, south of Cümcüme (fig. 1.7F). This essentially stable episode was followed by the eroding of brown and then gray soils as, presumably, gully erosion on the adjacent hillsides incised into the underlying limestone. Although less conspicuous than the badlands around Cümcüme, some 5–6 km² of degraded limestone are discernible on LANDSAT images of the area. If constant sedimentation rates are assumed through the column, the inception of deposition can be tentatively dated to 1300–800 B.C. from a radiocarbon determination of 2590 ± 70 B.P. (GrN-4874) taken near the base of the gray clay. Because of the various imprecisions involved in estimating sedimentation rates, as well as the problems of standard deviations and calibration, it is not justifiable to interpret the data too closely. In spite of these problems, the geomorphological evidence from near Cümcüme, when combined with the pollen core evidence from Bozova, suggests that between the close of the Early Bronze Age and perhaps the early Iron Age we have indications of accelerated erosion probably caused by devegetation. During the first millennium B.C. and into the first millennium A.D., a decline in woodland was concurrent with a phase of more intense human activity at Gölbaşı. At this site a secondary decline in oak woodland occurred somewhat later and is tentatively estimated to have occurred between A.D. 500 and 900.

The long distances between the sequences described renders both a chronological or spatial interpretation of the events suspect. It is therefore only possible to say that, compared with the Chalcolithic period and probably the early third millennium B.C., the environment appears to have become progressively deforested. This may have been more in response to local changes in population and land use than to a single chronological event, but in total the result was an inexorable loss of vegetation and soil from the slopes of the hills and at least localized aggradation in the valley bottoms.

PERIOD J: LATE BRONZE AGE AND IRON AGE (LATE SECOND–EARLY FIRST MILLENNIA B.C.)

Reliable, stratigraphically controlled ceramic sequences terminated with period III at Kurban Höyük (period H of the survey) and the subsequent Middle Bronze Age surface collections (Survey period I) were poorly defined because of the absence of a local

reference collection. Consequently it proved impossible to determine the duration of MB occupation at Site 8 after the abandonment of Kurban Höyük. There followed a period of a little over 1,000 years which had to be unraveled from multiperiod sequences at Sites 7 and 8 and from four single component sites: Sites 5, 31, 40, and 47.

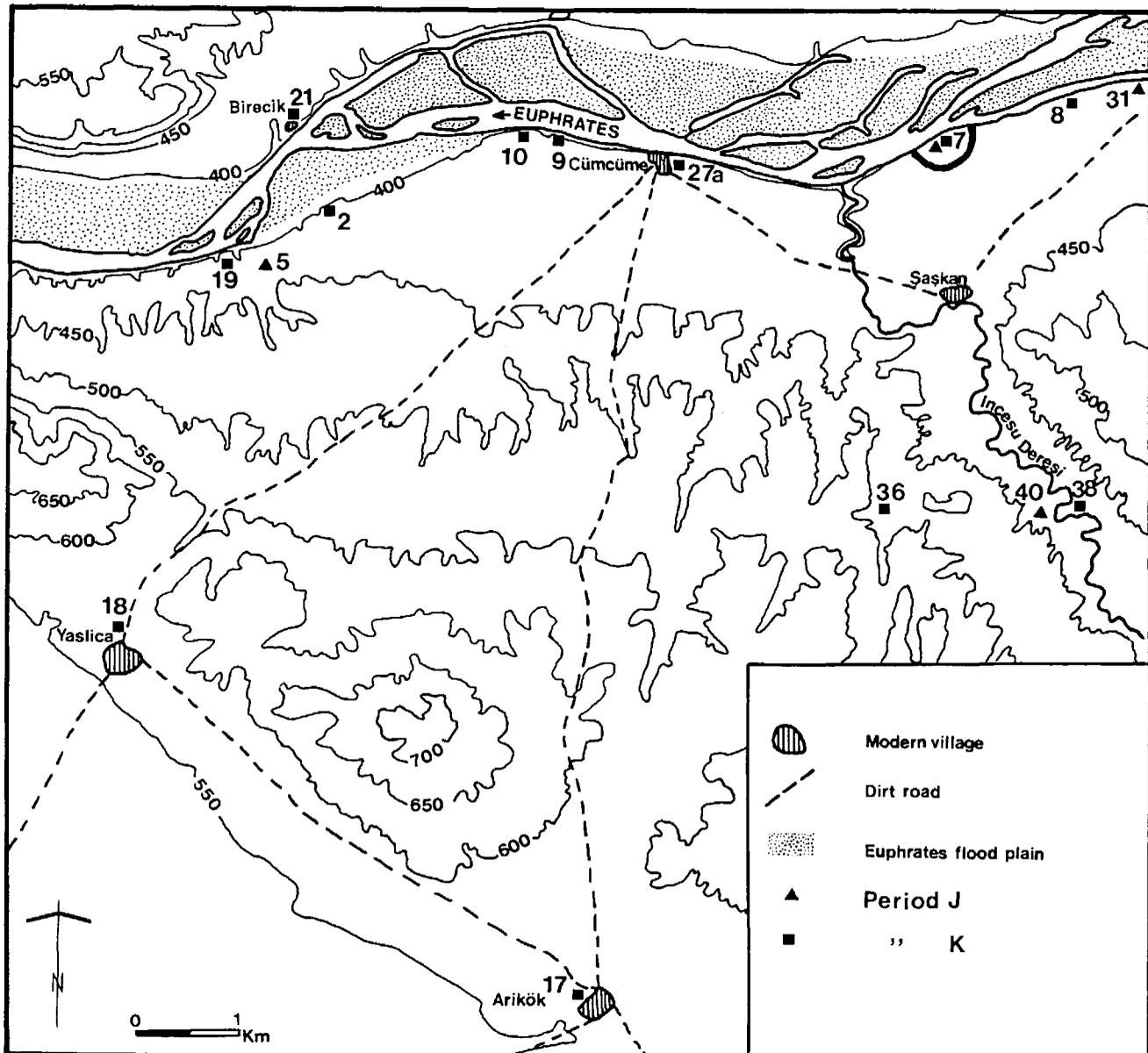


Figure 5.1. Location of Late Second-Early First Millennia B.C. and Hellenistic-Roman Sites Within the Detailed Survey Area.

Probably the best evidence of Late Bronze Age occupation came from a small mound, Site 31, situated 800 m east of Site 8 (fig. 5.1). The grit-tempered, wheel-thrown pottery, although softer and less well fired than the EB-MB Plain Simple Wares, included several forms published from Late Bronze I Tell Hadidi (ca. fifteenth century B.C., see *App. B*, fig. B.11). The presence of rather later parallels with, for example, seventh century B.C. Sultantepe (Lloyd and Gokçe 1953) and with suspected Iron Age assemblages from within

the Kurban Höyük survey area renders a purely LB attribution suspect. Therefore the published group cannot be regarded as a fully reliable Late Bronze Age collection.

Other single component sites, notably Sites 5 and 40, included a much larger component of chaff-tempered ware as well as forms such as coarse storage jars and handled vessels usually associated, within the survey area, with Seleucid-Hellenistic assemblages. Furthermore, the presence of chaff tempering at Site 5 raised the worrying specter that the site may have included Late Chalcolithic occupation. Two rims were within the range of Late Chalcolithic B forms from Kurban Höyük, but the remainder were clearly of late Iron Age type (*App. B*, figs. B.11 and 12).

In conclusion, the four single-component sites that fell within the LB-Iron Age range (Site 47, with a small range of forms is not discussed here) were so small, their artifacts so few, and parallels so elusive that the following sequence can only be viewed as very tentative: Site 31 (LB and Iron Age), Site 40 (Iron Age), and Site 5 (late Iron Age).

The settlement complex at Şaşkan Küçüktepe (Site 7) presented a wide range of wares and forms which included types ranging from the early Iron Age (starting ca. 1200 B.C.) through to the seventh century B.C. or later. In contrast to the sand-tempered, wheel-thrown LB wares of Site 31, the best early Iron Age indicator from Site 7, a range of corrugated bowls were handmade, and in some cases burnished (*App. B*, fig. B.20 nos. 4–8, and Winn 1980, pp. 155–75). These are an east Anatolian form, being well represented at, for example Korucutepe and Norşuntepe in the Keban Area (Winn 1980 and Hauptmann 1972). Özdoğan's survey within the Karakaya and Karababa dam areas showed this ware to be less common within the latter area (Karakaya, ten sites and Karababa, three sites with Özdoğan ware type 4.1). This suggests a decreasing presence away from the Keban core area, with Site 7 being situated within the outer zone.

Although continuity of occupation could not be proved, the chronological overlap of corrugated bowls with diagnostic forms including slipped and burnished platters and finger-impressed coarse storage jars (cf. forms from Tell Rifa'at in Syria) suggest that occupation continued well into the first millennium B.C. The coarse storage jars also provide a measure of continuity into Seleucid-Hellenistic times when similar vessels, some with finger-impressed decoration, were common in the area. Furthermore, rim types similar to 'Assyrian' forms from Sultantepe (Lloyd and Gokçe 1953) suggest occupation during the seventh century B.C.

The above ceramic types, together with a wide range of similar wares, although present on the high mound at Site 7 (Küçüktepe) were more common to the south, southeast, and east (*App. A*, fig. A.4: areas r, z, aa, bb, cc, and dd and adjacent areas). The horizontal extent of 4–5 ha was matched by some 3 m of occupation deposits which contained similar pottery (area dd). This occupational complex formed an extensive plateau over the entire northeast of the greater site area up to the edge of the massive ditched enclosure which surrounded the site. This correspondence of occupation and earthwork provides a hint that the ditched enclosure may have been dug during period J.

When the survey data are viewed as a chronological sequence, the hiatus that apparently succeeded the MB at Site 8 may be seen either to represent a real break in occupation or to be a result of the crucial wares being unrecognized. This hiatus which encompassed approximately the Old Hittite and Hittite Empire periods (ca. 1650–1400 and 1400–1200 B.C.) was apparently represented by individual forms from several sites in the

area, but no well-defined assemblages could be isolated. The possibility remains however that Site 31 became the focus of activity during at least part of this period, after which Site 7 became the main settlement towards the end of the second millennium. Occupation then continued at Site 7, possibly intermittently through the Hellenistic period (fig. 5.2). It is difficult to fit the Site 5 and Site 40 assemblages within this framework, but the affinities of the pottery with late Iron Age or Achaemenid assemblages from Gritille Höyük and an element of continuity with coarse wares from Hellenistic sites in the area suggest a mid-first millennium B.C. date for these sites.

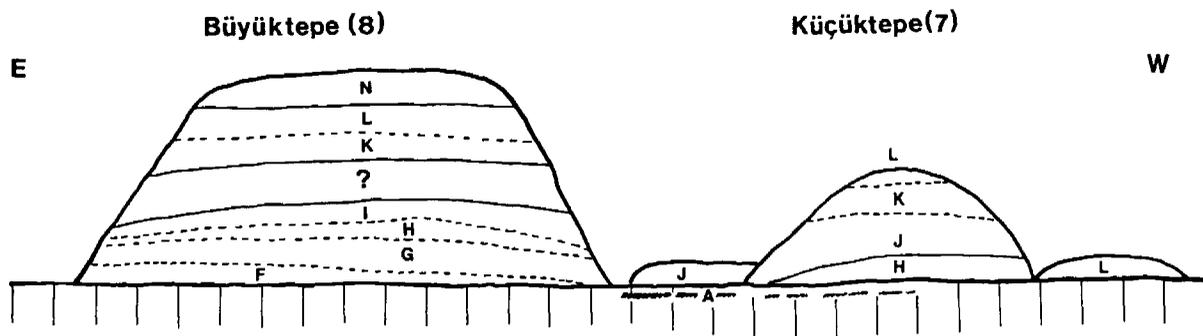


Figure 5.2. Diagrammatic Section Indicating Known Settlement Phases at Sites 7 (Şaşkan Küçüktepe) and 8 (Şaşkan Büyüktepe).

Although it is impossible to draw meaningful conclusions from such imprecise data, the paramountcy of Site 7 during at least part of the Iron Age (ca. 1200–600 B.C.) is evident. The estimated occupied area of 4–5 ha came close to the maximum size of Kurban Höyük during its nucleated mid-late EB phase. Furthermore, the extent of the total enclosed area, some 15.50 ha, was far greater than that of any site in the area apart from Samsat and perhaps Lidar.

The development of Site 7, both at the Euphrates end of the İncesu corridor and some 4 km downstream of Samsat (capital of Khummukh of the Syro-Hittite and Assyrian periods), might be a product of communications from Syro-Mesopotamia towards the Anatolian highlands and vice versa. Significantly, in the context of Julian's campaign of A.D. 363, Lloyd and Brice (1951, p. 81) have observed:

At the same time, the way northwards from Harran through Urfa to the Euphrates crossing at Samsat was a far easier approach to Malatyah [*sic*] and Asia Minor than the constricted passage of the Rum Qala' at above Birecik.

It is unclear whether Site 7 developed as a receiver settlement for goods floated down from Samsat as was suggested for the mid-late EB settlements, but the presence of the site between Samsat and the İncesu corridor is surely a product of communications. Furthermore, the occurrence of significant amounts of grooved Iron Age bowls at Site 7 suggests significant interaction with the Keban and Malatya regions. On the other hand, late Assyrian pottery at Sites 7 and 31 probably arrived during the eighth or ninth centuries B.C. when Khummukh was under the control of the Assyrian Empire. Probably at this time the area actively traded with other parts of Assyria and many of the pottery types (e.g., fig.

B.11: 6, 18, 15 and fig. B.20: 18, 19, 27, 36, and 37) closely resemble types found on sites of this period in northern Iraq.

The outlying sites of the late second-early first millennia B.C. show no meaningful patterns. Diagnostic ceramics of the period were either rare or were missed during collections from Sites 17 and 18. In spite of the sparse evidence it is clear that small settlements were present along the İncesu Deresi (Sites 40 and 47) as well as along the Euphrates (Sites 5, 7, and 31). No settlement occurred on the high terrace. Although the western end of terrace III may have been cultivated from Site 5, agricultural activity must have been sparse on this terrace for much of the second and first millennia B.C.

PERIOD K: SELEUCIDHELLENISTIC AND ROMAN-PARTHIAN (LATE
FOURTH CENTURY B.C. TO LATE THIRD CENTURY A.D.)

This broad time span of around 600 years corresponds to an era of well-documented fluctuating frontiers commencing with the Seleucid dynasty and continuing with the frontier conflicts of Rome and Parthia. The archaeological evidence, which will be outlined first, is too coarse and insensitive to document minutia of invasion and response, and instead it will be used to sketch broad trends in the development of settlement patterns. Because of the relatively sparse scatters of surface pottery, the use of rare chronological indicators was not reliable and instead relatively common, but time-specific, indicators were used to define the following phases:

Phase 1: Late fourth-early third to late second centuries B.C. corresponding to the use of Hellenistic fine wares, best typified by incurved rim bowls and a range of 'fish plates' (*App. B*, Site 19 and fig. B.14; Hannestad 1983, p. 16 and pp. 28–32). In addition, a number of other Hellenistic indicators, ranging from Hellenistic black and brown gloss wares to coarse storage jars, were frequently present, but they were less common than incurved rim bowls and they were of limited value for site-to-site correlation.

Phase 2: Approximately late second century B.C. to late second century A.D. Glossy red slipped Eastern Sigillata wares came into use shortly after the late second century B.C. (Kenrick 1981, p. 443) and provided a conspicuous and moderately common chronological indicator until probably the second century A.D. Although rare in the Keban area (Mitchell 1980) and at Tille (French 1982), most sites within the survey area which produced a range of Hellenistic-Roman fine wares also produced a few examples of Eastern Sigillata. It was however impossible to determine either the inception or the demise of this ware within the local sequence.

By the use of specific early third century A.D. forms of brittle cooking pot ware known from Severan contexts at 'Ain Sinu, Iraq (Oates 1968, fig. 23) it was possible to pinpoint areas of Severan occupation. Because of their scarcity (only three from Site 8 and two from Site 2) the absence of such indicators could not be used to prove that Severan occupation was absent. Nevertheless, they provided a useful indication of sites that were occupied shortly after Osrhoene was incorporated as a Roman province (A.D. 195–97). As well as the above-mentioned ware types, numerous Hellenistic coarse storage jars, fine wares, brittle red cooking pot wares, jugs, and amphorae were collected and are published as assemblages for the relevant sites in *Appendix B*.

Following the ill-defined early and mid-first millennium assemblages, the Hellenistic forms of period K phase 1 provided a firm datum for the Seleucid period. All the period K

sites shown on figure 5.1 were inhabited at this time. Of these, Site 27A on the eastern fringes of Cümçüme village showed the best evidence of a transition from the mid-first millennium ceramic types (*App. B* and fig. B.13) with a variety of ware types overlapping with those of Sites 5 and 40. Substantial settlements were located at Sites 7 and probably 17 and 18. Of these, the first named, which yielded 33 rims of incurved rim bowls was pre-eminent within the survey area. This continued the strong early first millennium presence at the site which implies that communication links along the İncesu corridor and to Samsat remained strong. In spite of their abundance, however, the Hellenistic wares were limited to the high mound of Şaşkan Küçüktepe and the immediate area, which implies a decline in occupied area to one ha or a little more.

Site 19, located on the high terrace bluffs almost opposite Birecik Höyük (Site 21) may have been settled shortly after the abandonment of its first millennium neighbor, Site 5. Site 19, although eminently defensible, had restricted access to cultivable land which must either have been located on the dissected terrace surface to the south or along the flood plain fringes beneath the site.

The dispersed settlement patterns of Seleucid times consisted of numerous small settlements dotted between 1 and 2.50 km apart along the Euphrates bluffs. Only a single site (Site 38) was located within the İncesu valley. An additional small site (Site 36) situated within uncultivable badlands along tributary valleys of the İncesu Deresi may have been a way station along a route or perhaps functioned as a pastoral settlement.

During settlement Phase 2, with the exception possibly of Sites 10, 27A, and 36, the same sites were occupied. The general scarcity of Eastern Sigillata within the region is echoed by the small number of these wares collected from sites in the survey area. Hence, although, for example, Site 38 was without Eastern Sigillata, the presence of brittle wares, which start around the second century A.D., and other Roman wares, suggest continuity into the first centuries A.D.

During Phase 2 settlement and cultivation remained firmly on terrace III or at equivalent elevations along the İncesu Deresi and within the inland basins of Yaslica-Arikök. The total occupied area was less clear than in the preceding phase partly because of the problem of differentiating mainstream Roman period pottery from late Roman pottery.

Despite the problems of ceramic differentiation, at Site 8 (*App. A*, fig. A.5) among a wide range of other ceramics of Roman type were at least two early third century brittle ware forms (*App. B*, fig. B.25, nos. 11 and 17, from areas j and m). Therefore in contrast to the earlier concentration of Hellenistic and first and second century wares around the main mound, by the third century settlement may have expanded over the entire lower town.

A similar argument may be appropriate for Site 7, although the specific Severan indicators were lacking. The development of lower sites at both Şaşkan mounds although difficult to document in detail may be summarized as follows. During the Seleucid period, occupation was restricted to the two mounds of Küçüktepe and Büyüktepe and their immediate vicinity. There followed, probably during the first or second century A.D., a gradual development of the lower sites and by the early third century A.D. most of the lower settlement at Site 8 was occupied. It is not clear whether the lower part of Site 7 was inhabited by the third century A.D., but it had attained its maximum extent by the late Roman period. The only other site to produce 'Ain Sinu third century wares was Site 2

which probably had continuous occupation from the Seleucid period to the late Roman period.

Except for a single brittle red ware handle from Site 19, Sites 9, 10, and 19 were bereft of this common post-second century ware and it seems that by the third century, if not earlier, these sites had been abandoned.

Because of complexities of settlement flux and site definition during the early centuries A.D., aggregate settlement area has only been assessed for the clearly defined Phase 1. At this time, the entire area of terrace III, much of the İncesu Deresi valley, and enclaves around Sites 17 and 18 were probably under cultivation. Approximate calculations based upon aggregate site area within the Kurban Höyük sector of terrace III indicate that even with the inclusion of Site 19, the population of about 175–250 people could have been sustained with a generous fallow interval of the land on terrace III alone (tab. 6.2).

During the following 400–500 years, with the abandonment of Sites 9, 10, 19, and possibly 27A, counteracted by the growth of Site 2, some localized land use intensification may have occurred. Certainly on the Şaşkan sector of the terrace the growth of Site 8 by the third century with the progressive expansion of Site 7 would also have entailed an increase in agricultural intensification. In spite of such localized changes, the population was never high enough to justify colonization of the high terrace. Neither was there evidence of Hellenistic-Roman fine wares within the field scatters over the terrace lands, which argues against the use of settlement-derived manuring at this time. With the exception of the anomalous Site 36 within the badlands, all period K settlements were within catchments which supplied sufficient cultivable land to sustain the settlements within them.

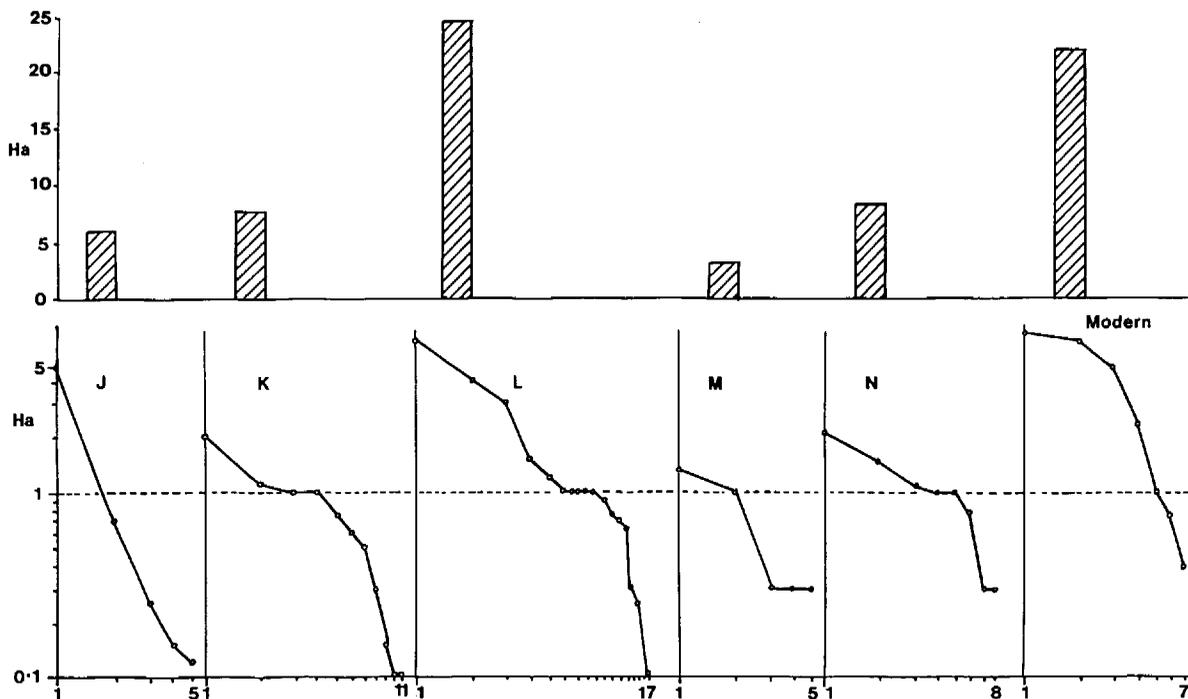


Figure 5.3. Rank-Size Graphs and Aggregate Site Area Histograms for Settlement Periods J–N and the Modern Period.

The settlement patterns of the Seleucid period provided a conspicuous contrast with what is known of that of the Iron Age. Site 7 apparently decreased in area during the mid or late first millennium and settlement was re-established at Site 8. In addition a number of small sites were established. This again implies a trend from a centralized nucleated settlement to a dispersed pattern which then prevailed during the late first millennium B.C. into the first millennium A.D. (fig. 5.3). Because of the imprecise data on Iron Age settlement it is difficult to estimate population change, yet the numerous but small Seleucid settlements appeared to contain a slightly increased population.

PERIOD L: LATE ROMAN-EARLY BYZANTINE

(LATE THIRD TO EARLY SEVENTH CENTURIES A.D.)

During a span of approximately 300 years extending from the reign of Diocletian, settlement apparently attained a peak, both in the number of sites and aggregate site area. The sites of this period were dated by a distinctive pottery assemblage which overlapped in many details with late Roman-early Byzantine pottery (fourth-sixth centuries A.D.) from Dibsi Faraj on the Syrian Euphrates and with surface collections from various northern Syrian sites (Harper 1980 and Northedge 1981). The most accurate ceramic indicator was Late Roman C fine ware, specific forms of which indicated occupation during the sixth century A.D. (*App. B*, Site 14; fig. B.15). Although most datable ceramics collected from the single component sites appeared to fall within a fourth to sixth centuries range, there was at some sites a trailing off into both early Roman wares and late Islamic types. The former was evident at multiperiod Sites 2, 7, 8, and 38, which suggests that Parthian-Roman settlement probably continued uninterrupted through into the fourth-sixth centuries. The second case of occupation continuing into early Islamic times was only documented at two sites: Site 14 and Site 6. At the former, early Islamic brittle ware forms indicate that a small settlement was also present during the eighth century, although continuity cannot be proved. By the time the distinctive range of early Islamic glazed and fine wares came into use around the ninth century A.D., occupation appears to have ceased. In contrast, at Site 6, a small late Roman-early Byzantine community expanded during early Islamic times.

In most cases, late Roman settlements grew out of preceding Seleucid-Parthian-Roman foundations, but after the seventh century only two out of seventeen sites remained occupied. Site 2 may also have continued to be inhabited, but the pottery evidence is equivocal.

The settlement pattern of the period could be broken down into five main site classes (fig. 5.4):

- a. Multiperiod nodal settlements (Sites 2, 27, 7, 8, and 32²) between 3 and 6.50 ha in size and 1.30–3.50 km apart. To the south the multiperiod Sites 17 and 18 were also occupied, but their total inhabited areas could only be estimated. Near Site 2 a small upper settlement, Site 3, was situated on terrace II.
 - b. Smaller settlements situated on the high terrace (I) where springs issued from dry valley bottoms below. The sites: 12, 14, and 37, ranged from 0.90 to 1.50 ha in size and were 1–1.80 km apart, depending upon topography and spring locations.
2. This single phase site is not included within the analysis of aggregate site area because it lay just beyond the detailed survey area.

- c. Sites 6 and 38 along the İncesu Deresi. Both sites, with surface areas of 0.60 and 1 ha respectively, were located within areas that had also formed early Bronze Age settlement nuclei.
- d. Very small sites comprising merely a scatter of limestone foundation stones, roof tiles, and very little pottery. At Site 34 a scatter of tesserae suggested the possible presence of a small church, but corroborative evidence was lacking. Both Sites 30 and 34 were probably only single buildings, therefore they added very little to the aggregate site area.
- e. A single small site (26) within the limestone uplands. It consisted of terrace walls and a circular stone pound (*App. A*, fig. A.13) and appears to have been a pastoral settlement within an area of upland grazing (fig. 5.4).

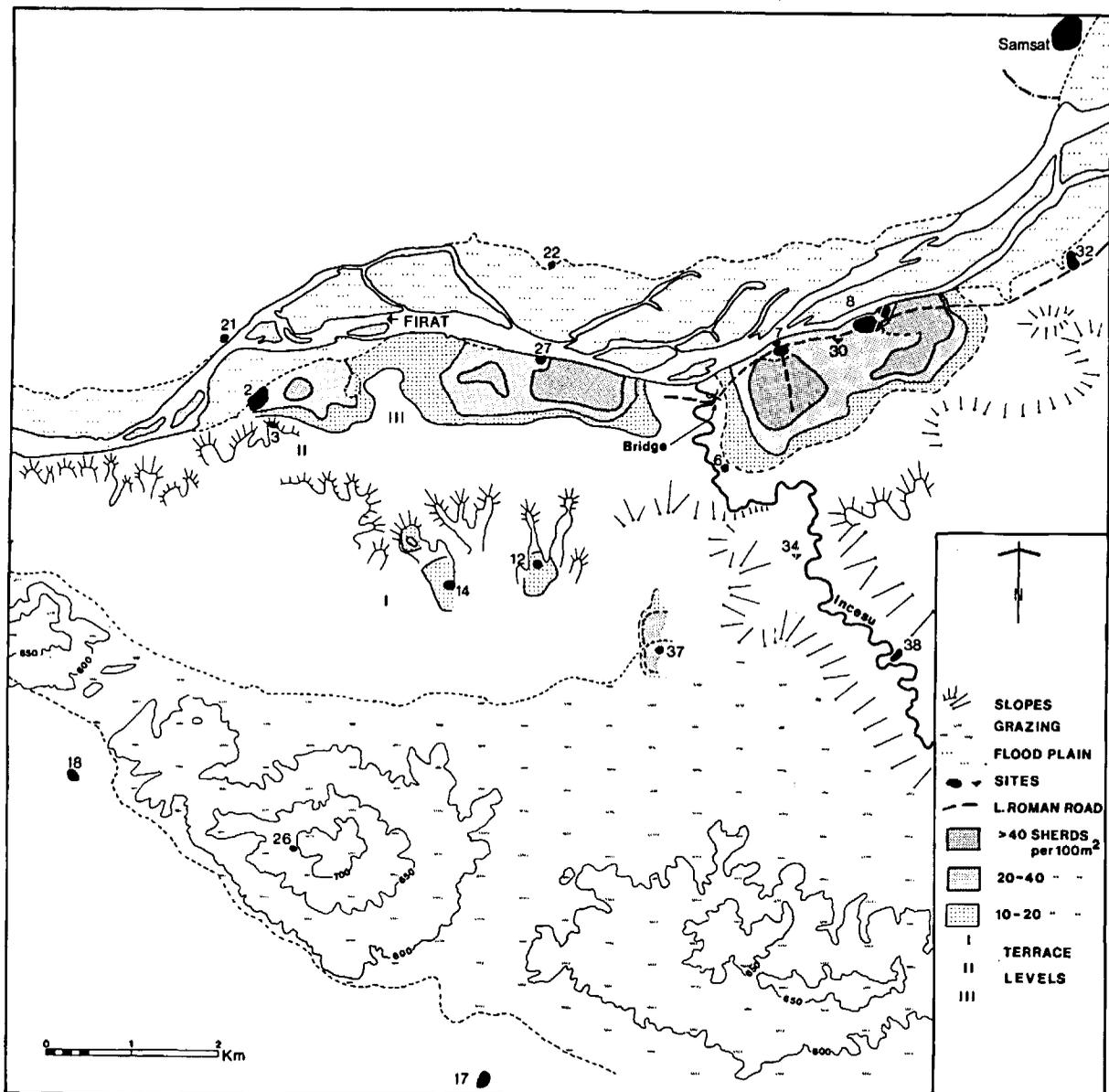


Figure 5.4. Late Roman-Early Byzantine Settlement and Land Use.

In addition to the above, two sites, Sites 21 and 22, on the north bank of the Euphrates were also occupied during period L.

Site artifact scatters included, in addition to pottery, abundant scatters of roof tiles (e.g., *App. A*, fig. B.16, no. 8). The presence of tile wasters at Site 2, indicates that some at least were of local manufacture. Scatters of plain, square limestone tesserae recorded at Sites 8 and 34 imply the presence of well-appointed buildings: either churches, administrative buildings or opulent domestic structures.

Sites 27B and 32, overlooking the Euphrates, were linked by a small modern dirt track which formed the major dividing line between two contrasting types of recent field systems: strip fields to the south and block-like fields to the north. Where the track crossed tributary valleys of the Euphrates, deep cuttings or 'hollow ways' had been etched by the long-continued traction of animals and periodic runoff concentrations. Although it might be of greater antiquity, the route of this road through the main late Roman-early Byzantine settlements suggests that it was in use at this time. The track cut the İncesu valley by means of a deep hollow way and the presence of a single stone pier within the channel at this point indicates the former presence of a simple bridge (figs. 5.4 and 5.5).

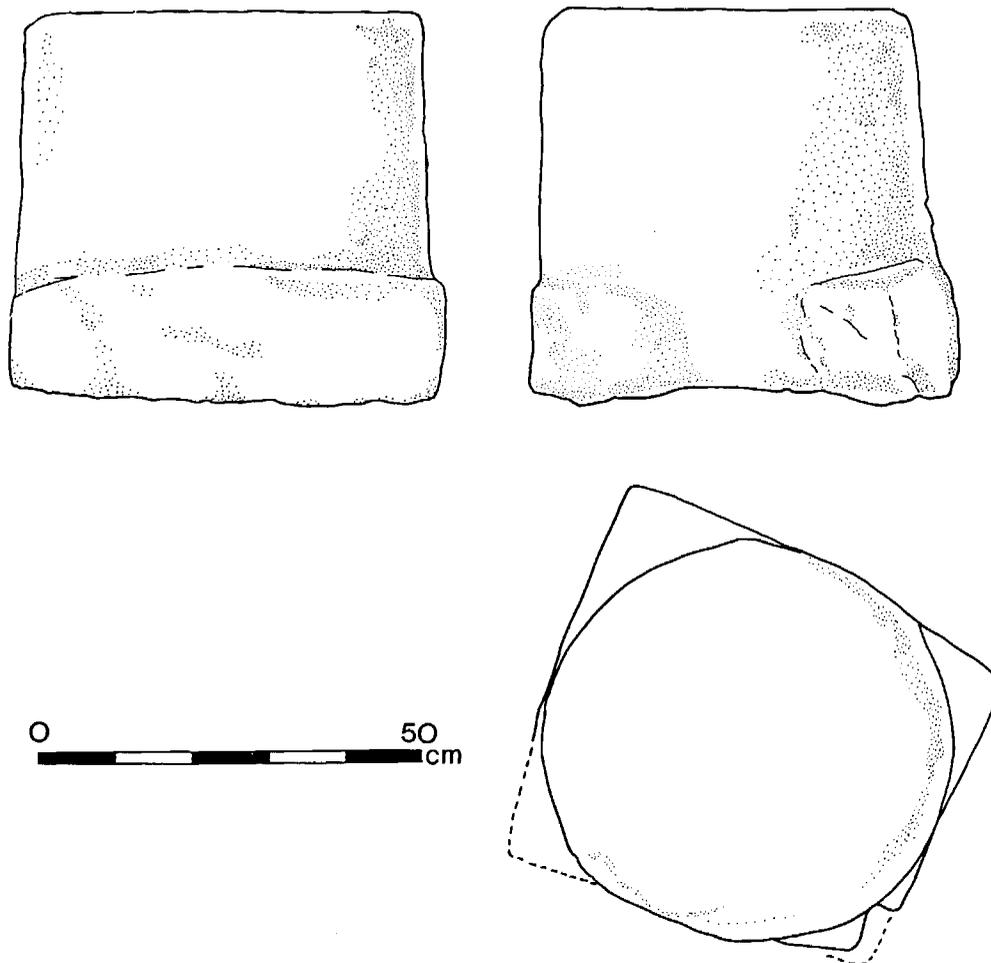


Figure 5.5. Possible Roman-Early Byzantine Bridge Pier from the İncesu Deresi.

The archaeological record was complicated by the existence of an extensive scatter of artifacts that spread over most of terrace III and formed small 'haloes' around the sites of terrace I (figs. 5.4 and 5.6). These 'field scatters' as described in chapter 3 were mapped by means of an extensive grid of sample squares around Sites 2, 3, 27B, 6, 7, 8, 12, 14, and 37. Scatters were also present, but were not mapped, to the east of Site 32 and to the north

Table 5.1. Site Areas and Aggregate Site Areas Tabulated According to Period, for Periods J–N.

<i>Period</i>	<i>Site</i>	<i>Area in Hectares</i>	<i>Find Reference</i>
J (Late Second-Early First Millennium B.C.)			
	5	0.70 (measured)	figure B.12 (see <i>Appendix B</i>)
	7	4.70 (estimated)	figure B.20–21
	31	0.12 (measured)	figure B.11
	40	0.25 (measured)	figure B.11
	47	0.15 (measured)	figure B.12
Total area = 5.92 ha (range = 3.30–6.10 ha)			
Settlement area per 100 km ² = 6.23 ha			
Number of settlements per 100 km ² = 5			
K (Hellenistic-Roman)			
	2	0.50 (estimated)	figure B.19
	7	1.00 (estimated)	figure B.21–22
	8	1.10 (estimated)	figure B.25
	9	0.10 (measured)	figure B.14
	10	0.15 (measured)	figure B.14
	17	2.00 (estimated)	table B.2 (see <i>Appendix B</i>)
	18	0.30 (estimated)	table B.3
	19	0.76 (measured)	figure B.14
	27A	1.00 (measured)	figure B.13
	36	0.05 (measured)	figure B.14
	38	0.60 (measured)	table B.5
	21	—	possibly occupied
Total area = 7.56 ha (range = 6.45–8.75 ha)			
Settlement area per 100 km ² = 8 ha			
Number of settlements per 100 km ² = 11			
L (Late Roman-Early Byzantine)			
	2	4.00 (measured)	figure B.19
	3	0.70 (measured)	figure B.16
	6	1.00 (estimated)	figure B.17
	7	3.00 (measured)	figure B.22
	8	6.50 (measured)	figure B.25
	12	1.20 (measured)	figure B.15
	14	0.90 (measured)	figure B.15
	17	1.00 (estimated)	table B.2
	18	0.30 (estimated)	table B.3
	21	1.00 (estimated)	table B.4
	22	1.00 (estimated)	table B.4
	26	0.25 (measured)	figure B.16
	27B	0.75 (estimated)	table B.4
	30	0.03 (measured)	—

Table 5.1. Site Areas and Aggregate Site Areas Tabulated According to Period, for Periods J–N (*cont.*).

<i>Period</i>	<i>Site</i>	<i>Area in Hectares</i>	<i>Findings Reference</i>
L (Late Roman-Early Byzantine) (<i>cont.</i>)			
	34	0.10 (measured)	—
	37	1.50 (measured)	figure B.16
	38	0.63 (measured)	table B.5
Total area = 23.90 ha (range = 20.40–27.60 ha)			
Settlement area per 100 km ² = 25 ha			
Number of settlements per 100 km ² = 15			
M (Early Islamic)			
	KH	0.30 (measured)	KH II,* pls. 137–43, 149, 150, 160, and 161
	6	1.30 (measured)	figure B.17
	14	0.30 (estimated)	figure B.15
	17	1.00 (estimated)	table B.2 (minor occupation)
	18	0.30 (estimated)	figure B.27
Total area 3.20 ha (range = 2.70–3.70 ha)			
Settlement area per 100 km ² = 3.40 ha			
Number of settlements per 100 km ² = 5			
N (Medieval—Twelfth and Thirteenth Centuries)			
	8	2.10 (measured)	figure B.25
	17	1.00 (estimated)	table B.2
	18	0.30 (estimated)	table B.3
	21	1.10 (estimated)	table B.4
	22	1.00 (estimated)	table B.4
	23	1.45 (measured)	figure B.18
	27B	0.75 (estimated)	table B.4
	35	0.30 (measured)	figure B.18
Total area = 8 ha (range = 6.80–9.20 ha)			
Settlement area per 100 km ² = 8.50 ha			
Number of settlements per 100 km ² = 8			

*KH II = *Town and Country in Southeastern Anatolia, Volume II: The Stratigraphic Sequence at Kurban Höyük*

of Site 38. Artifact densities were highest—greater than 40 sherds per 100 m² (i.e., per 10 x 10 m sample square)—near the sites and decreased progressively away from them as was described in chapter 3 (fig. 3.2). The pottery was mainly of late Roman-Byzantine type (*App. B*, tab. B.3 and fig. B.28), but to the east of both Kurban Höyük and Site 8 there was an admixture of Early Bronze Age sherds. Although at the former site this presence probably had little effect on total sherd counts, the presence around Site 8 of a higher proportion of EB-MB diagnostic sherds suggests that up to 50 percent of the total number of sherds collected were of this earlier date. The true period L field scatter around Site 8 may therefore be less dense than indicated on figure 5.4, but the boundaries of the scatter (taken as 10 sherds per 100 m²) which are mainly beyond the concentration of EB sherds, are unlikely to differ significantly from those indicated.

Table 5.2. Areas of Field Scatters (Period L) and Their Calculated Carrying Capacities.

Site	Area (ha)	40+ ¹	20-40	10-20	<10 ²	Total ³	Radius ⁴	C.C. ⁵
2	4.70 ⁶	6.25	43.75	37.25	39.75	87.25	0.53 km	175
27	0.75	53.25	78.75	104.50	98.75	236.50	0.87 km	473
7	4.00 ⁷	60.25	65.50	53.50	59.25	179.25	0.76 km	358
8	6.50	46.50	66.00	39.50	72.75	152.00	0.70 km	304
14	0.90	—	1.00	20.50	12.00	21.50	0.26 km	43
12	1.20	—	—	12.75	12.30	12.75	0.20 km	26
37	1.50	—	12.75	8.50	ca. 12.00	21.25	0.26 km	43
19.55 (1564–2346 persons, assuming 80–120 persons per km ²)								1422 ⁸ or 1728 ⁹

¹Potsherds per 100 m².

²Estimated area of low density scatter around ten sherd isopleth. This figure is not included in the total column or in the final total; it is included in total carrying capacity.

³This column does not include areas of scatter <10 per 100 m².

⁴Assuming total area to ten sherd isopleth was contained within a circular catchment.

⁵Carrying capacity: assuming cereal yield of 600 kg/ha; 100 kg reserved for seed and annual requirement of wheat equivalent of 250–300 kg of cereals.

⁶Aggregate of site 2 and site 3.

⁷Aggregate of site 6 and 7.

⁸Total carrying capacity of land within the 10 sherds per 100 m² isopleth.

⁹Total carrying capacity including land beyond the 10 sherds per 100 m² isopleth.

As suggested in chapter 3, this scatter probably resulted from the use of settlement-derived manure, 'night soils,' and organic refuse applied as a compost or fertilizer to the fields. The configurations of higher artifact densities near the sites locally results from the conservation of effort which caused farmers to expend more effort on maintaining soil fertility, like other labor-intensive tasks, close to the site rather than on distant fields (Chisholm 1979, pp. 41–42). Scatters of moderate density (greater than 10 sherds per 100 m²) extended 1.20–1.70 km (E-W) and 0.50–0.80 km (N-S) away from Sites 2 and 27B and 0.80–1.60 km away from Sites 7 and 8. The smaller settlements on terrace I were

surrounded by less dense scatters of diminished radius (0.25–0.70 km, fig. 5.6). Field scatter areas, as indicated on table 5.2, were therefore larger (87.25–236.5 ha) around the main Euphrates-edge settlements of terrace III than around the smaller settlements on terrace I (13–21 ha). Also indicated on table 5.2 are scatter radii assuming that the total scatter areas formed a circular configuration around the sites. This idealized scatter radius, to the 10 sherd limit, ranged from 0.53 to 0.87 km for the terrace III settlements compared to 0.20–0.26 km for terrace I sites. Beyond the arbitrary ten sherd isopleth, a very sparse scatter of 1–10 sherds per 100 m² veneered the remainder of terrace III loam soils, terrace II, and at least 40 ha of terrace I around Sites 12, 14, and 37. It is perhaps significant that vitrified tile or ceramic fragments only came from the terrace III scatters (from 14 sample squares). Their presence may indicate the use of ash from kilns within the larger settlements as fertilizers along with other types of debris.

Comparable field scatters have been mapped around sites in Syria (Tell es-Sweyhat, EB), Iran and Oman (Siraf and Sohar, both early Islamic, Wilkinson 1982) as well as around Roman period sites in Britain (Williamson 1984; Hayes, personal communication) and in all cases they have been interpreted as resulting from manuring. For example, the Iranian scatters occurred on formerly irrigated and walled fields whereas those in Oman were over many square kilometers of terrain formerly irrigated by wells and water channels (Wilkinson 1974 and 1975). The Syrian example, like those in the vicinity of Kurban Höyük, was probably part of a dry farming system of wheat-barley-lentil cultivation on the Euphrates terraces. If the manuring explanation is accepted, the scatters may best be interpreted as resulting from an attempt by the population to maintain soil fertility during a period when annual cropping was necessary. Although the actual limits of annual cropping cannot be determined for the area in question, I have arbitrarily chosen the ten sherd isopleth. Within this zone, additional inputs of manure probably resulted in higher crop yields within an annual cropping regime. The areas of lowest sherd scatter density (1–10 sherds per 100 m²) also are given on table 5.2. These were almost certainly cultivated during period L and must have received some manure, but probably not sufficient to allow annual cropping. Therefore, in the carrying capacity calculations a cropping regime of one year cultivation followed by one year fallow has been assumed for these lands.

Carrying capacities calculated from an assumed wheat yield of 500 kg/ha and with an annual consumption of 250 kg per person per year wheat equivalent are given for both annually and biannually cropped land on table 5.2. The total carrying capacity of 1728 compares with a total site area of 19.55 ha which, if a site population density range of 80–120 persons per ha is assumed, might contain a total population of 1,564–2,346 people. If higher yields of 1,000 and 750 kg/ha are allocated for the more heavily manured lands (greater than 40 and 20–40 sherds respectively), total carrying capacities increase to 2,328, still within the population range of the settlements (table 5.3). Uncertainties regarding site population densities and areas make the population figures very approximate. For example, field evidence suggests that the sites on terrace I may have been rather less densely populated than those on terrace III. On the other hand, the estimated area of Site 27B is probably too small because part of the site probably lay beneath the modern village and therefore has been excluded from the calculations. Nevertheless, within the range indicated, the system of settlement and land use appears to have come close to a state of equilibrium with no evidence for surplus production. Even if cultivation had extended

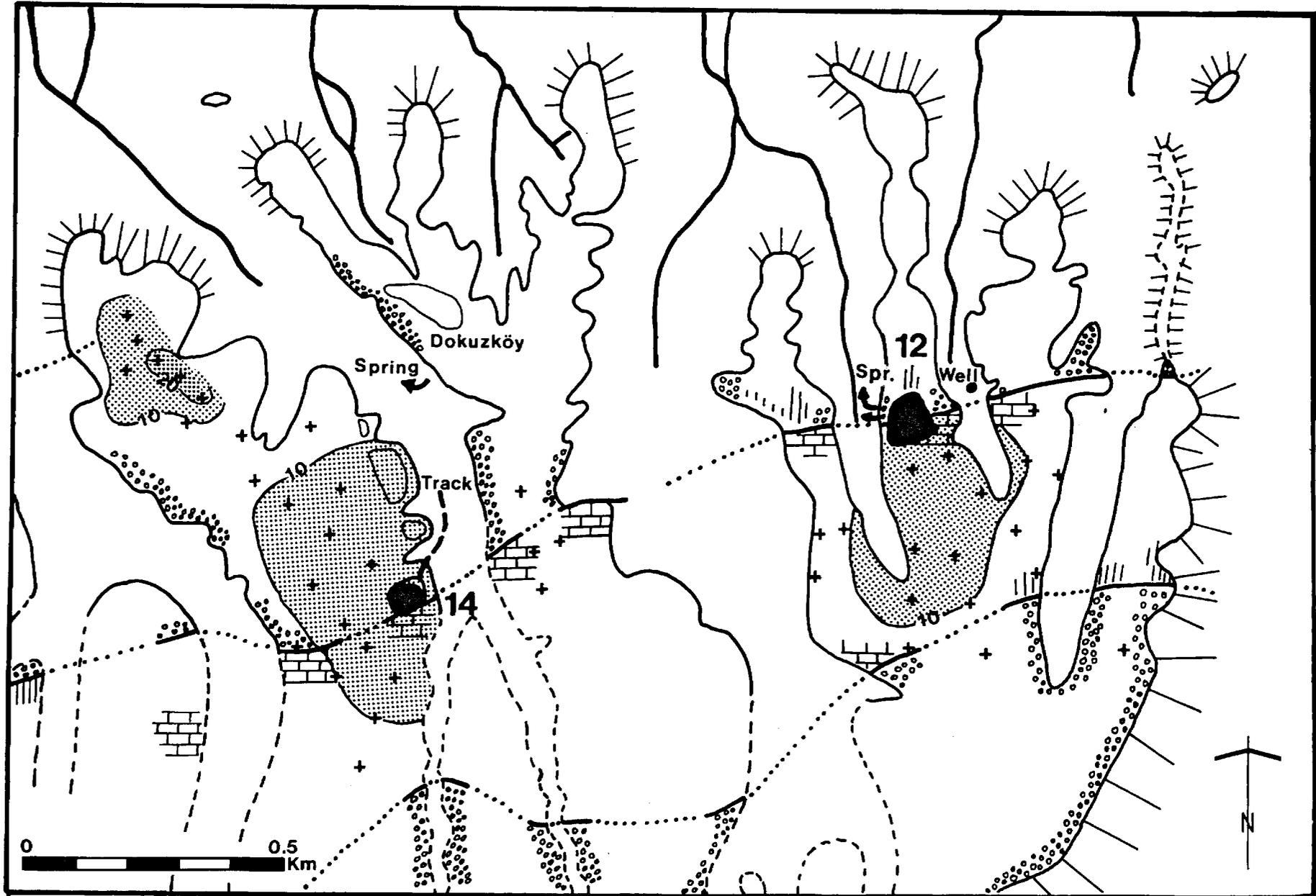


Figure 5.6. Detail of Sherd Scatters Surrounding Sites 12 and 14 (Period L) on Terrace I.

across the rest of terrace I (some 200–250 ha), an alternating fallow-cultivation system would only have been capable of supporting some 200–250 additional people.

If, instead of the above model of intensive cultivation, a one year fallow-one year cultivation system is assumed to have operated across the entire cropped area, the carrying capacity would fall to as little as 1,017 people. In other words the food production would be too low to support the calculated village population.

Table 5.3. Carrying Capacities Calculated from Field Scatters Assuming that Manuring Resulted in Raised Cereal Yields of 1000 kg/ha and 750 kg/ha on the Lands of Denser Field Scatters.

Site	40+ ¹	20–40 ²	10–20 ³	10	C.C. ⁴
2	25	131	75	40	271
27	213	236	209	99	757
7	241	197	107	59	604
8	186	198	79	73	536
14	—	3	41	12	56
12	—	—	25	12	37
37	—	38	17	12	67
Total carrying capacity					2328

¹ Assuming yield of 1000 kg/ha and therefore C.C. of four persons per ha.

² Assuming yield of 750 kg/ha and therefore C.C. of three persons per ha.

³ Assuming yield of 500 kg/ha cropped annually and therefore a C.C. of two persons per ha.

⁴ Assuming yield of 500 kg/ha cropped once every two years, and therefore C.C. of one person per ha.

In conclusion, the prevalence of an annual cropping system, possibly with increased crop yields within the most heavily manured zone, is most compatible with the total settlement area. Only if a radically different cropping system were employed, including, for example, high-yield vegetables within the manured zone, would it be possible to generate a significant surplus for export. Because of the preference, both today and during the EB, for a wheat-barley-lentil-grape economy, the former more conservative cropping system employing manured dry farmed cereals and lentils is favored.

Field scatters also allowed the limits of former village territories to be inferred. For example, low scatter densities between Sites 2 and 27 and between 27 and 7 (i.e., along the İncesu Deresi) may represent the limit to which manure was distributed from the adjacent villages. Unless manure was being carried from one village for use on the fields of the adjacent village, this 'trough' can be interpreted as indicating the approximate territorial limit of the settlement.

In a related context, Site 6, which yielded evidence for only a minor late Roman-early Byzantine settlement, developed on the edge of the sherd scatter emanating from Site 7. This implies that the early Islamic settlement that subsequently developed at Site 6 grew up on the edge of the main field area of the early Byzantine Site 7.

On terrace I, field scatters were limited to the reddish-brown loams. Beyond this boundary, on the limestone uplands the land was probably under rough grazing (fig. 5.4).

Within this upland area a circular stone structure at Site 26 may have been used as a temporary pound for sheep and goats. Furthermore, linear scatters of stone which form traces of walls (on north-facing slopes to the northwest of Site 26) also may have been related to former pastoral activity. If these walls are interpreted as pastoral boundaries (they do not appear to have enclosed fields) their presence would imply a large element of control within the pastoral system. Although such linear boundaries were not dated, Site 26 was securely dated by surface pottery to period L. It follows that at this time of maximum growth of field systems available pasture land would have been limited to the flood plains and limestone uplands for most of the year. Only shortly after harvest would additional lands in the form of cereal stubble be available for grazing.

In conclusion, between the fourth and sixth centuries A.D. settlement must have extended to such a degree that all available settlement niches were occupied. The high terrace was settled wherever springs would provide sufficient water to sustain permanent habitation. Furthermore, cultivation systems were intensified sufficiently, probably to allow annual cropping. Grapes were probably grown on the gravel fans and lower hill slopes. The result of the significant increase in land use intensity over the entire area must have further accelerated erosion on hill slopes and along valleys.

The growth of settlements during the early first millennium A.D. was accompanied at some sites by a movement off the high mounds on to extensive lower settlements. This was especially marked at Sites 7 and 8. If this had also been the case at Sites 17 and 18, it is possible that the estimated occupation areas given on table 5.1 are too small.

At Samsat, although the main mound produced early Byzantine occupation layers (Goell 1976), the bulk of the population may have been accommodated within the 50 ha lower city. One of the most extensive sites recorded during the 1977 Lower Euphrates Survey Develik Mevkii and neighboring Incirli-tepe (Özdoğan 1977, Sites T51/43 and 42) produced large numbers of late Roman-early Byzantine wares. In view of the complex configurations provided by field scatters and occupation sites during this period, it is conceivable that the above complex may be resolved into a smaller habitation site surrounded by an extensive field scatter covering some 15–30 ha. Alternatively, it might have comprised a single but very large settlement. Although visited during the survey season, it proved impossible in the time available to resolve this problem. Whichever interpretation is correct, however, it is evident that on the left bank of the Euphrates, a little north of Samsat, there existed evidence either for a substantial settlement or for an increase in land use intensity comparable to that recorded in the Kurban Höyük area.

A similar peak in settlement also has been noted along the right (northern) bank of the Euphrates within the area of Gritille Höyük. The survey of the Gritille excavation team found, in addition to locating a large number of late Roman-early Byzantine settlements, part of a Byzantine altar screen and also extensive field scatters comparable to those recorded within the Kurban Höyük area (G. Stein, personal communication).

PERIOD M: EARLY ISLAMIC (SEVENTH TO TENTH CENTURIES A.D.)

Following the massive expansion of settlement and agriculture during the fourth to sixth centuries, there was a rapid drop in the evidence of settlement, if not a hiatus (fig. 5.7). This corresponded to the seventh century and possibly part of the eighth century. No

definite Umayyid pottery was noted, but several brittle-cooking pot ware forms from Sites 6 and 14 were probably of early Abbasid date (late eighth century; A. Northedge, personal communication; *App. B*, fig. B.17, nos. 27–29). More conspicuous were Abbasid polychrome glazed bowls and thin walled ‘eggshell’ wares comparable to types from the Samarran assemblage (ninth century A.D.). Both types were found at Kurban Höyük and an

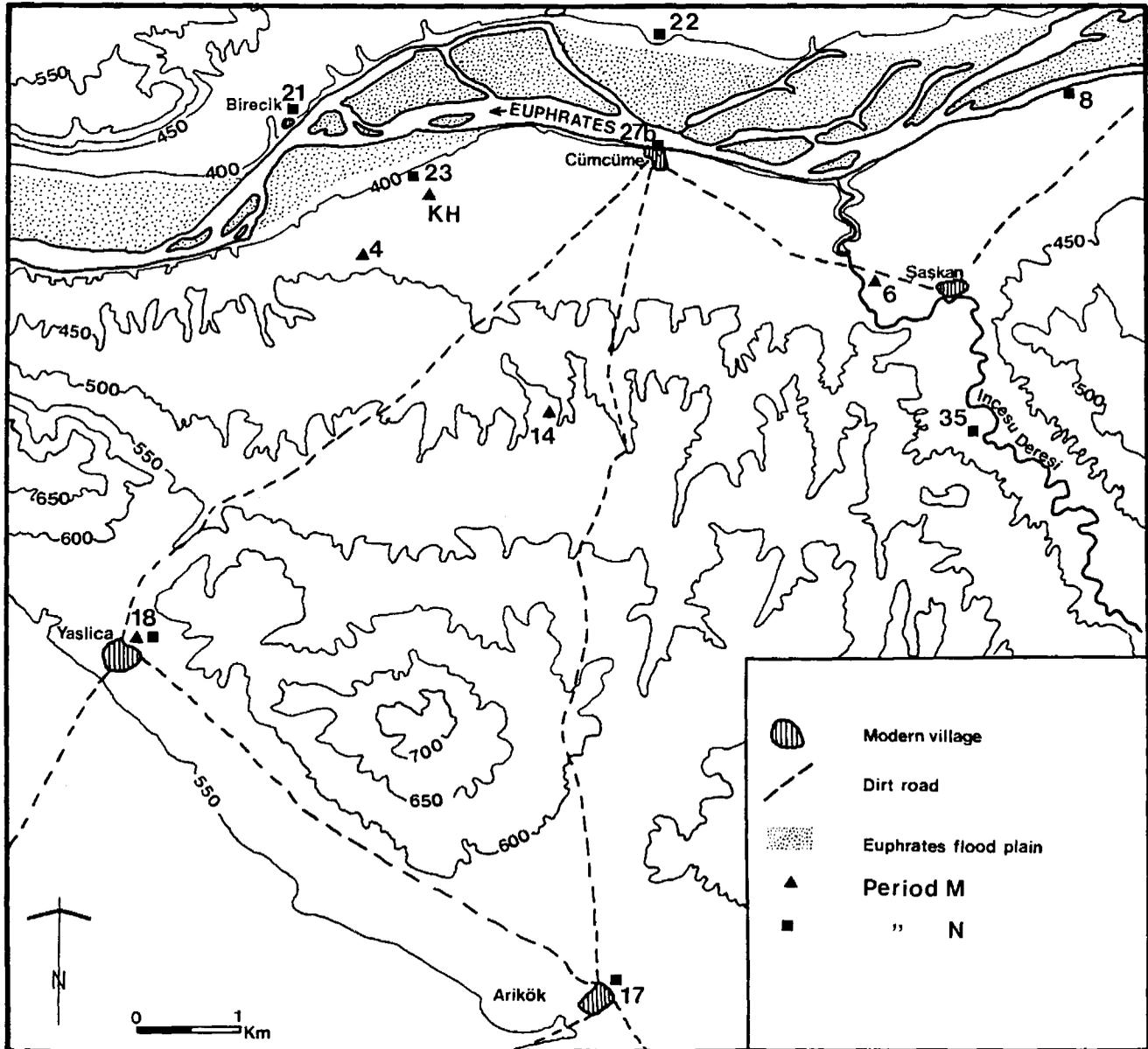


Figure 5.7. Location of Early Islamic and Medieval Sites Within the Detailed Survey Area.

incised glazed ware from both Kurban Höyük and Site 6 (*App. B*, fig. B.17, no. 5 from Site 6) may indicate that occupation continued into the tenth century. A tenth century occupation is also supported at Kurban Höyük by the presence of Sgraffiato wares (Algaze in Marfoe et al. 1986).

The ninth century polychrome glazed wares were highly visible and were unlikely to be missed during site survey. Consequently, the decline in settlement since the sixth century can be gauged with some accuracy. The only sites to produce ninth-tenth centuries fine

wares were Kurban Höyük, Site 6, and Site 18, and in each case sherds were sufficiently abundant to indicate significant occupation.

Site 6 was inhabited first during the late Roman-early Byzantine period. No seventh century ceramics were noted, but because of the state of knowledge of Umayyid wares in the area it is unwarranted to suggest that there was a hiatus in occupation. Evidence of occupation was present for the eighth century as well as the ninth and possibly the tenth centuries.

Of the remaining sites only the period L Site 14 exhibited evidence of Islamic occupation. Although eighth century brittle cooking pot wares were present, the ninth century polychrome glazed wares were absent, which implies that occupation had ceased at around the time that Kurban Höyük was reoccupied during the ninth century.

Paramount among the period M sites was a formal building measuring 57 x 57 m, situated on top of Kurban Höyük south mound. It was excavated during the Kurban Höyük campaign and was shown to consist of ranges of rooms around all four sides of a central court. The formal layout is reminiscent of early Islamic way stations, the precursors of caravanserais. If such was its function, it was probably an installation on the Raqqa-Saruç-Samosata (Sumaysāt) road described by Ibn Khurdadbih, Kudāmah, and Muḳaddasī during the ninth and tenth centuries (Le Strange 1905, p. 125). The route would have passed through Yaslica (Site 18) which was one of the few sites in the area to yield early Islamic ceramics. It is possible also that the unusual linear earthwork (Site 4) which produced a single green glazed sherd of possibly early Islamic date may have been an installation along the route. However its lack of an obvious function and the weak dating evidence cannot be used as independent evidence to support the presence of a road through the area.

Evidence of economic activities was provided by a water mill which comprised robbed out wall trenches at the southern end of Site 6. Some 140 m to the north a millstone was found in the topsoil (*App. A*, fig. A.2b). Unfortunately, the lack of clearly associated pottery made it impossible to distinguish whether this feature was late Roman-early Byzantine or early Islamic.

In conclusion, unless the late Roman-early Byzantine pottery continued in use into the eighth or ninth centuries, in other words, it is more of a cultural than a chronological indicator, it would appear that all the major sites in the area were abandoned during the late sixth or seventh centuries. Furthermore available evidence demonstrates that the early Islamic settlements occupied marginal locations. For example, Site 14 had an inaccessible location on terrace I. Kurban Höyük, which developed when Site 14 was abandoned, was chosen as an eminent position which also happened to lie near the territorial divide between the two early Byzantine Sites 2 and 27B. Site 6 also was developed near the edge of a site's territory, in this case Site 7. These examples all imply that, for reasons unknown, new village locations were chosen away from the former nodal settlements.

A conspicuous outcome of the dwindling settlement network was a decline in land use intensity. Firstly, this can be inferred from the small population, which would have been too small to keep the entire late Roman-early Byzantine cultivated area under crops. Secondly, field scatters were completely lacking for the early Islamic period. Because of their high visibility, early Islamic wares would not have been missed during sample pickup. This indicates that manuring, at least with settlement-derived organic refuse, must have gone out of use by this time. The way station at Kurban Höyük probably only housed a small

permanent population therefore even during the ninth century, when ceramic indicators were most abundant, it is likely that the sedentary population of the area was very low. Quite possibly more people passed through the area than were ever in permanent residence.

PERIOD N: MEDIEVAL (ELEVENTH TO THIRTEENTH CENTURIES A.D.)

During the eleventh or twelfth centuries, the settlement pattern again underwent a rapid change, but this time evidence for settlement increased to eight sites covering a total of eight ha. By cross reference to coin-dated, excavated assemblages from Gritille Höyük, the surveyed sites were placed within approximately a 200–250 year time range within the eleventh-thirteenth centuries. This reference assemblage included glazed wares, cooking pots, and a distinctive range of jar lids (*App. B*, fig. B.18, nos. 15 and 16).

The medieval sites formed a fairly even, rather undistinguished scatter of small settlements averaging around one ha in size (fig. 5.3). They were dotted between 2 and 4 km apart along both banks of the Euphrates. A single small site (35) was situated within the İncesu valley 3.50 km south southwest of Site 8 (fig. 5.7). Both multiperiod Sites 17 and 18 were occupied as were the more distant Sites 29, 43, and 44. A dense scatter of Medieval pottery on the summit of Şaşkan Büyüktepe indicates that this was occupied possibly as a small fortified stronghold. A supplementary scatter of Medieval wares also was found within the lower town of Site 8 (area k, *App. A*, fig. A.5). From its limited extent of around one ha it is evident that nowhere did settlement extend to the limits of the late Roman-early Byzantine lower town at Site 8.

The high terrace was devoid of settlement during this period and probably remained out of cultivation until late Ottoman times when the hamlets of Akpınar and Dokuzköy were established. The only early Islamic site to be reoccupied was Site 18. The formal building at Kurban Höyük was probably abandoned during the tenth century A.D., and eventually part of the site became used as a small Islamic cemetery (Ingraham in Marfoe et al. 1986). The proximity of Site 23, 300 m to the northwest, suggests that the burials may have belonged to that settlement.

No distinct settlement pattern emerged for this period, which is roughly comparable to those of the EB-MB and Seleucid periods (fig. 5.3) in terms of site size and dispersal. The impression is one of small rural settlements, probably subsisting from cultivation on terrace III, along the İncesu Deresi and in small enclaves around Sites 17 and 18. Pastoral activities could have ranged over extensive tracts of the higher terraces, the limestone upland, and the Euphrates flood plain.

B. DISCUSSION

Unlike the Late Chalcolithic and Early Bronze Ages, the archaeological record of the second and early first millennia proved extremely difficult to relate to regional trends or historical events. The Middle Bronze Age occupations at Sites 8 and 13, probably also at Sites 29, 43, and 44, may have belonged to a broad network of Amorite or Hurrian settlements spread throughout northern Syria during the Old Syrian period. Their demise may be explained by the upheavals that disturbed this system during the Late Bronze Age. Whether the Hittite King Khattushilish I was responsible for this decline (ca. 1660 B.C.,

Gurney 1973, p. 232) cannot be answered by the survey record. Nevertheless, for the Old Hittite and Hittite Empire period (ca. 1650–1400 and 1400–1200 B.C. respectively) the record is very meager. Only Site 31, with its fifteenth century B.C. ceramic parallels at Tell Hadidi, shows evidence of belonging to this period. Eventually, further work on the museum collections may demonstrate the existence of Hittite ceramics within the assemblages from Sites 7 and 8.

It is not until the early Iron Age at Site 7 (ca. 1200–900 B.C.) that a distinctive ceramic type—the grooved bowl—enables us to re-establish evidence of settlement. This Anatolian form quite clearly indicates post-Hittite occupation, at which time the region was part of a group of Syro-Hittite kingdoms. Site 7, the principal center within the survey area, was probably part of or on the fringes of the semi-autonomous Kingdom of Khummukh, which periodically allied itself with Assyria or Urartu (Hawkins 1974, p. 68; *ibid* 1982, p. 406).

Although at the time of writing both archaeological and historical records for the area are vague, it appears that during the second millennium B.C. there was a decline in the sedentary population. This cannot be quantified; neither is it possible to determine whether settlement ever ceased completely. Such information may emerge however with the analysis of excavated sequences from Lidar, Tille or Samsat Höyük. Such a decline corresponds to a much better cataloged downward trend on the Mesopotamian plains (Adams 1981, pp. 130–74). This followed a late third millennium peak in population and can be compared with a similar decline in northern Syria and the Levant (Marfoe 1976) during at least part of the second millennium B.C. In contrast, the nearest detailed survey, that conducted by Whallon in the Keban area within the Anatolian plateau, showed a marked population peak for the Hittite Late Bronze Age (Whallon 1979). This conflict may in part be explained by the dearth of ceramic indicators for the LB within the Kurban Höyük area and partly by the lack of recognition of a local type assemblage. Consequently, although a demographic increase in the Keban area may have been matched by a decline to the south in the Karababa, the survey evidence does not offer proof.

Quantitative evidence of settlement trends remained elusive throughout the Iron Age although Site 7 appeared to maintain its pre-eminence. Ceramic links with Assyrian levels at Sultantepe imply that when Khummukh and neighboring states fell to the advancing Assyrian Empire during the late eighth century B.C., Site 7 continued to be occupied. Whether this continued throughout the succeeding Achaemenid period is unclear, but other sites probably occupied during this period include Site 40 on the İncesu Deresi and Site 5 overlooking the Euphrates.

Not until the appearance of unequivocal Hellenistic pottery types, corresponding approximately with the beginning of the Seleucid period, can the settlement distribution again be resolved into an interpretable pattern. The dispersed settlement pattern of Phase 1, characterized by incurved rim bowls and related forms, corresponded approximately to the period of Seleucid control. By the late second or early first centuries B.C., during the earlier phases of the use of Eastern Sigillata wares, Parthia had extended its control to the Euphrates. The survey area lay within the Kingdom of Osrhoene which was loosely allied with Parthia, and which confronted the Kingdom of Commagene, situated on the opposite bank of the Euphrates. Judging by the significant occurrence of Eastern Sigillata wares on sites within the survey area, there was a moderate ceramic trade with the Roman economic sphere. These links may have been long-term, but conversely, may reflect intervals within

Osrhoene's complex allegiances with Parthia, Armenia and Rome, when the Kingdom was predominantly aligned with Rome. Within this light, the settlements south of the Euphrates, can be viewed as Parthian settlements which received some trade goods from the Roman economic sphere.

In A.D. 72, Commagene became a Roman province and Osrhoene followed approximately at the end of the second century (A.D. 197 according to Wagner 1983, p. 106). During the early part of the third century, that is during the earlier stages of Osrhoene's provincial status, the lower settlements of some sites, notably that of Site 8, had started to expand. There is no interpretable archaeological evidence that throws light on developments during the Roman-Sassanian wars of the third-fourth centuries, but between the late fourth and early sixth centuries the region experienced a rapid expansion of settlements which culminated in the extension of settlement on to the high terrace (Sites 12, 14, and 37).

When the frontier between Rome and Parthia lay along the Euphrates, defense on the Roman side probably relied upon an integrated system of watchtowers and small forts linked by a military road (Crow and French 1980, p. 906). With the incorporation of Osrhoene within the Roman Empire, Roman roads, equipped with forts and watchtowers, developed to link Zeugma with Edessa and Zeugma with Samosata (Wagner 1983). The latter road almost certainly ran through the survey area, but no evidence of a paved road could be found. Instead, the military road may be represented by the hollow way track which linked the riverside settlements. In other words the incorporation of Osrhoene, the construction of a military road, probably through the survey area, and the growth of late Roman settlements may all be related. The slightly later development of settlements on the high terrace, which had taken place by the sixth century, overlapped with the reign of Justinian.

The massive increase in settlement numbers, aggregate settlement area, and land use intensity corresponded to several developments within the Eastern Roman Empire: Firstly, when Osrhoene acquired provincial status, trade probably increased dramatically. This may have been associated with increased agricultural investment and production. This in turn may have attracted immigrants or the sedentarization of nomads. By the time of Justinian there was a strong emphasis upon the strengthening of settlement defenses along the Eastern Roman frontier (Bury 1958, p. 90). This would again result in increased economic activity within the area, possibly involving an increased demand for agricultural products. Another factor may have been the build up of troops along the frontier prior to and between the wars with Sassanian Persia (A.D. 527–532 and 540–545). Unlike the major cities to the west or the regions bordering the Mediterranean, the Edessa (Urfa) region would have been too isolated to enable North African grain to be supplied consistently. Hence, although on occasion the army could rely on some grain from this source (Teall 1959, p. 95) they, like the local population, must have relied mainly upon local produce.

Such increased economic activity and demand may have stimulated agricultural development within the area, but equally would have required the production of a substantial surplus. As was shown above, this cannot be proved for the survey area unless, for example, the soldiers or frontier work force in part farmed their own fields, or, population densities within sites were exceptionally low.

Because of the numerous uncertainties involved, such a population increase cannot be easily explained. It was however part of a widespread development best exemplified by the numerous remains of rural settlements of various types found in northern Syria (Tchalenko 1953). These attained their maximum development during the fourth-sixth centuries, that is at the same time as those within the Kurban Höyük area. The latter area included virtually no stone-built architecture, in contrast to the monumental development of ecclesiastical buildings, farms, and domestic structures in northern Syria. Also, the evidence of agriculture from the survey area was indirect: mainly in the form of field scatters. This contrasts with the tangible remains of barns, stables, olive presses, and farms in Syria. In spite of the architectural and possible socioeconomic differences, the two types of development can be viewed as belonging to the same developmental trend of rural settlement expansion within northern Syria.

The survey provided equally vivid evidence of a precipitous decline in settlement during the seventh and eighth centuries. This corresponds firstly to the campaign of Chosroes II during the period A.D. 607–15 when the fortresses of Roman Mesopotamia and adjacent areas were reduced, and secondly to the spread of Islam slightly later in the same century. Consequently, by the seventh and early eighth centuries, the area appears to have become very sparsely populated. The two settlements, Sites 6 and 18, and the 'khan' or way station at Kurban Höyük, were subsidiary to the 'small city' that Istakhri noted at Samosata (Goell 1974, pp. 92–93). Decline is implicit in the description of Istakhri, who reported that the inhabitants derived their water from the Euphrates, thus suggesting that the Roman aqueduct had ceased to function. This phase of occupation, dated by ceramics to the ninth century A.D., corresponded with a phase of Arab expansion within the newly conquered lands bordering on the Byzantine state (i.e., within the *Thughūr*). A certain amount of settlement and commercial development accompanied this movement, but also, throughout much of the area of Edessa (Urfa), Harran, and Amud (Diyarbakr) during the late eighth century, there was a flight from many villages as well (Ashtor 1976, p. 67). However, the small settlement numbers involved make interpretations of growth or decay within the early Islamic period of trivial significance.

Of greater moment was the decline of settlement during the seventh century. This may have entailed substantial population shifts into Anatolia, with the population seeking to remain within the frontiers of the Byzantine state. A similar example in Anzitive, to the east of the Euphrates near Melitine (Malatya), shows a population decline between the sixth and tenth centuries being matched, in part of the province, by a population movement into neighboring Sophene to the north (Howard-Johnston 1983, pp. 257–58). Within the area of survey, an alternative view of settlement movement would involve a transfer of population southwards into the Syrian Jazirah where new settlements were established in early Islamic times (Grabar 1969, p. 95). Although such early Islamic settlements are known from the Syrian Jazirah, for example, at a series of single period sites near Tell es-Sweyhat (Wilkinson in Holland 1976, pp. 68–69), the source of their original inhabitants is of course a matter for speculation.

The early Islamic phase of settlement in the vicinity of Kurban Höyük probably terminated in the tenth century. This accords approximately with the Byzantine invasions which resulted in the eventual capture of Hamdanid Aleppo in A.D. 962 (von Sivers 1982, p. 99). Unfortunately, the available evidence from survey does not permit more accurate

dating. Nevertheless, there is neither a ceramic nor a settlement continuity between that of the early Islamic period and the Medieval period that followed.

Historically, much of the medieval occupation (eleventh-thirteenth centuries) coincided with the existence of the Crusader County of Edessa (A.D. 1098 to 1144). This was a fairly cosmopolitan period as is well illustrated by the range of Frankish, Byzantine, and Muslim coins from the Gritille excavations (Ellis and Voigt 1982). Occupation may have continued uninterrupted into the succeeding Ayyubid period but had probably ceased by the mid-thirteenth century when at least the cities of Urfa, Harran, and Saruç suffered considerably at the hands of the Mongol invaders (Ashtor 1976, p. 251). Whatever the reason behind the eventual cessation of occupation, there was little evidence for settlement within the survey area for the next seven centuries, except for a single hamlet, Site 46, within the İncesu valley. In addition, there may have been minor occupations at various multiperiod sites in the area, but this was not clear from the collected pottery.

The archaeological data summarized above shows a rising demographic trend from a poorly understood period of low population density corresponding to the early first millennium B.C. to a considerable population peak during the fourth-sixth centuries A.D. This was then followed by a plunge to a low sedentary population by the eighth-ninth centuries A.D. (fig. 5.3). Although the present survey relies on a much smaller data base, it follows a similar trajectory to that described for the same time interval within the Mesopotamian lowlands (Adams 1981, pp. 175–213). In the Mesopotamian case, the population peak is thought to have occurred during the sixth century A.D. under Sassanian rule, by which time the signs of decay were already in evidence. The decline was well advanced by the ninth century, but as with the present study the ceramic record for the intervening seventh and eighth centuries is frustratingly silent.

As far as field evidence is concerned, the above trends are well documented. What followed during late Medieval and post-Medieval times is much less certain. As noted above, the archaeological record is very weak for the period between the late thirteenth and nineteenth centuries. Part of this apparent absence of sedentary population may be accounted for by the high proportion of nomads present from the eleventh century onwards. This is well illustrated for the sixteenth century when some 60–70 percent of the population of southeastern Turkey was probably nomadic (Wagstaff 1985, fig. 8.3). Even during the seventeenth and eighteenth centuries many Anatolian villages were being abandoned and agriculture was in a state of decay. Again this appears to have been associated with a high degree of nomadism. Because archaeological evidence of nomadism is so elusive this component of the record cannot be described. Nevertheless the negative archaeological evidence, general historical sources of nomadism (summarized in Wagstaff 1985), and local traditions such as the settlement of nearby Yaslica by Türkoman nomads during the nineteenth century all point to a high proportion of nomads in post-Medieval times.

CHAPTER 6

THE DEVELOPMENT OF RURAL SETTLEMENT
AND LAND USE

In the foregoing chapters, 4 and 5, the evidence of settlement in each ceramic period is presented and discussed within a historical and regional framework. It is now necessary to examine the mechanisms of settlement development and to suggest how the rural settlement pattern has developed in relation to a complex flux of environmental and economic conditions. Because the data base is small, the statistical significance of many of the conclusions is probably questionable, but among them the following major trends appear to be of significance. These themes are treated numerically and begin with factors related to the development of simple rural settlements. The theme is elaborated by the examination of the development of nodal centers and ends with a discussion of land use, environment, and population change through time. This order is not immutable, but does serve to differentiate the early conditions of settlement development from those which pertain to the more complex societies.

1. With the exception of the anomalous growth of Neolithic Kumartepi (Site 28), the rank-size curves and settlement size histograms show a weak trend, at the bottom of the settlement hierarchy, from very small dispersed communities of 0.30–0.40 ha during the Early Chalcolithic towards settlements of one ha or a little more in area (figs. 4.2, 5.3 and 6.1). The earlier settlements probably only accommodated a few families (25–40 people), whereas the settlements of the Seleucid-Hellenistic period and later (period K and later) attained the size of small villages.

In these later settlement phases there was a discernible development of the 'lower limb effect' in which the rank-size curve falls off below a point corresponding to settlements of about one ha in size (ca. 80–120 people). Although the lower limb threshold has increased for modern times (fig. 5.3), the former figure is more compatible with the general pattern within Urfa province in which the maximum number of settlements have populations of around 100 (Gülöksüz 1975, p. 148).

2. Settlements developed along the precipitous edge of the Euphrates terraces were usually situated alongside valleys which led down to the flood plain (see for example, *App. A*, fig. A.5, at Site 8). Springs frequently issued from the base of such valleys and gave the illusion that the spring was the determining factor in the growth of the settlement. This might have been the case for the growth of certain villages where springs were particularly copious (e.g., modern Cümcüme: Site 27), but primarily the valleys appear to have been

the reason behind settlement growth. By allowing access to the Euphrates, as indeed is still the case today, they enabled herds and people to take water. Sites particularly well positioned in regards to access via tributary valleys were, from west to east, Sites 11, 9, 27, 7, 28, 8, and 31.

3. Away from the Euphrates, springs were the prime locational determinant and all sites were developed by springs or seepages. Today seepage discharges are so meager in some years that they would be insufficient to sustain a community and its herds. Formerly, however, as has been suggested for Site 20 (ch. 4), spring discharges were probably higher as a result of enhanced infiltration promoted by a more continuous soil and vegetation cover.

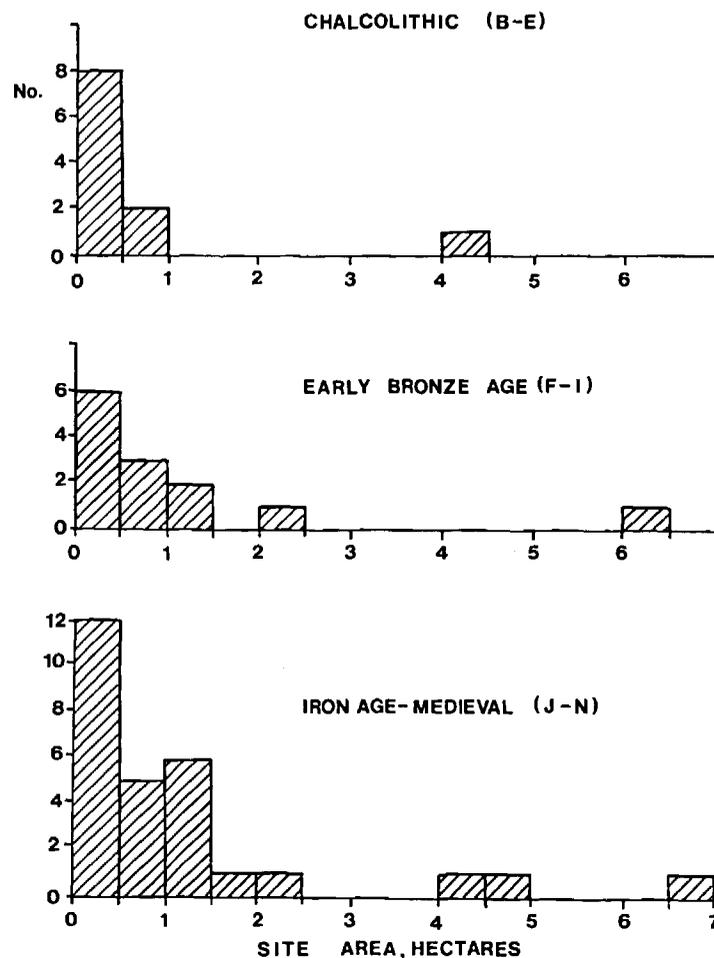


Figure 6.1. Histograms of Site Areas in Hectares.

Spring settlements were, Sites 20, 14, 12, 37, 42, and 13 on terrace I; Sites 16, 24, and Kurban Höyük on terrace III; and Sites 36 and 46 near springs issuing from tributaries of the İncesu Deresi. The albeit discontinuous flow of the İncesu encouraged settlement development at Sites 15, 6, 35, 38, 39, 40, 41, and 47.

Kurban Höyük was anomalously positioned on terrace III away from the Euphrates, but excavation showed that, as was described in chapter 1, the Chalcolithic settlement

probably developed around a spring. This was subsequently replaced by wells which were dug down to intercept the ground water table below the mound.

4. One of the more conspicuous results of the excavations at Kurban Höyük was the tendency of the settlement to expand to cover both mounds (total area ca. 4–6 ha) and then to retreat again to one or other of the mounds (area ca. 1–2 ha). Episodes of expansion were recorded during the Late Chalcolithic A (Survey period E), contemporary with the Uruk expansion within Mesopotamia and northern Syria, and during the mid-late EB (Survey period G) roughly contemporary with the Akkadian Dynasty. The growth of Kurban Höyük during the latter period was matched by the expansion of Titriş Höyük to its maximum size and the development of a well-developed network of settlement nodes over the entire area of sites examined. An additional nodal phase at Site 7 during the later second or early first millennia B.C. is difficult to interpret because the settlements of this period are not contemporaneous.

The two episodes of expansion at Kurban Höyük both exhibited evidence for increased external contacts (see ch. 4). That of the Late Chalcolithic belonged to a phase of increased population in which Kurban Höyük expanded and two outlying settlements, Sites 15 and 39, became occupied. Of these, Site 15 may have developed on a territorial boundary, probably that between Kurban Höyük and Samsat.

The mid-late EB nucleation phase of Kurban Höyük, in contrast, appears to have been at the expense of the outlying early EB Sites 24 and 39, which remained unoccupied during the mid-late EB. After its florescence the occupied area of Kurban Höyük declined, and a series of small, dispersed settlements again grew up (period H: EB-MB).

Such recurrent expansion phases followed by 'breakdowns' appear to have been contemporaneous through much of Syro-Mesopotamia, although the mechanisms underlying them are less clear (Algaze 1986 and KH II; Gibson 1974). Nevertheless, settlement nucleation appears not to have been an endogenous process, but conformed to the Pirenne model in which the emergence of market centers is connected with increased external contacts or trade (Pirenne 1936; Hodder and Orton 1976, p. 74).

5. Although archaeological evidence favoring a market function for the nucleated settlements is lacking, it can be shown by the application of a simple gravity model to selected settlement systems that interaction between nodal settlements were probably significantly greater than between settlements of the dispersed phase: In this case $M_{ij} = P_i P_j (d_{ij})^{-2}$ in which M_{ij} = interaction between centers i and j of 'mass', P_i and P_j (in this case 'mass' is site area in ha), and d_{ij} is the distance between the two centers (Hagget 1965, p. 35).

Applied to settlements on terrace III during the mid-late EB, interaction between Kurban Höyük and Site 8 would be indicated by an index of 0.17. This compares with an interaction 0.013 between the two sites during the early EB or, 0.06, if the intermediate Site 24 is included.

The body of quantitative data is not large enough to pursue this approach rigorously, but the above model demonstrates that interaction along specific lines will increase with settlement nucleation. This leads to a strengthening of communication networks, and it is significant that such nodal phases were associated with tangible evidence of increased contacts with Mesopotamia, either ceramic, in the case of the Late Chalcolithic, or inscriptional in the case of mid-late EB Titriş Höyük.

TOWN AND COUNTRY IN SOUTHEASTERN ANATOLIA

Table 6.1. Periods of Occupation and Site Areas for All Sites Surveyed.

<i>Site Number</i>	<i>Phases Occupied</i>	<i>Subareas for each Occupied Phase</i>	<i>Total Occupied Area (in hectares)</i>
Kurban Höyük			
2	K	0.50	3.92
2	L	4.00	—
2	M(?)	(?)	—
3	L	0.73	0.73
4	M(?)	—	—
5	J	0.67	0.67
6	L	1.00	1.30
6	M	1.30	—
7	H	0.20	0.24 high mound
7	J	3.50	3.04 low + high mound
7	K	1.00	15.54 total enclosed area
7	L	3.00	—
8	F	0.50	1.10 high mound
8	G	1.10	2.20 high mound + terrace
8	H	1.10	—
8	I	(?)	4.22 lower site
8	J(?)	—	—
8	K	1.10	—
8	L	6.50	—
8	N	2.10	—
			6.46 total: high mound + terrace + lower site
9	K	0.10	0.10
10	K	0.15	0.15
11	C	0.30	0.30
12	L	1.20	1.20
13	H-I	0.10 hilltop	0.30 total estimate
14	L	0.92	0.92
15	E	0.25	0.25
16	H	0.15 hilltop	0.40 total estimate
17	E	0.30	2.00
17	F	0.30	—
17	G	2.00	—
17	H	2.00	—
17	J(?)	(?)	—
17	K	2.00	—
17	L	1.00	—
17	M	1.00	—
17	N	1.00	—
18	B	0.30	0.30
18	C	0.30	—

Table 6.1. Periods of Occupation and Site Areas for All Sites Surveyed (*cont.*).

<i>Site Number</i>	<i>Phases Occupied</i>	<i>Subareas for each Occupied Phase</i>	<i>Total Occupied Area (in hectares)</i>
18	D	0.30	—
18	F	0.30	—
18	G	0.30	—
18	H	0.30	—
18	J(?)	(?)	—
18	K	0.30	—
18	L	0.30	—
18	M	0.30	—
18	N	0.30	—
19	K	0.76	0.76
20	B	0.87	0.87
21	D	0.50	1.10
21	F	0.50	—
21	G	1.10	—
21	J(?)	—	—
21	K(?)	(?)	—
21	L	1.00	—
21	N	1.10	—
22	L	1.00	1.00
22	N	1.00	—
23	N	1.45	1.45
24	F	0.45	0.45
25	C	0.20	0.20
26	L	0.25	0.25
27C	B	0.30	0.30
27B	H	0.75	0.75
27B	L	0.75	—
27B	N	0.75	—
27A	K	0.95	0.95
28	A	6.04	6.04
29	B-D	—	1.75 mound
29	G	—	5.90 total mound + lower site
29	H	—	—
29	J(?)	—	—
29	K	—	—
29	L	—	—
29	N	—	—
30	L	0.10	0.10
31	J	0.12	0.12
32	L	2.84	2.84
33	Post-Medieval	—	— Ottoman water mill
34	L	0.10	0.10

Table 6.1. Periods of Occupation and Site Areas for All Sites Surveyed (*cont.*).

<i>Site Number</i>	<i>Phases Occupied</i>	<i>Subareas for each Occupied Phase</i>	<i>Total Occupied Area (in hectares)</i>
35	N	0.30	0.30
36	K	0.10	0.10
37	H	0.50	1.50
37	L	1.50	—
38	K	0.63	0.63
38	L	0.63	—
39	C	0.30	0.30
39	E	0.30	—
39	F	0.30	—
40	J	0.25	0.25
41	H	0.30	0.30
42	B	0.14	0.14
43	D(?)	—	3.25 main mound
43	G	—	6.25 lower mound
43	H-I	—	16.50 outer site
43	J(?)	—	—
43	K	—	—*
43	L	—	—
43	N	—	—
			26.00 total: occupied area
44	B-C	—	3.10
44	E	—	—
44	F	—	—
44	G	—	—
44	H	—	—
44	J(?)	—	—
44	K	—	—
44	L	—	—
44	M	—	—
44	N	—	—
45	Early Holocene	—	—
46	Post-Medieval	0.25	0.25
47	J	0.15	0.15

*Estimate by Marfoe et al. 1986 is 35 ha.

Similarly, rank-size curves become steeper for the nodal settlement phases (figs. 4.2 and 5.3). This is best indicated by the curve for the mid-late EB settlements within the 1,000 km² 'area of interest' (fig. 4.5), which shows a hierarchy dominated by the urban settlement of Tiritiş Höyük. Again, unfortunately, the quantitative evidence is meager and

provides evidence for only a moderate increase in system integration during this period (cf. Johnson 1980, p. 237).

6. The pairing of river settlements during the mid-late EB, as discussed in chapter 4, may also be a product of increased communications and trade. Larger settlements are to be expected where roads converge or where goods are transferred from one medium to another (Burghardt 1959, p. 322). This is best exemplified where roads converge or where paired settlements develop at river crossing points, but, unlike the examples from the United States discussed by Burghardt, the oblique alignments cannot be interpreted in the same way as bridging points. In the American examples, where east-west routes crossed north-south rivers, the east bank settlement normally developed first, in response to the westward movement of settlers. Subsequently, west bank settlements grew up as road concentration towns, and if conditions were conducive, their development would outstrip those on the east bank. Although a similar stimulus-response mechanism may have operated in the area of Kurban Höyük, the employment of current action to float craft downstream and across the flood plain would have resulted in a dominant component of interaction from upstream to downstream. Consequently, Lidar would 'control' traffic flow from Titriş, Harran, and the southeast towards Gritille. Similarly, Samsat would 'control' the flow of goods from the Anti-Taurus towards the İncesu corridor and the southeast, and Kurban Höyük would 'control' flow towards Birecik. Return traffic, probably a smaller share of the interaction between paired settlements, would need to be taken upstream to cross the river channel by means of a more direct route.

Although the pairing of settlements might be seen as a result of strengthened communications, only when viewed in conjunction with the gravity model, rank-size curves, and external contacts is there evidence of increased communications and systems integration during the mid-late EB.

There followed at least a partial collapse of the paired settlements that coincided with a phase of diminishing settlement size and probably less interaction between remaining paired settlements.

In general, communications appear to have played a significant role in settlement development from the sixth millennium B.C. onwards. This is best illustrated by the Şaşkan settlement complex (Sites 7, 8, and 28) which grew up at the intersection of the İncesu corridor with the Euphrates valley. It appeared first during the early sixth millennium B.C. and again became the main settlement of the survey area between the early second millennium B.C. and the late first millennium A.D. Its dominance alternated with that of Kurban Höyük (tab. 6.2), which formed the major settlement from Halaf times until the close of the third millennium. Both the Şaşkan complex and Kurban Höyük were probably subordinate at all times to Samsat.

Even during periods of low population density, roads may have remained important. For example, after the massive population decline of the seventh-ninth centuries A.D., an early Islamic way station or khan was in operation on the road between Saruç and Samsat. Nevertheless, political divisions and frontier locations must have been a major influence on communication links. Therefore in the recent past, the survey area has been little more than a backwater off the main channel of communications between Urfa-Diyarbakir and Ankara-Istanbul. Within this system the İncesu corridor had virtually ceased to function as a road.

Table 6.2. Aggregate Occupied Areas on Kurban Höyük and Şaşkan Sectors of Terrace III.

<i>Period</i>		<i>Kurban Höyük Sector</i>	<i>Şaşkan Sector</i>	<i>Total</i>
A	(Neolithic)	—	6.00 ha	6.00 ha
B	(Halaf)	1.80 ha*	—	1.80
C	(Middle Chalcolithic)	1.50	—	1.50
D-E	(Late Chalcolithic)	4.25	—	4.25
F	(Early EB)	1.50	0.50	2.00
G	(Mid-Late EB)	6.00	1.10	7.10
H	(EB-MB transition)	2.65	1.30	3.95
I	(Early MB)	0.40	1.10	1.50
J	(Late Second and Early First)	0.70	4.70	5.40
K	(Hellenistic-Roman)	1.75 (2.51**)	2.10	3.85
L	(Late Roman- Early Byzantine)	5.45	10.53	15.98
M	(Early Islamic)	0.30	1.30	1.60
N	(Medieval)	2.20	2.10	4.30
Modern		4.70	2.30	7.00

*The dominant aggregate areas are in italics.

**Includes Site 19, which is a little to the west of terrace III.

Although strengthened communication networks may be interpreted as evidence of increased economic integration during nodal settlement phases, there was still a strong emphasis upon a subsistence economy. This is best exemplified by faunal studies at Gritille and Kurban Höyük, which suggest that during the mid-late EB both communities employed subsistence pastoral strategies. In other words there was little evidence of the village size settlement providing animal products for larger settlements in the vicinity (Stein and Wattenmaker in Marfoe et al. 1986). In the case of Kurban Höyük it is not surprising that the economy of the settlement was at a subsistence level, because few hamlets were in the area to operate as producer settlements.

Self-sufficiency was probably even more marked during phases of settlement dispersal. This is best illustrated by the production of fine ware pottery that took place at three small adjacent early EB settlements (0.5–1 ha; see ch. 4). Unless these are envisaged as outlying specialized production units, which seems unlikely in view of the lack of centralized settlements at this time, it appears that even at the level of luxury production communities must have relied upon their own products.

7. The calculation of aggregate settlement area enabled an approximate population curve to be produced on the assumption that settlement population densities were an average 100 persons per ha (fig. 6.2). This figure takes into account modern population densities within the area and a variety of estimates of modern and ancient population

densities from Middle East sites as summarized by Hassan (1981, pp. 66–68). The population estimates suffer from all the pitfalls inherent in such assessments, such as the problem of definition of occupied area, loss of archaeological sites, and the estimation of site population densities. In order to emphasize the potential variability involved, the curve incorporates a ± 15 percent deviation in aggregate settlement area/population and has been qualitatively smoothed to produce the most conservative curve. Rather than emphasizing the differences between periods, the curve has been drawn through points within the ± 15 percent deviation which minimize deviations and emphasize continuity. For example, difference in population between periods B and C or G and H. Therefore, although there might have been a real difference, it is considered to be unproved.

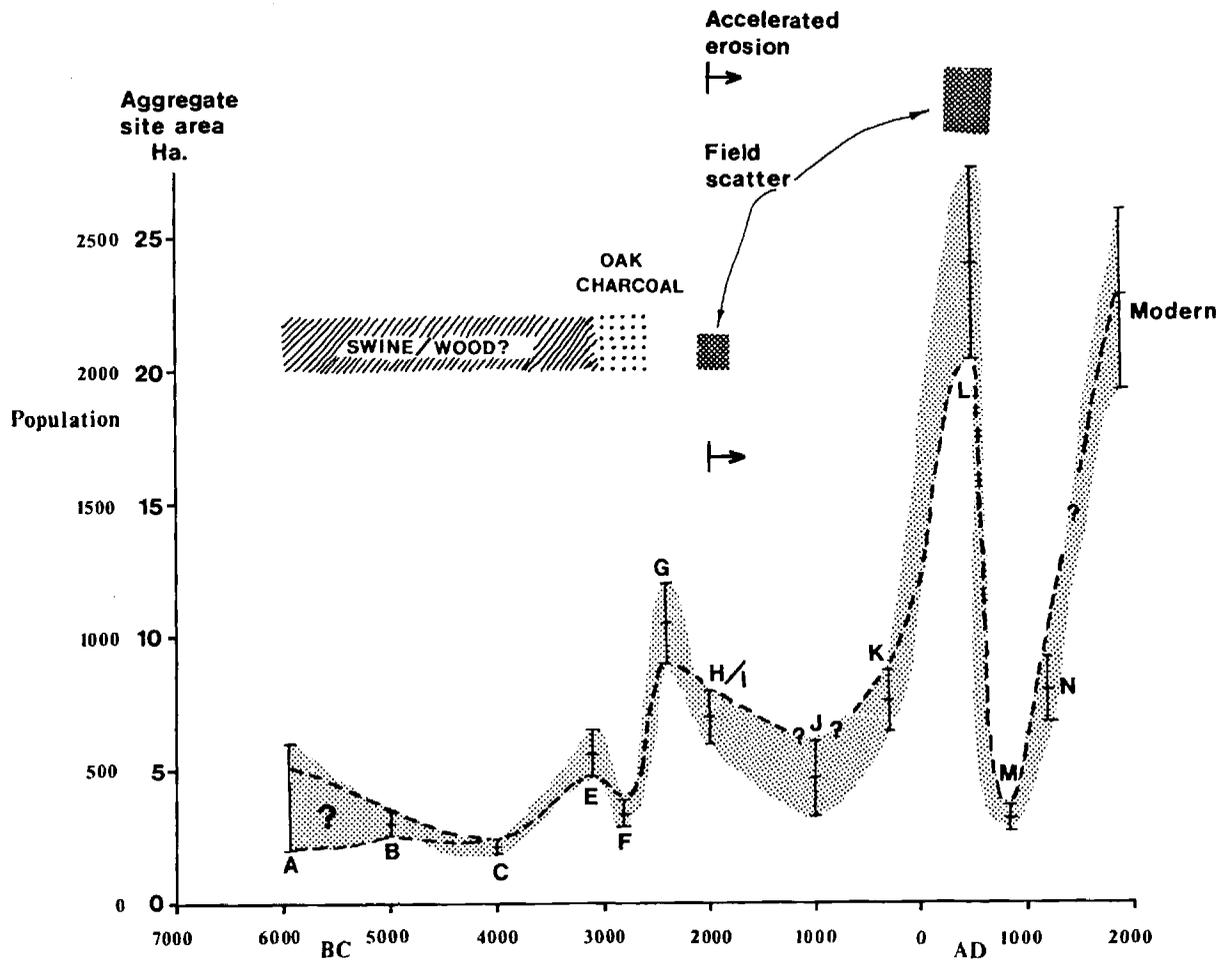


Figure 6.2. Demographic Curve for Detailed Survey Area Based on Aggregate Site Areas.

From the population curve (fig. 6.2) it is evident that superimposed on a general rising demographic trend there were substantial fluctuations. Peaks occurred during periods E and G (see above point 4) and a substantial trough during period J (see ch. 5). The late Roman-early Byzantine peak (period L), which was shown in chapter 5 to have been part of a general rise in population within Syro-Mesopotamia, probably gained momentum when Osrhoene was incorporated into the Roman Empire. Such a rise could not have occurred without at least some immigration into the area and conversely the slump which followed during the seventh-tenth centuries A.D. was probably a result of emigration from the area.

Superimposed on the demographic curve of figure 6.2 are major vegetation phases as inferred from faunal and palaeobotanical studies (chs. 1, 4, and 5). Following a putative phase of woodland development between the early sixth and the early third millennia B.C., devegetation appears to have ensued during and shortly after the population peak of the mid-late EB (period G). Gully erosion and fan aggradation, which apparently followed in the wake of forest depletion, also provides a hint that the woodland reserve had diminished by the late third-early second millennia B.C.

Both appearances of 'field scatters' coincided approximately with peaks in population. The earlier, weakly developed episode, which also corresponded to a general phase of woodland removal, might relate either to a broad population peak that occurred in the second half of the third millennium (i.e., to the peak G, H-I on the smoothed curve) or to the period that followed the mid-late EB population peak (i.e., the more abrupt curve on fig. 6.2). If the latter argument is employed, it would imply that the mid-late EB settlement peak resulted in nutrient depletion that necessitated increased manuring in the following period. However, in view of the approximate quality of the aggregate site area data, the former interpretation using the smoothed curve is preferred. Thus this early phase of field scatter is interpreted as resulting from a peak in population which necessitated the adoption of annual cropping. Probably a subordinate cause was the loss of woodland as a potential fuel source which would have increased the demand for animal dung as a fuel, thus impelling the inhabitants to exploit new sources of fertilizer within the settlement.

The evidence for late Roman-early Byzantine field scatters was much stronger and unequivocally coincided with a peak in population within the survey area. Settlements were common on both terraces I and III and evidence of pastoral activities was recognizable on the limestone uplands. Although independent evidence of vegetation cover for this period is meager, the Bozova pollen core indicated a very low incidence of oak woodland on the adjacent uplands during the last 2500 years (van Zeist et al. 1970).

Viewing the incidence of field scatters in concert with inferred vegetation and the demographic curve (fig. 6.2), the scatters can most cogently be argued as resulting from a need to establish fertilized annual cropping during times of diminished availability of animal manure. Evidence supporting the coincidence of field scatters with population peaks has come from the trading cities of Siraf (Iran) and Sohar (Oman) which both attained their maximum size during the ninth-tenth centuries A.D. (Wilkinson 1982). Late third millennium B.C. Tell es-Sweyhat in Syria was also surrounded by field scatters, which again were contemporary with the main settlement phase. The site formed part of a network of EB settlements and linking roads that developed on the east bank terraces of the Euphrates. Although the field survey data from around Tell es-Sweyhat was less reliable than that collected from around Kurban Höyük (Wilkinson in Holland 1976, pp. 67-70), the peak in regional population again appeared to coincide with the date of the field scatter.

The coincidence of evidence of settlement-derived manuring with population peaks lends support to the hypothesis of Boserup which envisaged a change, with increased population density, through forest-bush fallow manured with vegetation ash, short fallow manured by animals, and finally to intensive annual cropping in which soils were manured by animal manures, composts, human waste, and other organic refuse (Boserup 1965, p. 25). The Boserup model has been presented in tabular form by Grigg (1982, tab. 1) who

appended data on population density and frequency of cropping. The population densities cited are much higher than the gross calculated population densities within the survey area which included uncultivable land and waste. However, when only cultivable area is examined, such as the small subsection of terrace III west of the İncesu Deresi (i.e., the Kurban Höyük-Cümcüme terrace), population densities compare reasonably with those given by Grigg. Furthermore, the population densities for the field scatter phases are comparable to those described by Grigg as being associated with annual cropping using manure, human waste et cetera (Grigg 1982, tab. 1, Type 5).

Unfortunately, only field scatter phases were amenable to land use interpretation. For those periods when field scatters were lacking, evidence of cropping intensity could only be inferred by relating total calculated population to available cropped area. The data provided on table 6.3 is for terrace III to the west of the İncesu only. The potential crop area of ca. 700 ha is based upon the area of modern cultivation presented in chapter 2. Total population within terrace III has been calculated from aggregate site area. Potential fallow intervals are hypothetical and assume that the entire cultivable area was used to support the population calculated from site area.

Table 6.3. Population Densities and Potential Fallowing Regimes on Terrace III, Kurban Höyük Sector West of the İncesu.

<i>Period</i>	<i>Site</i>	<i>Aggregate Site Area</i>	<i>Cal. Pop.¹</i>	<i>Pop. Den. Per km²</i>	<i>Potential Fallow Interval²</i>	<i>Agricultural Regime³</i>
B	KH and 27C	1.80	180	26	1 to 7	Bush-short
C	KH, 11, and 25	1.50	150	21	1 to 8	Bush-short
D-E	KH and 15	4.25	425	61	1 to 2	Short
F	KH and 24	1.50	150	21	1 to 8	Bush-short
G ⁴	KH	6.00	600	86	1 to 1	Annual crops
H-I ⁴	KH, 13, 16, and 27B	2.65	265	38	1 to 4	Short
J	5	0.70	70	10	1 to 10	Bush
K ⁴	2, 9, 10, and 27A	1.75	175	25	1 to 7	Short
K ⁴	2, 9, 10, 19, and 27A	2.51	251	36	1 to 4	Short
L ⁴	2, 3, and 27B	5.45	545	78	1 to 1	Annual crops
M ⁵	KH	0.30	30	4	1 to 10	Bush
N ⁴	23 and 27B	2.20	220	31	1 to 5	Short
Modern	Cümcüme	4.70	470 ⁵	67	1 to 2	Annual crops

¹Based on 100 persons per occupied ha; but see note 5.

²Assuming 700 ha of cultivable land and 620 after period G when grapes appear to have become a significant part of the economy.

³Based on Grigg 1982, table 1 (after Boserup 1965): fertilizer sources 'Bush fallow': ash, vegetation, and turfs mixed in soil. 'Short fallow': manure and human waste. Annual cropping: manure, human waste, green manure, marling, and composts.

⁴After period G allowance is made for vineyards.

⁵During the study period Cümcüme's population was ca. 260-330.

Table 6.3 shows an alternation between periods of low population density (4–30 persons per km² within terrace III) in which inferred cropping techniques employed longer fallow intervals, and periods of high population density (35–86 persons per km²) when cultivation was by means of shorter fallow intervals or annual cropping fortified by the aid of manures. Peak densities correspond approximately with the appearance of field scatters in the manner outlined above. The minor peak in population density during the Late Chalcolithic would give a population density of 61 persons per km², and by inference cropping would entail one year of cultivation followed by a year of fallow. Animal manure and possibly human waste could have been employed as fertilizers (Grigg 1982, tab. 1). Certainly the former would not leave a trace of artifacts, but it is possible that the minor phosphate concentration which surrounded Kurban Höyük may have started to accumulate at this time (see ch. 3).

Long fallow intervals of one year of cultivation to seven or eight in fallow, *may* therefore have been characteristic of the Halaf or Middle Chalcolithic periods. Any increase in population would entail either a decrease in the fallow interval or the extension of the cultivated area, the fallow interval being held constant. If the latter expedient was adopted, because the entire area of terrace III was already under extensive cultivation, it would be necessary to cultivate and settle on terrace I as well. The appearance of settlement on terrace I during the Halaf period may therefore be a result of population increase accompanied by rather conservative agricultural practices.

Extending the above argument, if it is accepted that beyond a threshold distance of 1–2 km from a settlement there is a significant decline in the net return from cropping (Chisholm 1979, p. 61), a catchment of a given economic radius (e.g., 1.50 km radius) would be able to support larger central settlements under annual cropping than under more extensive long fallow regimes. If population growth occurred within a conservative regime of long fallow agriculture, cultivation would extend beyond the economic threshold. In such a case, principles of conservation of effort would encourage the budding off of smaller settlements in the manner described above. Such a mechanism may therefore account for the development of slightly smaller settlements during the Early Chalcolithic than during later periods. Because the evidence of social factors and defense needs also play a strong role in settlement morphology, it would be erroneous to view settlement development purely through the perspective of economic constraints. This is especially so in view of the recorded extension of cultivation beyond the economic thresholds cited above (Hillman 1973b, fig. 1; Blaikie 1971). Nevertheless, such economic factors almost certainly were influential in the molding of some of the trends in settlement geography outlined above.

With a pulsating growth in population through time, the following options would be open to the inhabitants during the main periods of demographic growth:

- a. The Halaf period of settlement extension: A long or bush fallow system held roughly constant would lead to the development of settlements on the high terrace.
- b. Late Chalcolithic and mid-late EB-MB period of growth: The population increase would have been accommodated by a diminished fallow interval combined with increased application of animal manures and possibly supplementary human and settlement-derived wastes in the later phases. By employing such a strategy, population could be accommodated within terrace III.

- c. Late Roman-early Byzantine period of peak settlement growth: Even allowing for manuring with settlement-derived refuse, carrying capacities could not be raised sufficiently to accommodate the entire population within terrace III. Settlements therefore developed on terrace I and they too raised cropping productivity by manuring. At the same time, during parts of the year grazing resources would have been limited to the flood plain, the terrace bluffs, and limestone uplands. The ensuing pressure upon grazing resources would therefore have impelled an increase in organization and control of pastoral resources.

It must be emphasized that the above model, for the sake of simplicity, relies upon the assumption that there was a uniform extension of a given fallow system away from the settlement. To be more realistic, such a model should incorporate a factor allowing for increased fallow away from the settlement as well as for the inclusion of areas of woodland, waste or rough pasture (see for example Hillman 1973b, p. 227). Also, during later periods of population decline (e.g., periods F, J, and M, fig. 6.3) it should not be assumed that fallow intervals were automatically increased. Instead the cultivated area may have merely decreased with more intensive cultivation being concentrated around the site. Finally, such periods of decline may also include an indefinable element of pastoral nomadism. Quite clearly, dynamic agrarian adaptations to changing population densities can be immensely varied and only a sketch of the possibilities has been made in these case studies.

In conclusion, it should be evident from these survey results that a multi-disciplinary viewpoint which integrates geomorphological and biological data with land use studies and detailed site recording provides a more comprehensive and interpretable result than the cataloging of site survey data alone. Furthermore, the adaptation of the techniques described herein, within a diachronic framework, can provide detailed insights into human responses to the vicissitudes of population flux which cannot be retrieved using other archaeological techniques.

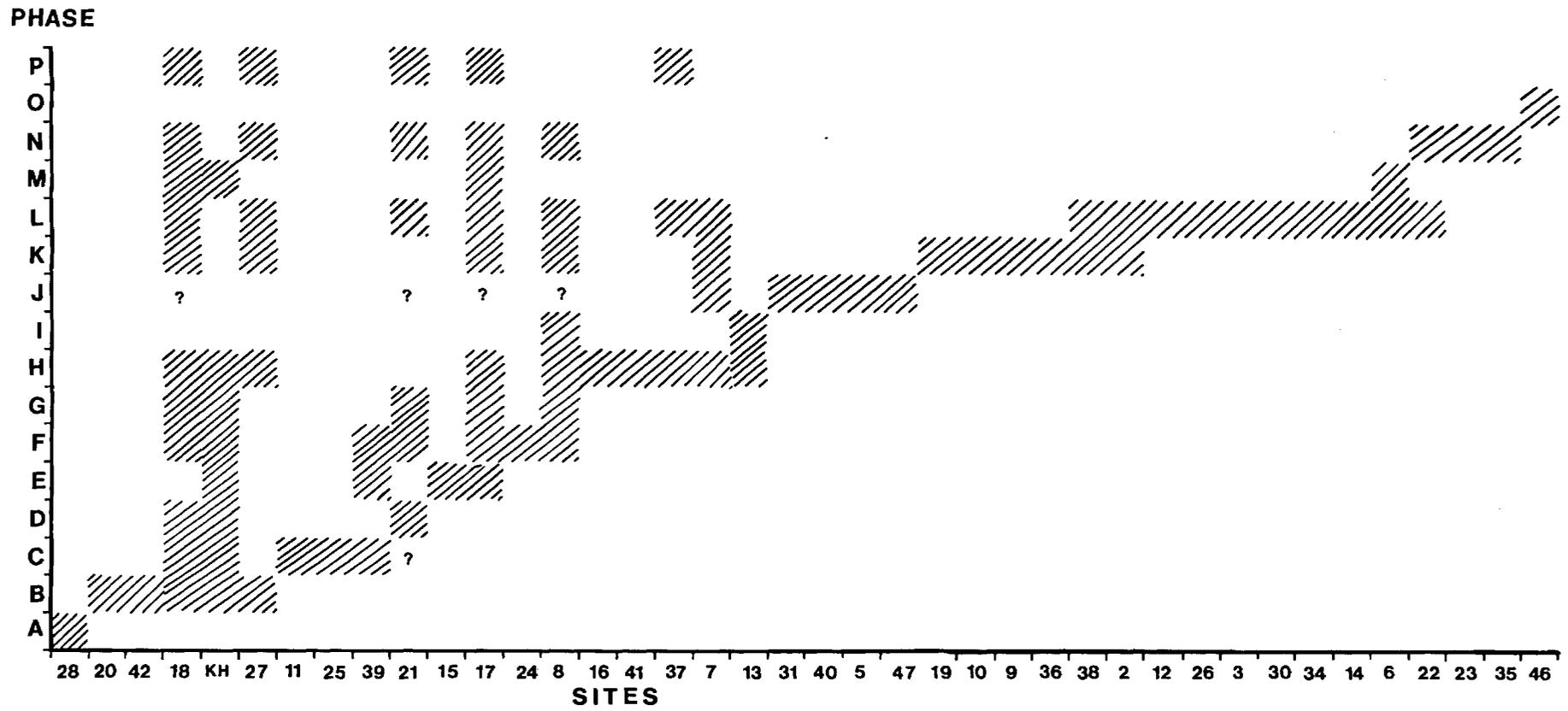


Figure 6.3. Occupation Phases for All Sites Surveyed.

APPENDIX A

SITE CATALOG

Site 2 (Höyük Mevkii)

METU: U50/8

Location (figs. 5.1 and 5.4): At west end of terrace III between Euphrates flood channel and terrace II; ca. 1 km west of Kurban Höyük.

Periods occupied: Hellenistic, Roman, Late Roman, Byzantine, Early Islamic(?).

Description: 250 m NE-SW; 200 m NW-SE; maximum height of mounding 7 m, but some of this is natural mounding, therefore estimated depth of occupation deposit 3 m. Altitude 405 m ASL. Area of mounding 1.46 ha, best estimate of occupied area from scatter of limestone foundation stones 3.92 ha.

Situated where encroaching bluffs of terraces I and II cause the valley to narrow into the defile of the Euphrates Gates. Developed upon colluvium aggraded on terrace III which forms low bench overlooking a thin strip of terrace IV and the river. Site bounded to west by active seasonal tributary of Euphrates and to east by broad, dormant valley. Defined by scatter of limestone foundation stones, low mounding and sparse pottery and tile. The last named is abundant in the northwestern corner of site where scatter includes wasters. This might be location of tile kilns.

A gravel fan is aggrading on terrace IV at the western end of site and the presence of this terrace adjacent to the site suggests aggradation rather than erosion has prevailed in the recent past. There is no evidence that the mound has been truncated by the Euphrates. The Euphrates is the nearest water source and there are no springs. Site 3 on the terrace II bluffs to the south is contemporary with Site 2 and appears to be part of the same settlement complex (fig. A.1). When surveyed in 1981, 80 percent of site was under wheat, 20 percent lentil—for annual changes see figure 2.7.

The site was tacheometrically surveyed at 1:2000 and 1:5000 in 1981 to produce topographic maps (fig. A.1). Pottery was sampled from the areas indicated by small letters on figure A.1, but no discernible trends were observed. Pottery is illustrated on figure B.19.

Site 3

Location (fig. 5.4): On spur of terrace II overlooking Site 2 which is 300 m to NW. Approximately 1 km SW of Kurban Höyük.

Period occupied: Late Roman-Byzantine.

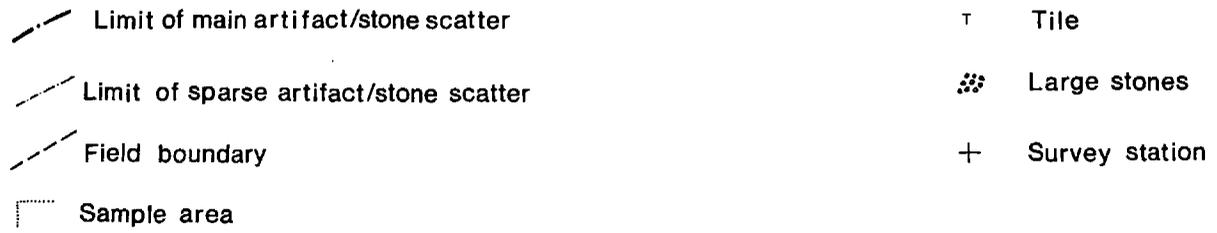


Figure A.1a. Key to Site Plans (for Figures A.1b to A.20).

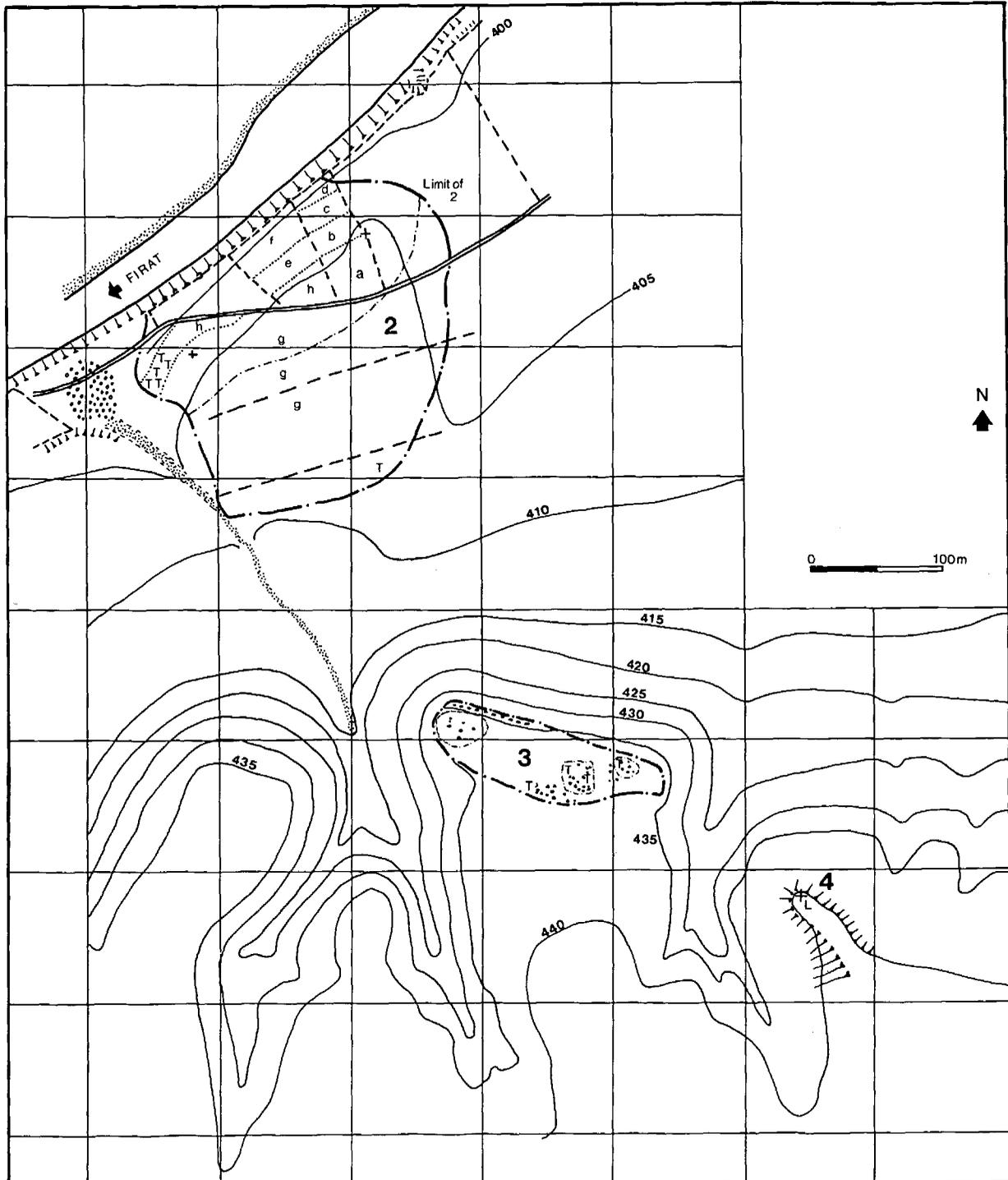


Figure A.1b. Sites 2 (Höyük Mevkii), 3, and 4.

Description: 175 m ESE-WNW; 50 m N-S. No mounding; estimated depth of occupation less than 0.50 m. 435 m ASL. Best estimate of occupied area from scatter of tile and foundation stones: 0.73 ha. Situated on eroded spur of terrace II. Sparse scatter of angular limestone foundation stones, tiles, and pottery enabled two or three buildings to be located (fig. A.1). The most prominent building is ca. 25 m square and close to site center. Buildings constructed on thin loam cover over terrace gravel at east end of site but rest directly upon limestone at western end. There are no springs and the river 450 m to northwest must have been water source.

Probably this was the upper component of Site 2. There is no evidence of fortification although a faint east-west depression along north edge of site in northwestern corner could indicate length of robbed out wall; there is no evidence of this elsewhere.

About 80 percent of site area is plowed. In 1981 pottery collection was from a clean surface following the harvesting of lentils. Surface of site is perforated by three old robbing pits within central building. The site was tacheometrically surveyed at 1:2000 and 1:5000 to produce a topographic map (fig. A.1). Careful searching provided sufficient pottery to support a late Roman-Byzantine date for occupation. Pottery is illustrated on figure B.16.

Site 4

Location (fig. 5.7): On terrace II ca. 250 m SE of Site 3.

Period occupied: Possibly Early Islamic.

Description: 70 m NW-SE; width of mound base 30 m. Situated on spur of reddish-brown colluvium projecting out over gravels of terrace II. Maximum height 4 m, 2 m of which is probably artificial. 442 m ASL. Forms artificial linear mound veneered by sparse scatter of large fragments of angular limestone to 30 cm. Disturbed by robbing pits at northwestern end. Constructed of soil and limestone. Although possibly a burial mound, its linear form and the presence of single possibly Abbasid sherd suggests it might have formed a barrier, customs post or marker on the route between Kurban Höyük khan and Yaslica. Site is not plowed. Tachometrically surveyed at 1:500 and 1:2000 (fig. A.1).

Site 5 (Kulluk Tepe)

Location (fig. 5.1): 1.90 km WSW of Kurban Höyük where terrace I is cut by river to form steep bluffs.

Period occupied: Late Second or Early First Millennia B.C.

Description: 120 m NE-SW; 80 m NW-SE fig. A.2a. Depth of occupation deposit approximately 1–2 m. 448 m ASL. Area: 0.67 ha estimated from abundant limestone scatter. Situated upon colluvium over gravel of terrace I and truncated to north by 60 m high precipitous bluffs which at present overlook low flood plain terraces but which has recently been trimmed by Euphrates. Flanked by very steep slopes of Euphrates tributaries to east and west to form prominent defensible site overlooking narrowing defile of the Euphrates Gates. Overlooks Site 19 which occupies similar spur ca. 400 m to west.

The site consists of a very low mounding and is mainly distinguished by an abundant limestone scatter representing eroded foundation stones. The site reached by a footpath up a

spur to the east (from Site 2) or an oblique animal track from the valley to the west. The Euphrates is the only water source. Although subdivided into pottery collection areas, the sampling produced no discernible patterns.

Site under wheat in 1981 except for northern, western and eastern slopes which always remain unplowed. Wheat made artifact visibility poor, therefore site recollected in 1982 when site under lentils. Pottery although sparse is distinctive and sufficient was collected for a good assemblage. Scatter included two wasters, one from eastern slope and a second at eastern end of area a. Scatter also included small fragments of vesicular basalt querns. Pottery is illustrated on figure B.12.

An occupation site, possibly originally fortified. Although there is no lower site today there may originally have been a lower site on flood plain between Sites 15 and 19.

Site tacheometrically surveyed in 1981 at 1:1000 and 1:5000 (fig. A.2a).

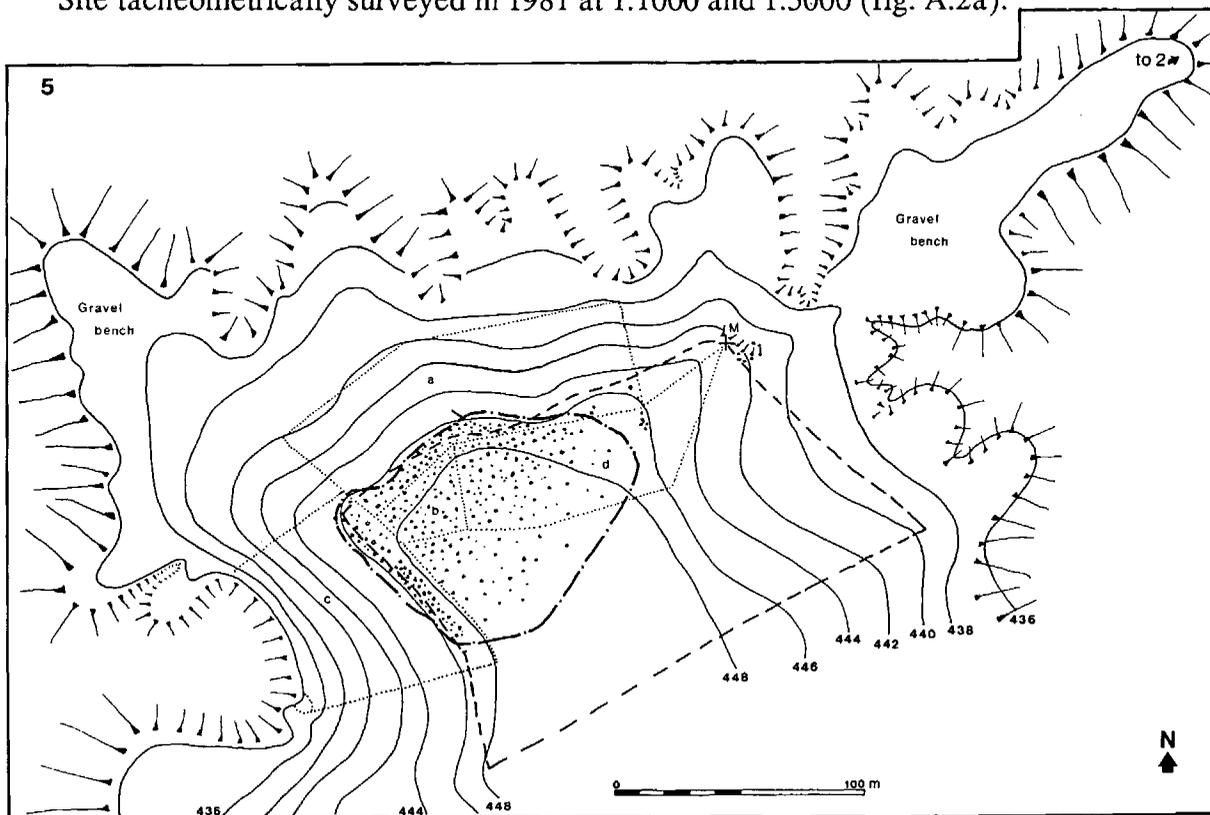


Figure A.2a. Site 5 (Kulluk Tepe).

Site 6 (Değirmen Harabesi)

METU: U50/9

Location (fig. 5.4 and 5.7): Along right bank of İncesu Deresi immediately S of Şaşkan-Cümcüme road and 900 m W of Şaşkan village.

Periods occupied: Late Roman-Byzantine and Early Islamic (ninth-tenth centuries A.D.).

Description: 150 m N-S; 130 m E-W; estimated one meter of occupation deposit. Altitude ca. 415 m ASL. Situated on low bluffs eroded by İncesu. Site occupies a low hill developed on Pleistocene age cobble fans of the İncesu. In turn, this hill is dwarfed by other low hills which block the view towards both Şaşkan mounds (Sites 7 and 8) and Kurban Höyük. The approximate extent of occupation was distinguished by low mounds of grayish soil littered

with abundant fragments of broken limestone plowed from foundations. The scatter also included occasional cobbles, stone quern fragments, pottery, and tiles. Pottery was collected in a single sample unit from the entire site.

Permanent pools of water in the bed of the İncesu Deresi must have provided the settlement with water and additional supplies could have come via an artificial channel (indicated by arrows on fig. A.2b) which collected water from the İncesu upstream. The latter source could have provided energy to turn millstones of a water mill located in the southwestern corner of the site (fig. A.2b) hence the local name Değirmen. Although architecture was absent, the anomalous group of gullies and disturbed ground and abundant limestone chips may belong to such a mill. A millstone of hard limestone conglomerate, 110 cm diameter and 15 cm thick was discovered in the northwestern corner of the site in a depression which could form an alternative mill location.

The site was mapped tacheometrically at 1:500; the elevation of the highest point was estimated at 415 m ASL from the 1:25,000 map. Pottery is illustrated on figure B.17.

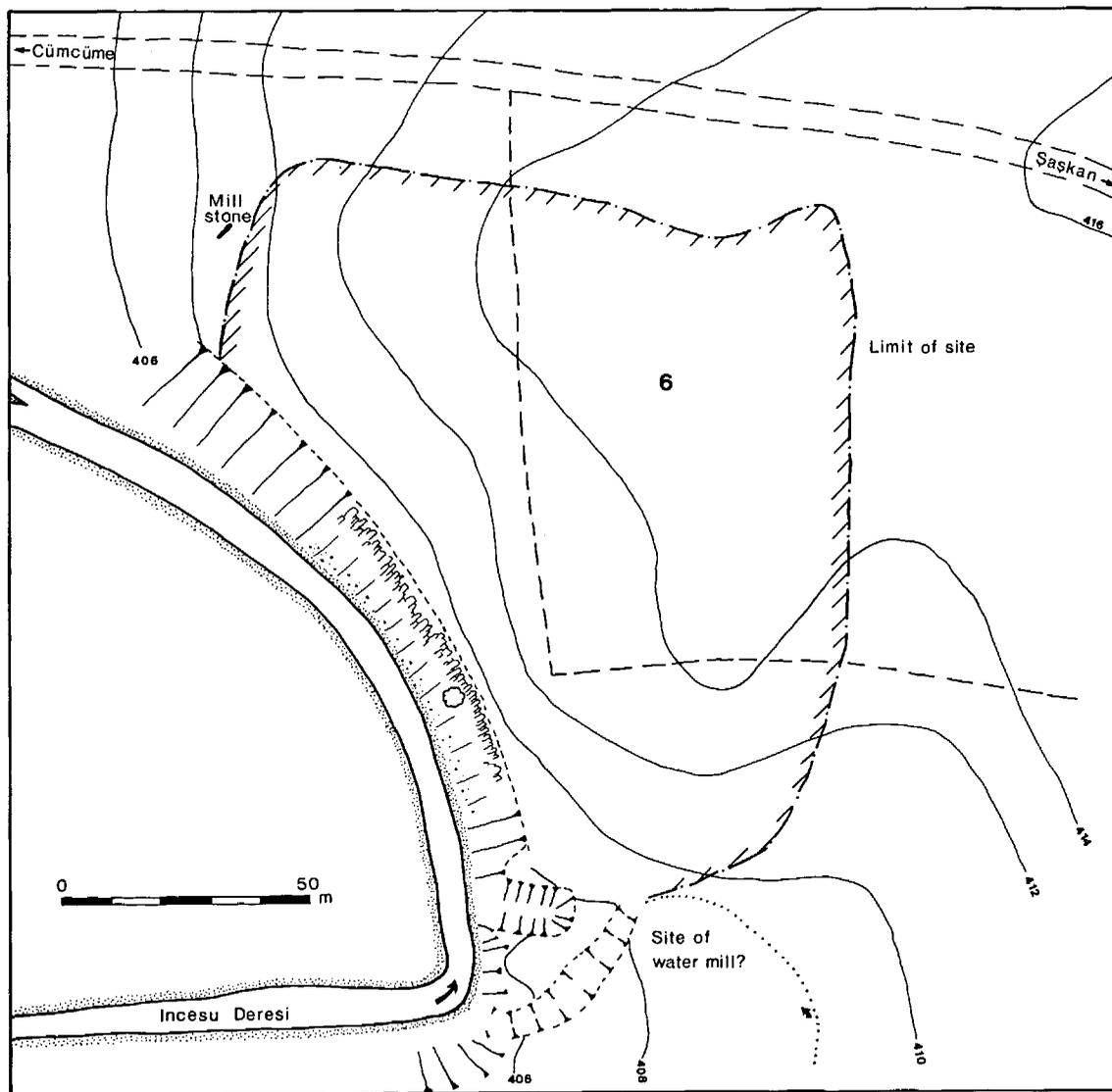


Figure A.2b. Site 6 (Değirmen Harabesi).

Site 7 (Şaşkan Küçüktepe)

METU: U50/17

Location (figs. 3.1, 4.3, 5.1, and 5.4): On terrace III overlooking the Euphrates River and due north of Şaşkan village.

Periods occupied: Neolithic(?) (see Site 28); EB-MB; Late Second-Early First Millennia; Seleucid-Hellenistic; Roman-Byzantine.

Description: The site consists of three elements (fig. A.3a):

1. The high mound—Şaşkan Küçüktepe: 70 m long; 40 m base width; height 10 m; total area ca. 0.24 ha. The mound summit is at ca. 425 m ASL. The mound is flanked by two broad gullies that allow access to the Euphrates River. Severe erosion by the river had truncated the mound so that today only 50 percent of its assumed original volume remains. Surface pottery indicates occupation phases of Iron Age Hellenistic, Roman, and late Roman-Byzantine date (see below).
2. A low mound situated below and to the south of high mound. Total area including the high mound measures 220 m ENE-WSW by 170 m NNW-SSE. The maximum thickness of occupation deposits is ca. 3.5 m. Area of mounding is ca. 3.04 ha; highest point 418.55 m ASL. This mound is surrounded by cobble-strewn low ground which conforms approximately to the inferred ground level (fig. A.4). The cobbles do not belong to the immediately subjacent geological strata and must have collapsed from buildings or a curtain wall which surrounded the lower settlement. Surface finds, which include abundant 'Roman' roof tiles, appeared to be confined to the late Roman-Byzantine period.
3. A broad ill-defined trough formed a roughly U-shaped enclosure around the above mentioned mounds. Total length ENE-WSW 650 m; width SSE-NNW 430 m; total area 15.54 ha. The thickness of occupation deposits was variable (fig. A.3b). This feature could only be defined in the field by detailed topographic mapping which indicated that the trough is continuous, ca. 60–70 m wide and 0.50–2 m deep. It is overlooked on the inside by a low curved ridge which rises to 2–3 m above the inferred land surface (fig. A.3a). This inner rise attains a maximum height in the south along the Şaşkan Köy track and is virtually continuous except where it merges into a plateau of deeper occupation deposits which included significant quantities of late second-early first millennia pottery in the northeastern part of the site. Where the depression intersects the bluffs it has been eroded into two steep-sided gullies which apparently have been eroded in the trough infill. The slopes of the northeastern gully are littered with stones and some Neolithic occupation debris which have weathered out of the occupation deposits of Site 28. The western portion of this site not only crosses the line of the enclosing trough, but could also be traced beneath Şaşkan Küçüktepe. Material of similar date also occurred along the outer flanks of the same depression within its southeast quadrant; these again appear to be outliers of Site 28.

The complex trough and bank topography is quite anomalous within the general northward-dipping colluvial apron. The trough appears to be a large defensive ditch fringed by internal earthworks of a defensive wall. A similar ditch was dug around the outer Roman

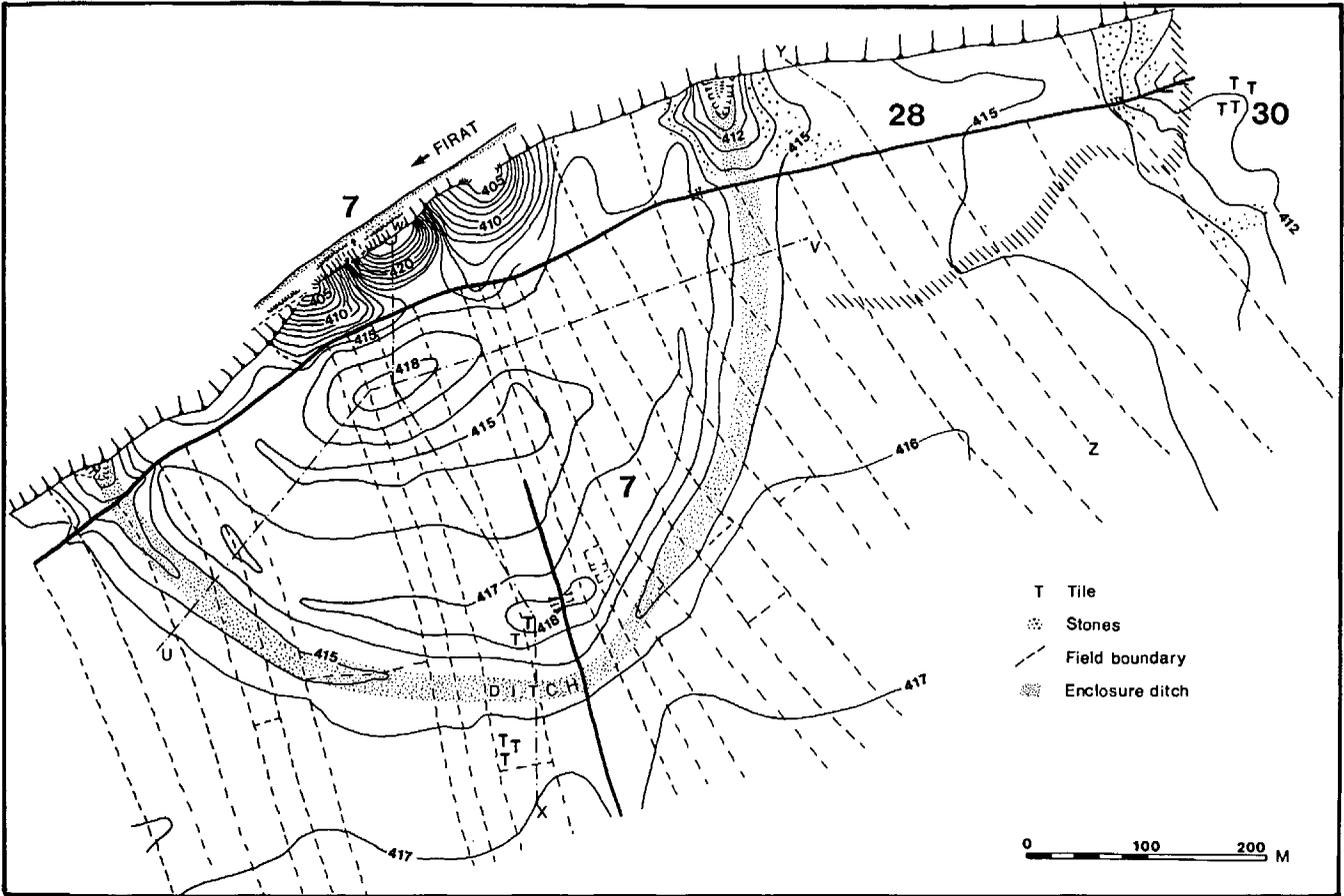


Figure A.3a. Sites 7 (Şaşkan Küçüktepe), 28 (Kumartepe), and 30.

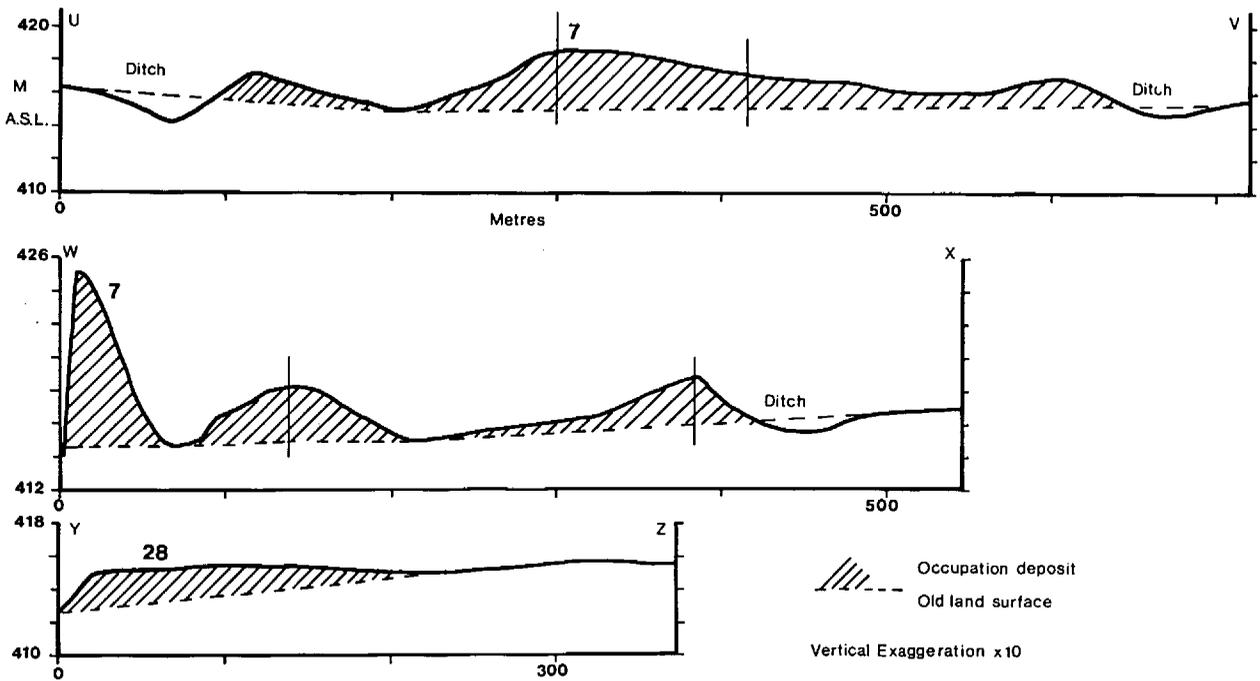


Figure A.3b. Topographic Profiles across Sites 7 and 28 Showing Position of Inferred Buried Land Surface.

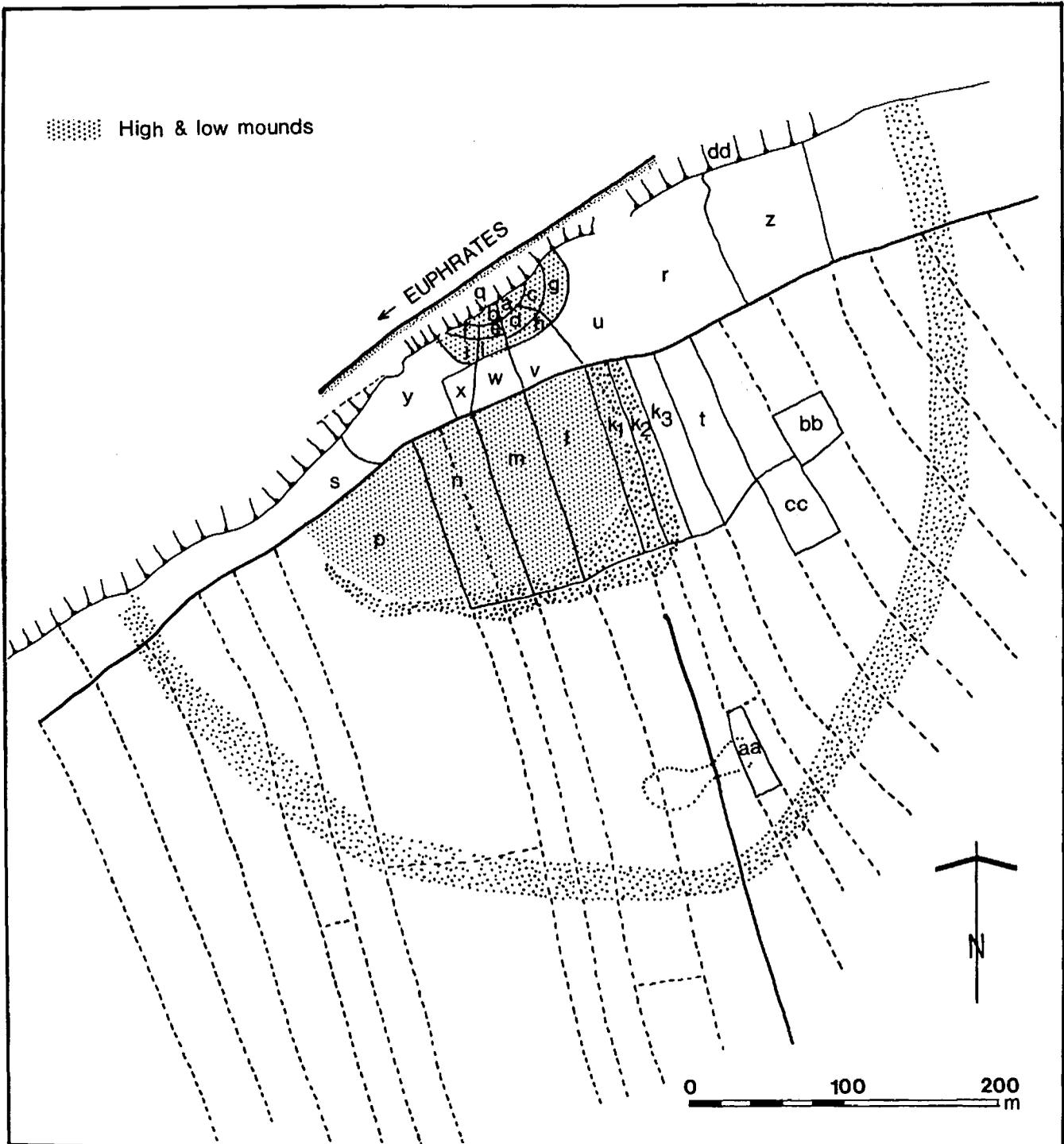


Figure A.4. Site 7, Sherd Sampling Areas.

town at Dibsi Faraj in Syria during the fourth century A.D. (Harper 1975, 328) although much earlier examples are known. The Site 7 feature, although not dated, is probably either late Roman-Byzantine or Iron Age in date.

The site is crossed by two tracks which form a T-shape along the site axes (fig. A.3a). The modern strip fields radiate to the east and west from the central NNW-SSE axis which leads toward Şaşkan village and eventually up the İncesu Deresi. This symmetrical configuration appears to have been laid out using the tracks as axes. If the E-W track is indeed Roman in date (see ch. 5), the fields in turn can be interpreted either as Roman in origin or to have developed from a preceding Roman landscape.

The site has been cut by the Euphrates which has actively trimmed almost vertical 20 m high bluffs and has truncated the mound to its present semi-ellipse form. The site rests upon reddish brown stone-free colluvium that overlies silt, sand, and gravel of the terrace III fluvial strata. The northward-dipping colluvial apron is cut by occasional north-south drainage valleys which are now quite stable. The colluvium is usually stone-free therefore the stones that litter the site surface must come from cultural contexts not from the geological substrata. Although seepages issue from the cliffs below the site, the original inhabitants probably either hauled water from the Euphrates or from wells within the settlement.

The site was tacheometrically surveyed at 1:500 (areas 1 and 2) and 1:1000 (Area 3). Pottery was collected from the sample areas indicated on figure A.4 as well as from the sample squares laid down during the intensive survey by G. Stein of the complex at Sites 7 and 28 (see Site 28, below). Pottery is illustrated on figures B.20–22.

Site 8 (Şaşkan Büyüktepe)

METU: U50/6

Location (figs. 3.1, 4.3, 4.4, 5.1, 5.4, and 5.7): On bluffs of terrace III overlooking Euphrates, ca. 500 m ENE of shallow valley draining into Euphrates. 2.20 km NE of Şaşkan village.

Periods occupied: Early EB; Mid-Late EB; EB-MB probably extending into full MB; Hellenistic; Roman-Late Roman-Byzantine; Medieval.

Description: Site consists of two main elements (fig. A.5):

1. The high mound: 180 m long and 80 m wide at base; 100 m long and 45 m wide on flat top. Height of occupation deposits of mound ca. 15 m. Total area of mound (at base) ca. 1.1 ha. At foot of mound immediately to the south a lower site occupies the area to the north and east of the pipeline and hollow way (fig. A.5). Total area of this small lower site and main mound is 2.25 ha. Elevation of mound summit is ca. 425 m ASL, i.e., 31 m above river level; elevation of base of mound is ca. 410 m ASL, i.e., 16 m above river level. The mound is undergoing erosion by the Euphrates which has exposed occupation deposits and walls over some 30 percent of the riverside slopes. Although few diagnostic finds were visible on this face the lowermost occupation deposits, which rested on reddish yellow colluvium, appeared to be early EB in date.

Access to the top of the mound is via a track winding around the west side of the mound which has cut into and exposed occupation deposits along a face 30 m long. No diagnostic finds came from this face.

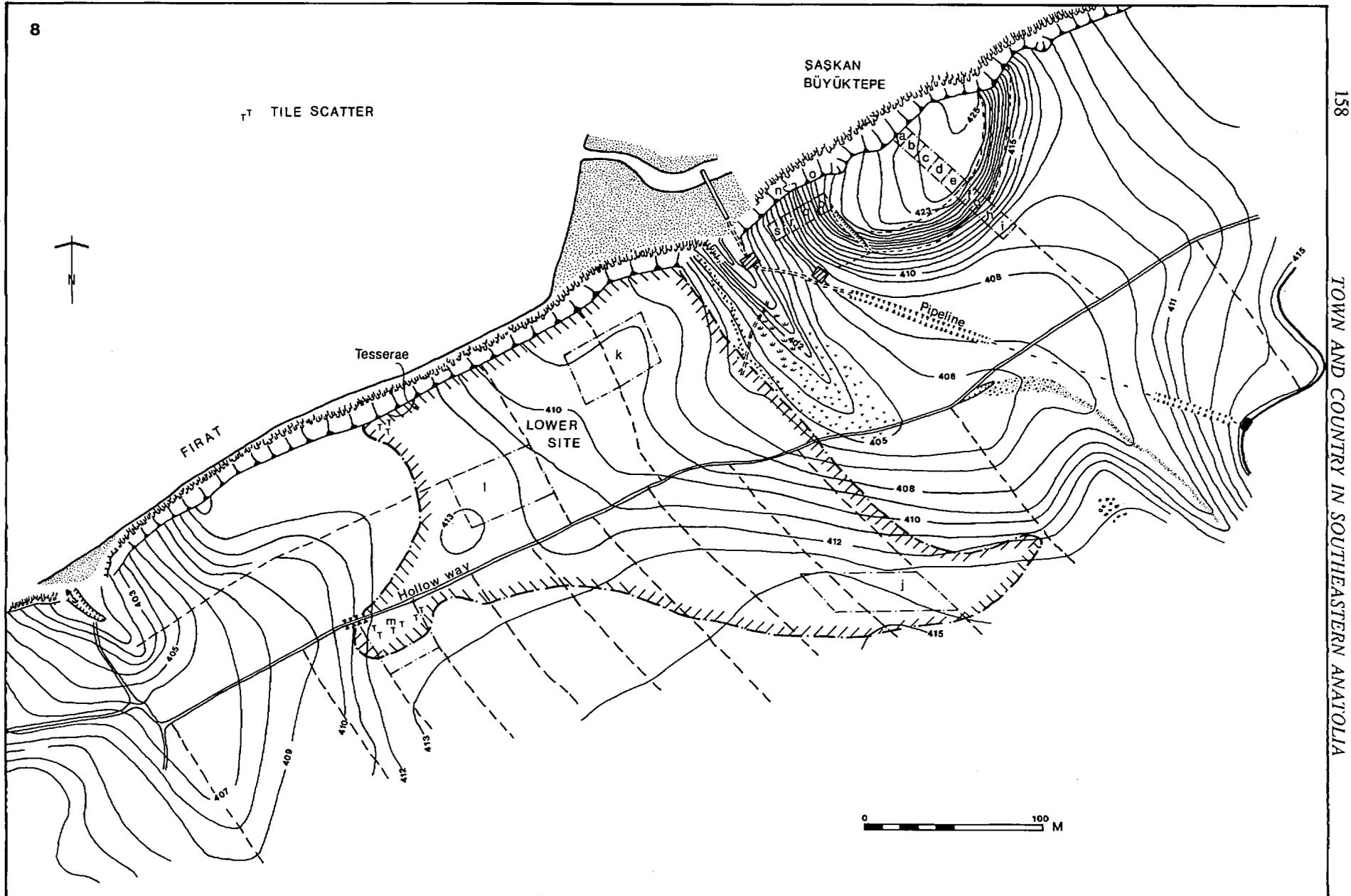


Figure A.5. Site 8 (Şaşkan Büyüktepe): General Sampling Areas are as follows: t: Southern and Western Slopes; u: Western Slope; v: Northern Slope; x: Terrace to South of Square i.

2. Lower settlement extending 390 m E-W and 210 m N-S and covering an area of ca. 4.20 ha. Height of mounding is uncertain but is estimated to be 1–2 m. Site consists of veneer of occupation deposits comprising gray-brown soil with abundant angular limestone fragments. Pottery occurs in variable densities but area m in the southwest has very little scatter except for frequent Roman-Byzantine roof tiles. The area to the north along the bluffs yielded several plain marble tesserae (fig. A.5) indicative of the presence of an important building—possibly a church or an administrative building. When collected in 1983 the entire area was under wheat which, having been heavily grazed, made pottery quite visible.

The total area of occupation: high mound plus lower settlement, covers some 500 x 260 m and 6.45 ha. The ‘hollow way’ which is probably of at least late Roman-Byzantine date runs through the long axis of the lower site (fig. A.5). Two valleys which flank the lower site to east and west allow access to the Euphrates.

Erosion by the Euphrates is evidently quite intense and at least 15 m of the mound’s width has been lost, probably since the twelfth-thirteenth centuries A.D. when occupation ceased. This erosion has not however been intensive enough to remove travertines which adhere to the limestone bluffs below the mound.

Water was either obtained directly from the Euphrates using the two valleys as access (note the recently abandoned irrigation pipeline also used this route) or from wells within the settlement. In addition a small spring may once have issued from the nearby marshy valley floor.

The entire area was topographically surveyed at 1:1000, the occupation areas being qualitatively defined by the extent of limestone scatter, gray soil, and artifacts. Pottery was sampled by means of total collection from 10 x 10 m sample squares a-i set NW-SE across the main mound and p-s on the western slope. Additional spot samples were taken from areas n and o where occupation deposits were eroding out of the mound. A further four sample areas: j—30 x 70 m; k—30 x 50 m; l—30 x 50 m, and m—30 x 30 m were fully collected for diagnostic sherds (see fig. A.5). Collections showed that the main mound contained all phases listed above and the mound top ceased to be occupied in the twelfth-thirteenth centuries A.D. The deposits of this period were found above characteristic late Roman-Byzantine wares which veneered the upper slopes of the mound. In contrast, the lower site was covered by late Roman-Byzantine ceramics except for a restricted area centered around k where a minor component of Medieval wares also occurred. Pottery is illustrated on figures B.23–25.

Site 9

Location (fig. 5.1): On bluffs of upper component of terrace III (i.e., IIIa) overlooking the Euphrates. Situated immediately east of a small valley with cattle drink 1 km west of Cümçüme.

Period occupied: Hellenistic-Roman.

Description: Length of occupation deposits ca. 55 m, width 10+ m, estimated area 550+ m². Site shows up as negligible mounding overlooking dry valley leading into Euphrates. Most clearly visible in eroded bluffs where 1.50–1.70 m of occupation deposits are visible

(fig. A.6a). There are no walls or built structures evident, but a single 4.80 m diameter pit at the east end of the site penetrated 3.50 m below the ground surface. The site is uncultivated. The surface pottery is sparse and the site was difficult to define.

The adjacent valley has accumulated 1–1.50 m of brown post-classical fill which includes sherds probably mainly washed from Site 9. The site is actively undergoing erosion by the Euphrates and its former area could not be estimated.

The site was measured by tape and the riverward face drawn. Pottery was collected from both the open cut and the site surface to the south but there was insufficient to demonstrate any spatial or chronological trends. Pottery is illustrated on figure B.14.

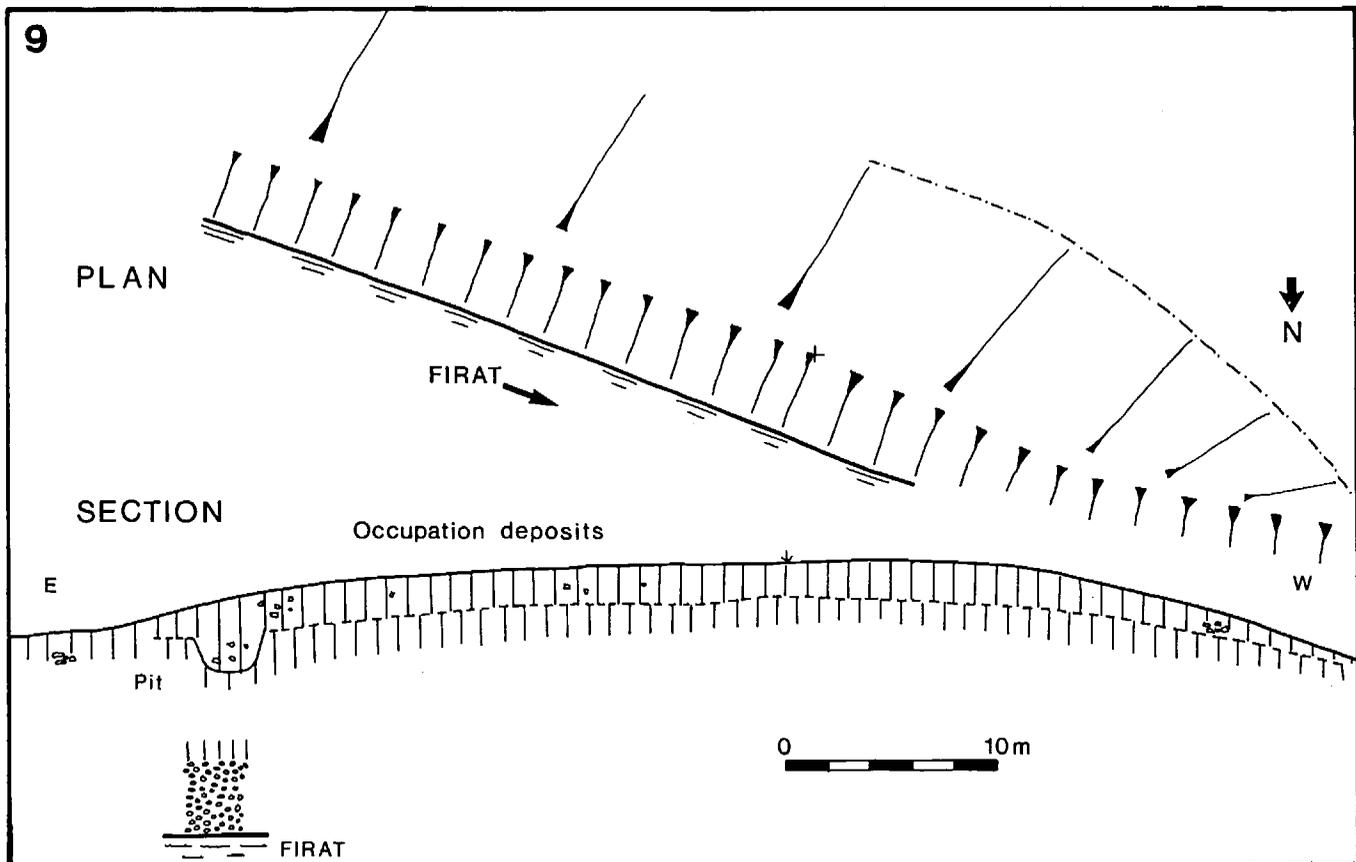


Figure A.6a. Site 9.

Site 10

Location (fig. 5.1): On bluffs of lower component of terrace III (IIIb) overlooking the Euphrates. Situated ca. 150 m W of above-mentioned dry valley (see Site 9) and ca. 1.20 km W of Cümçüme.

Period occupied: Hellenistic.

Description: Length ca. 36 m E-W along river cut, width uncertain but probably in excess of 40 m. Depth of occupation deposits 50–70 cm; area 1440+ m² (fig. A.6b).

Evidence from the site comprises two 70 cm wide wall foundations, 3.70 m apart at eastern end of site and, starting 5.50 m to the west of the walls a 26 m long plaster floor

continues at a depth of 50–70 cm to fade out eventually at the west end of the site (fig. A.6b). The area immediately above the exposed section was uncultivated, but ca. 40 m to the south common foundation stones and sherds of Hellenistic coarse storage jars have been plowed out. Although the site is undergoing some erosion this was impossible to assess quantitatively.

The site section was drawn along the bluffs. The sparse pottery scatter was collected from both ground surface and the eroding cut, but the small quantity precluded any spatial analysis. Pottery is illustrated in figure B.14.

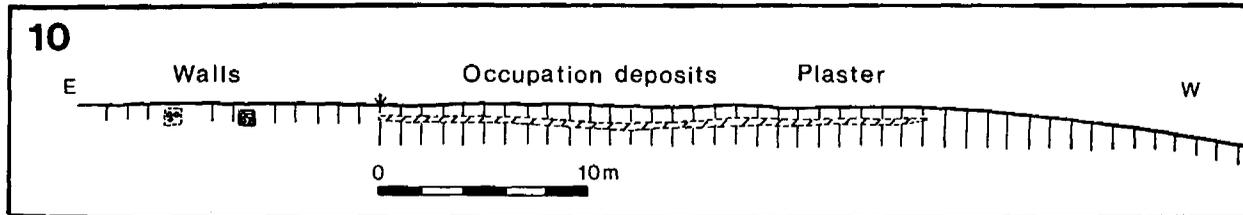


Figure A.6b. Site 10.

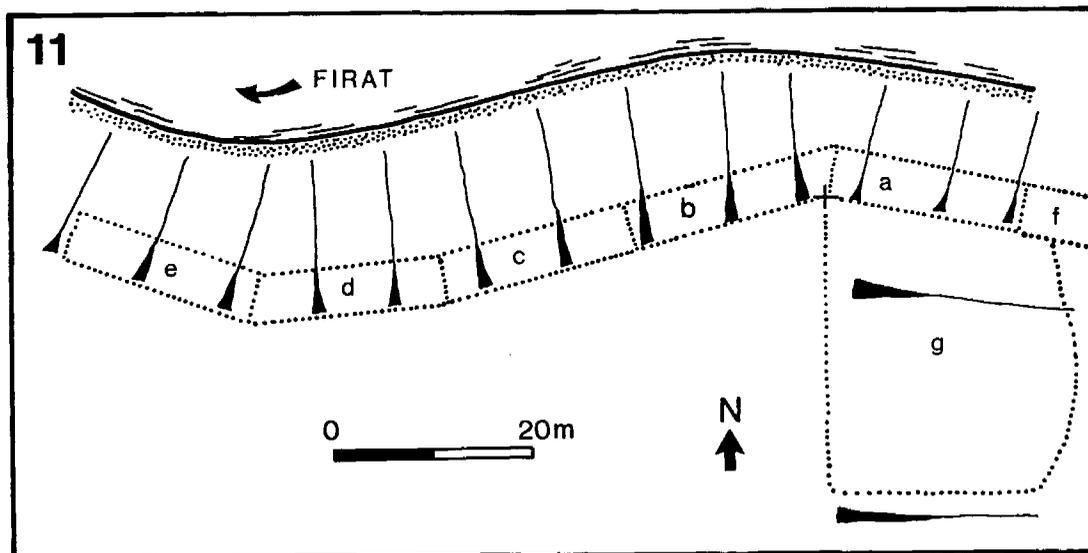


Figure A.6c. Site 11.

Site 11

Location (fig. 4.1): On bluffs of terrace IIIb overlooking Euphrates and immediately west of dry valley which runs between Sites 9 and 11.

Period occupied: Middle Chalcolithic, probably Ubaid.

Description: Approximately 100 m long artifact scatter extending along bluffs and an unknown distance south of the bluffs. Depth of occupation uncertain but lithics occur in top one meter of sediment. Scatter area 1000+ m². No mounding is obvious, and the only evidence of the presence of the site away from the bluffs is a sparse lithic scatter and

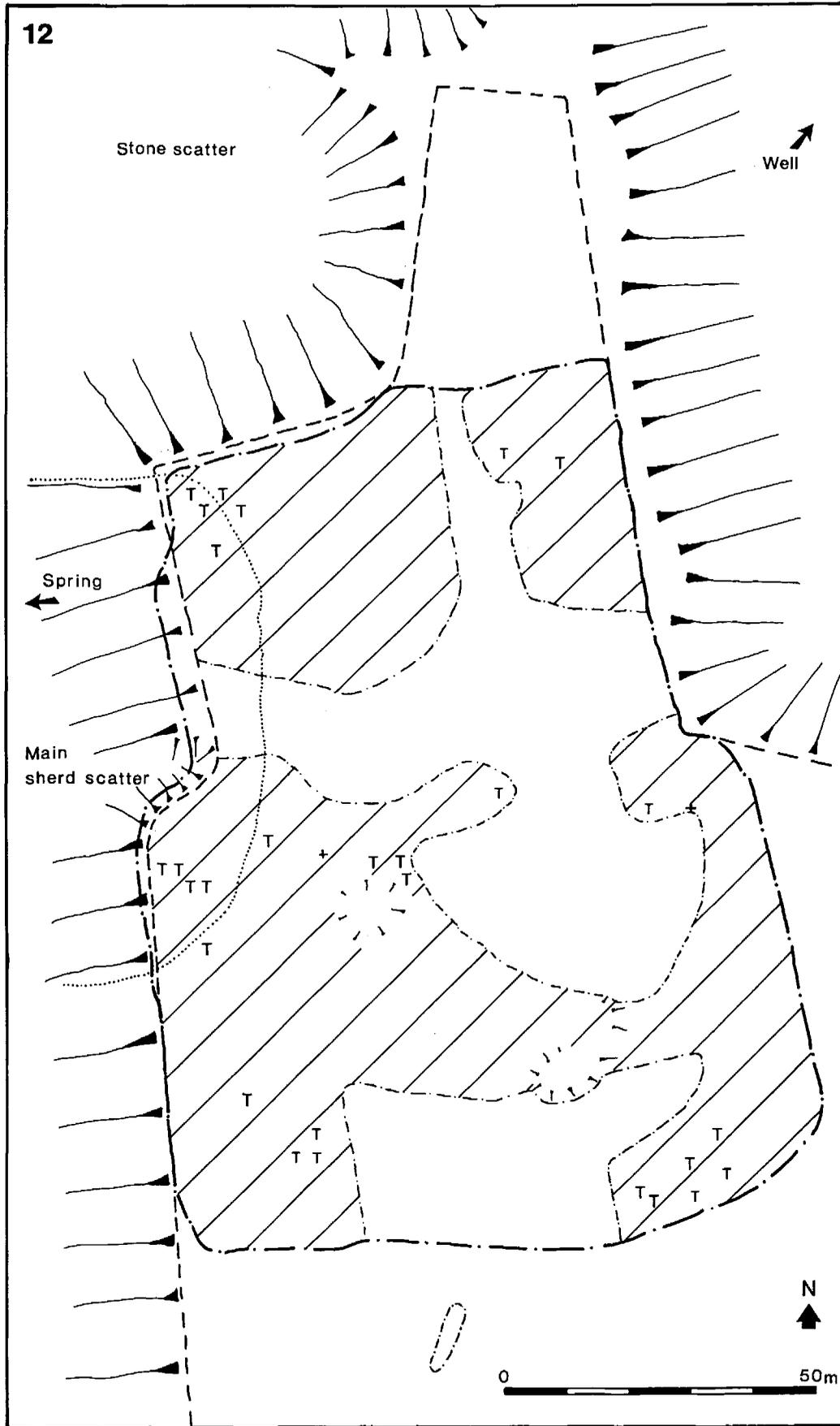


Figure A.7a. Site 12.

occasional sherds of coarse hand-made pottery in area g (fig. A.6c). The site is uncultivated, but sparse occupation scatter may extend into wheat and lentil fields to the south. No occupation deposits are evident and the soil on the site consists of 1.60 m of brown loam containing occasional CaCO₃ concretions between 1.0 and 1.6 m. Below 1.60 m the colluvium is hard.

A sketch map of the site was prepared and the site was divided into 20 m long by 1.60 m deep (i.e., down slope) collecting units a, b, c, d, e, and f along the bluffs (fig. A.6c) and g to the south. Chipped stone was frequent in each sample square but attained its greatest density in the west 15 m of a and the east 15 m of b. The scatter density declined markedly west of d. The pottery is illustrated on figure B.4.

Site 12

Location (fig. 5.4) On spur of terrace I, 2 km due S of Cümçüme.

Period occupied: Late Roman-Early Byzantine.

Description: 140 m N-S, 100 m E-W. Maximum estimated depth of occupation deposits one meter. Area of stone scatter from foundations 1.20 ha. A very low site distinguished by limestone scatter, roof tiles, and low irregular mounding. These features occupy three or four main areas which might have been building complexes varying from 25 x 30 m to 50 x 50 m in size. The buildings may have been grouped around an open space or courtyard visible just east of site center (blank area, fig. A.7a). Pottery is sparse within the site itself but becomes more common on the eastern and western slopes especially on the latter (fig. A.7a). The stone scatter included two fragments of well-dressed limestone, one of which belonged to a trough. Also observed were two fragments of basalt quern, one of a rotary quern. In addition a single marble/limestone tessera was found.

The site was surrounded by an extensive sherd scatter of 300–400 m radius to the ten sherds per 100 m² contour (ch. 5). This indicates the approximate extent of late Roman-Byzantine intensive cultivation. Today the site is cultivated under alternating crops of wheat and lentils.

The settlement was positioned on ancient limestone bluffs fringing a Pleistocene Euphrates channel of stage Ic (fig. 1.4) which capped terrace spurs to the north of the site.

Water issued as seepages from limestone below the palaeochannel gravels. That to the east is tapped by a shallow rock-cut well which is probably contemporary with the site's occupation.

The site was mapped at 1:500 using a prismatic compass from a 60 m long base line. Collection was from the entire surface, but most pottery came from the western slopes as indicated (fig. A.7a). Pottery is illustrated on figure B.15.

Site 13 (Kuştepe)

Location (fig. 4.3): On isolated conical limestone outlier of terrace I bluffs 1.70 km SE of Cümçüme.

Periods occupied: EB-MB Transition and MB.

Description: The only evidence of occupation occurs on an isolated hilltop measuring 65 m NE-SW by 15 m NW-SE. The hill top is veneered by a very sparse scatter of sherds, most

of which are not diagnostic. Sherds are more abundant on the slopes, especially to the south and southeast of the site (fig. A.7b). Indirect evidence of structural remains comes in the form of robbing pits on the hill top. These allow the position of a possible fortification curtain wall to be inferred. A group of flag stones 22 m SW of the site center may indicate the position of a floor. The site is on the border of the main Cümçüme cultivation on terrace III within the Cümçüme vineyards.

The hill top is a moderately stable surface covered in loam and terrace gravel. In contrast, the hill sides are heavily eroded especially in the southwestern sector (stipple, fig. A.7b) where gullied white limestone crops out. The valley immediately to the west has accumulated 3+ m of aggraded sediments containing apparent EB-MB sherds. It is therefore possible that a lower settlement once situated to the west of the hill top site has been covered by aggraded sediment. The nearest springs are situated a ten minute walk (ca. 400 m) in a valley to the south of the site. These reasonably copious springs may once have provided water slightly closer to the site in the third-early second millennia B.C.

The site's location overlooking a long, straight valley trending directly towards Arikök (Site 17) is an obvious road between Şaşkan-Samsat and Arikök and the south.

The site was mapped at 1:500 by extending measured radial lines from point P near the site center. Two collection areas were employed: 13 (general scatter) and 13a on the southern slopes which yielded the bulk of diagnostic pottery. Pottery is illustrated on figure B.10.

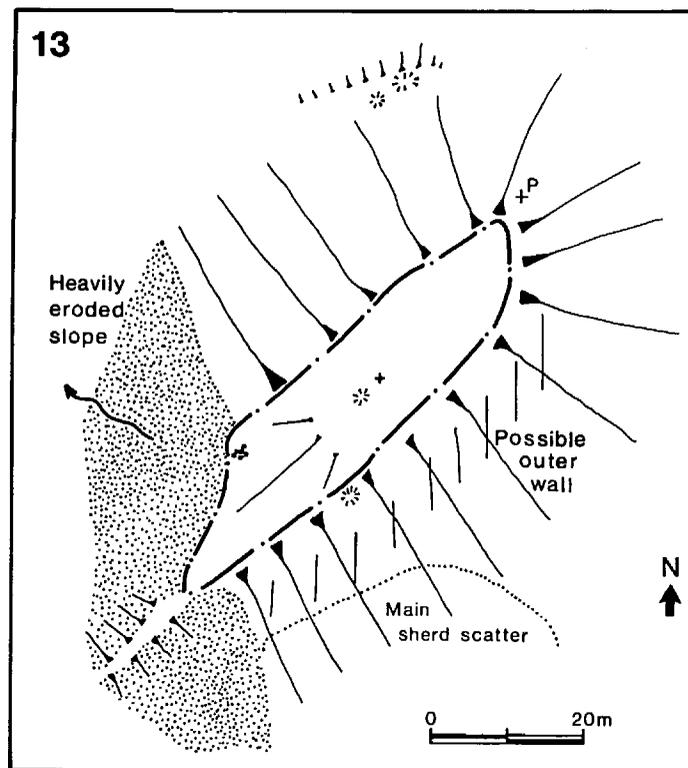


Figure A.7b. Site 13 (Kuştepe).

Site 14 (Dokuzköy Harabesi)

METU: U50/11

Location: (figs. 5.4, 5.6, and 5.7): On terrace I overlooking dry valley leading north towards Kurban Höyük 2.50 km SE of Kurban Höyük and 2.70 km SSW of Cümçüme.

Period occupied: Late Roman-Byzantine.

Description: 165 m N-S, 70 m E-W for scatter of limestone foundation stones and artifacts. Area ca. 0.92 ha. Low central mounding covers ca. 0.25 ha and rises to an estimated height of one meter. Artifacts are rare over the main area of site, but become quite common on east-facing slopes of dry valley. This scatter included one limestone/marble tessera. A track leads to the north down towards the Dokuzköy spring.

The site is plowed and alternatively under wheat and lentils. The settlement developed on limestone bluffs fringing a Pleistocene Euphrates channel course (stage Ic) which stretched to the north. Soils were thin on the limestone but deepened considerably to the north over the palaeochannel. The nearest water source is below Dokuzköy some 450 m to the north (fig. A.11) and was reached via the above-mentioned track. Although merely a seepage today the substantial cliff behind the spring suggests that the feature was carved out in antiquity by vigorous spring sapping. Like Site 12, the site was surrounded by an extensive manuring scatter, in this case of ca. 250 m radius. A secondary scatter, 700 m to the NW may have centered on an outlying building the remains of which are hinted at by a sparse limestone scatter.

Site mapped by prismatic compass triangulation from a 60 m measured baseline. Sherds were mainly from the east-facing slopes and several collections were made in order to gain a good range of diagnostics. Pottery is illustrated on figure B.15.

Site 15

Location (fig. 4.1): On left bank of İncesu Deresi ca. 400 m S of its confluence with the Euphrates.

Period occupied: Late Chalcolithic A (Uruk phase).

Description: Scatter of pottery and occasional fragments of limestone foundation stones plowed out of the subsoil and covering an area of ca. 50 x 50 m. Depth of occupation deposits could not be ascertained and estimated area of 0.25 ha is very approximate. Situated on İncesu gravels on top of steep slopes which lead down to İncesu. This perennial stream is ca. 100 m away and provides the nearest water source.

The site was plowed and under lentils in 1981 and cereals (burnt) in 1982.

Because of its ill-defined scatter the site could not be mapped, but because of the importance of the ceramics several sherd collections were taken in 1981, 1982, and 1983. Pottery is illustrated on figure B.6.

Site 16 (Eskihayman Tepe)

Location (fig. 4.3): Situated on narrow limestone spur projecting north from heavily eroded limestone hills. 2 km SE of Cümcüme and 1 km W of Şaşkan; 4 km E of Kurban Höyük and 3 km SW of Şaşkan Büyüktepe.

Period occupied: EB-MB Transition.

Description: 55 m long, 35 m wide and occupying an area of ca. 0.15 ha. Depth of occupation deposit was difficult to estimate, but a section exposed on the north end of ridge

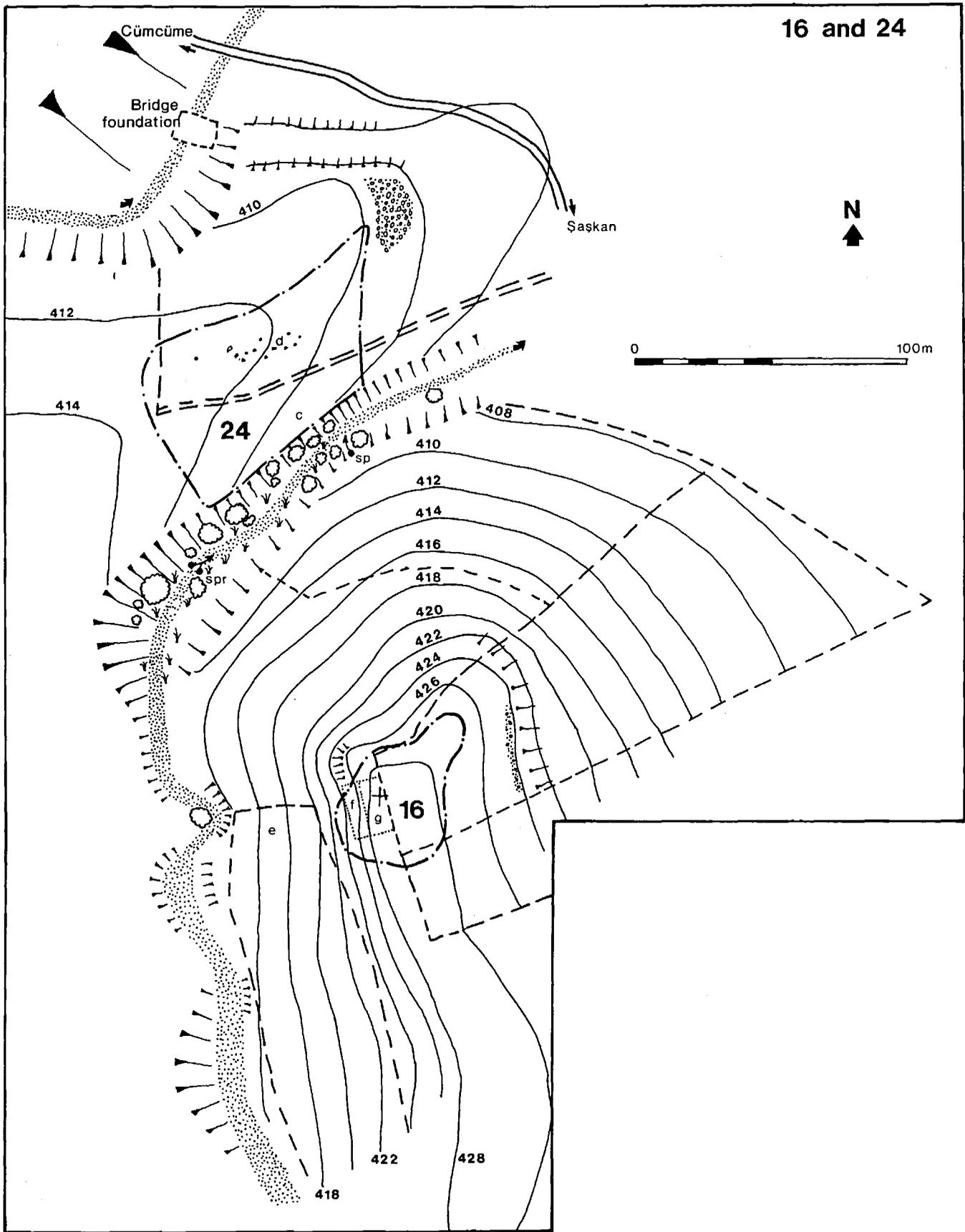


Figure A.8. Sites 16 (Eskihayman Tepe) and 24.

suggests one meter or a little less. Site mainly comprises a sparse pottery scatter and occasional limestone fragments from plowed out wall foundations.

The top of the mound is intermittently plowed under cereals and lentils whereas the steep west-facing slopes remain unplowed. Situated on a narrow ridge capped by limestone-rich İncesu gravels. A copious spring and several seepages issue from the valley floor 10 m to the N of the site (fig. A.8).

Although the extant site is small, the presence of a subsidiary settlement on the lower slopes between Site 16 and the spring cannot be discounted. If present, it must now be buried beneath a significant accumulation of later sediments. The site's position, roughly midway between Şaşkan Büyüktepe and Kurban Höyük, suggests that it developed close to the mutual catchment boundary of the two third millennium settlements.

The site was mapped with Site 24 using tacheometry. It was plotted at 1:1000 and sample areas were indicated as follows: Site 16a, top of mound, f and g western slopes and e lowest western slopes. No spatial or chronological trends were apparent. N.B. Site 24 to the north was originally included with Site 16 and was allocated areas 16 b, c, and d. Pottery is illustrated on figure B.9.

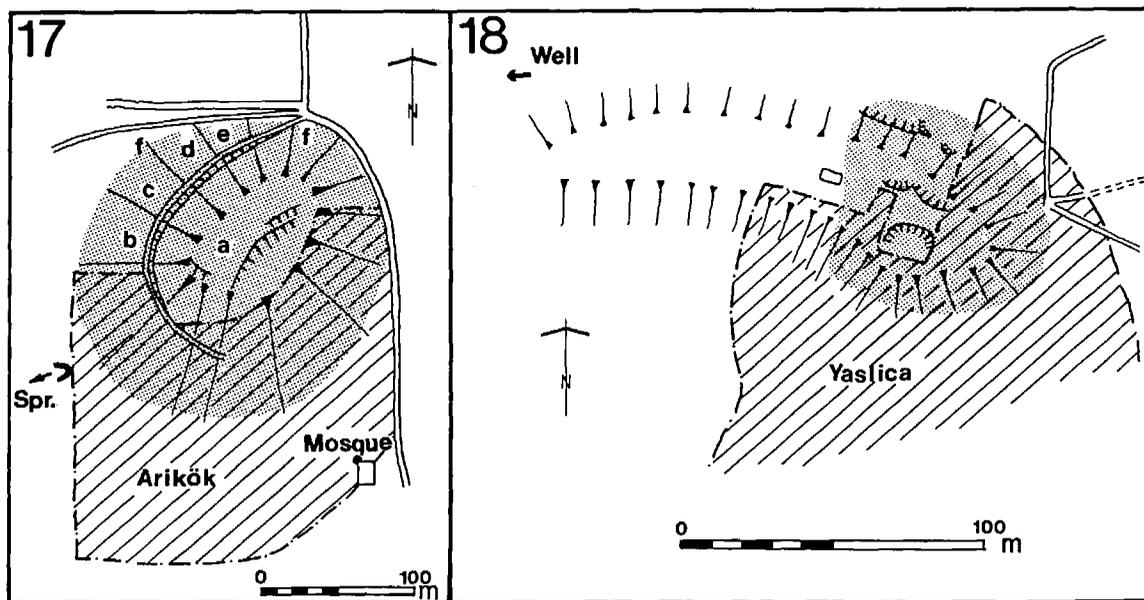


Figure A.9a, b. Sites 17 (Arikök Höyük) and 18 (Yaslica Höyük).

Site 17 (Arikök Höyük)

Location (figs. 3.1, 4.1, 4.3, 4.4, 5.1, 5.4, and 5.7): Prominent mound in village of Arikök (fig. A.9a) also known as Salköy, 8.25 km S of Cümcüme, 8 km SSE of Kurban Höyük.

Periods occupied: Late Chalcolithic A, Early EB, Mid-Late EB, EB-MB, Late Iron Age(?), Hellenistic, Roman, Late Roman-Byzantine, Early Islamic (ninth-tenth centuries A.D.), Medieval (ca. twelfth-thirteenth centuries A.D.).

Description: N.B. site only visited briefly; all measurements are approximate. The above-mentioned periods of occupation are based upon reliable ceramic data, but periods not mentioned do not necessarily indicate phases of non-habitation.

Elongated mound 200 m long, 130 m wide, and an estimated height of 17 m. Villagers have excavated small robbing trenches on top of mound and a track has cut a spiral section around the mound's western slope. There is no evidence of a lower site, but this may be below the modern village (fig. A.9a).

Site located within broad dry-farmed alluvial basin. Water obtained from spring approximately 100 m SW of mound.

Only a sketch map (fig. A.9a) of the mound was prepared. The mound was subdivided into the following collection units: a) top of mound; b-f at the following heights above the mound base: b) 10–12 m, c) 7–10 m, d) 4–7 m, e) 2–4 m, f) base of northern and northwestern slopes. Mid-Late EB pottery is illustrated on figure B.8. Counts of diagnostic pottery are given in table B.2.

Site 18 (Yaslica Höyük)

Location (figs. 3.1, 4.1, 4.3, 4.4, 5.1, 5.4, and 5.7) In northwestern sector of village of Yaslica, 7.30 km SW of Cümcüme, 5.50 km SW of Kurban Höyük.

Periods occupied: Halaf, Middle Chalcolithic (Ubaid), Late Chalcolithic B (pre-Uruk), Early EB, Mid-Late EB, EB-MB, Iron Age?, Hellenistic, Roman, Late Roman-Byzantine, Early Islamic (ninth-tenth centuries A.D.), Medieval (ca. twelfth-thirteenth centuries A.D.).

Description: N.B. site visited briefly; all measurements are approximate. The periods of occupation are based upon reliable ceramic data, but phases not mentioned do not necessarily indicate periods of non-habitation.

Small mound situated at eastern end of low limestone ridge (fig. A.9b). Length of occupational mounding ca. 70 m NW-SE, width ca. 50 m. Estimated height of mounding 8 m. Heavily disturbed by robbing pits on the top and on north-facing slope of mound. The latter exposed Chalcolithic material in the mound core. A single rectangular tomb (now plundered) had been cut in the limestone ridge ca. 100 m W of the site. Any lower site which might exist is probably below the modern village.

A spring occurs ca. 500 m W of the village which today also relies upon a well.

Only a sketch map has been prepared (fig. A.9b). Although the pottery was originally subdivided into four collection areas, each area was found to yield such mixed pottery that all pottery was amalgamated. Pottery is illustrated on figures B.5, B.26, and B.27. Counts of diagnostic pottery are given in table B.3.

Site 19 (Kaya Tepe)

Location (fig. 5.1) At east end of Euphrates gorge where Euphrates valley narrows down to 1.5 km. On bluffs of terrace II overlooking the Euphrates; 2.20 km WSW of Cümcüme on opposite bank of dry valley from Site 5.

Periods occupied: Seleucid-Hellenistic. In addition, one sherd Mid-Late EB and two of EB-MB were found, but they were insufficient to demonstrate significant third millennium occupation.

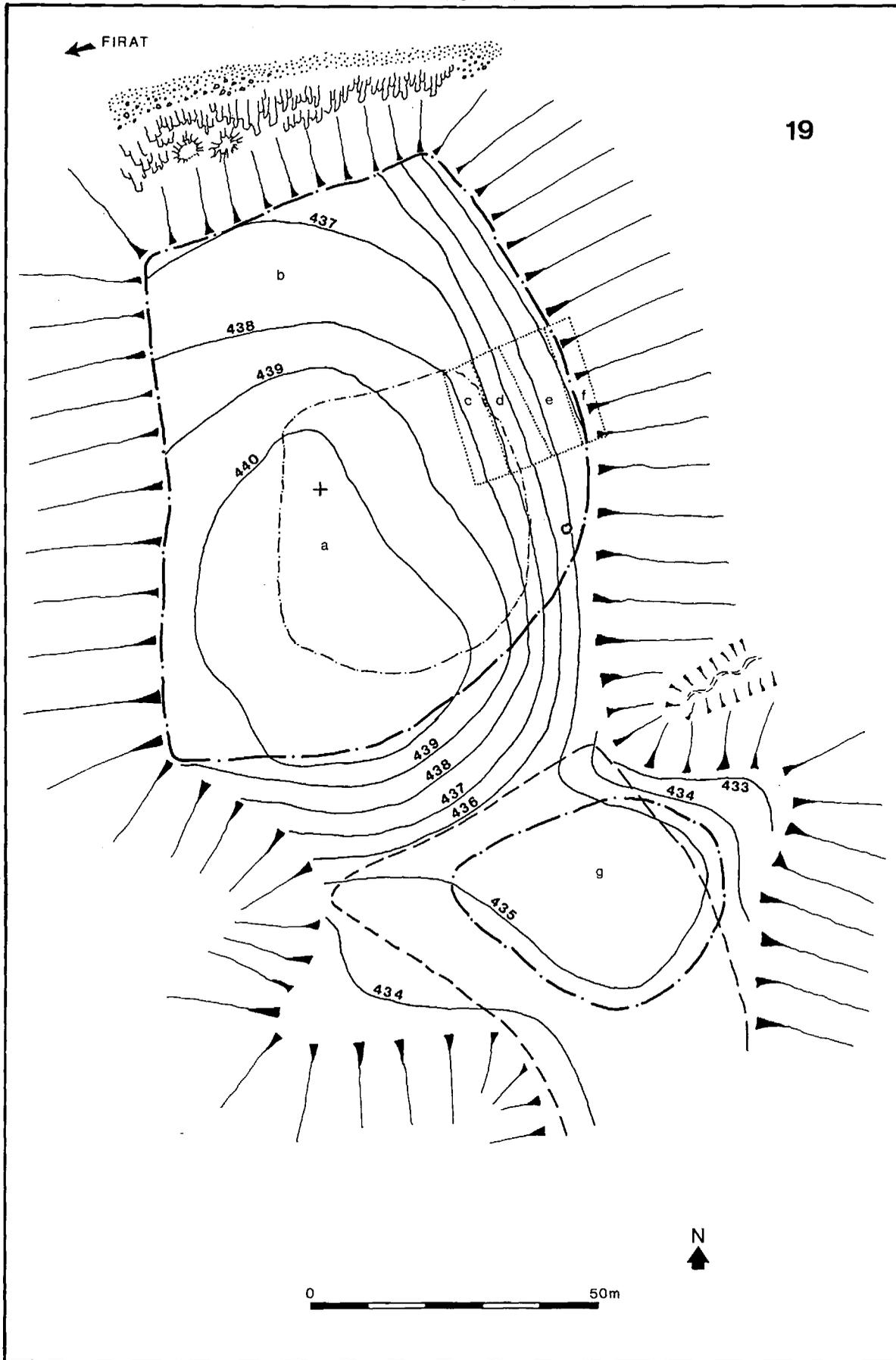


Figure A.10. Site 19 (Kaya Tepe).

Description: Area of low mounding and a scatter of artifacts and stones on a spur of terrace II overlooking the Euphrates. Length 95 m, width 80 m, approximate depth of occupation deposits 2 m. An area of 0.76 ha includes the outlier of g (fig. A.10). A dense scatter of foundation stones defines a slightly smaller area measuring 50 x 44 m. The gray-brown soil of the mound appears to include occupation deposits, although less cultural debris was visible in 1984 than when the site was discovered in 1981. Access to the Euphrates, which must have provided the settlement's water supply, was via the small gully to the SE of the site.

The site is plowed most years and in 1981, when the site was first collected, the eastern half was under lentils whereas the western half was abandoned.

Situated on a terrace II spur and fringed by vertical bluffs to the north and very steep slopes to east and west. On the terraces some 400 m S a litter of limestone blocks and a partly exposed wall within an area otherwise devoid of signs of occupation suggest the presence of tombs.

Although the bluffs are undergoing riverine erosion there is no evidence that any of the site has been lost. Originally however a lower site may have existed on the flood plain beneath, but this would subsequently have been erased by the Euphrates. This is a common situation along the Syrian Euphrates and the presence of three third millennium B.C. sherds on the site hints that a third millennium site may once have existed on the flood plain.

The site was mapped tacheometrically at 1:500. Pottery sample areas were as follows: a) top of site; b) northern lower terrace; c, d, e, and f, 20 x 60 m sample rectangles on the eastern slope. Area g to the south probably formed an outlier of occupation. Pottery is illustrated on figure B.14.

Site 20

Location (fig. 4.1) On terrace I, 2.20 km SE of Kurban Höyük and 200 m N of Site 14.

Period occupied: Halaf.

Description: Fragmented site on three spurs of terrace I overlooking a large dry valley and the abandoned village of Dokuzköy. Overall length 210 m, maximum width 80 m; area of surface artifact scatter, plowed out foundation stones, and plowed out artifacts 0.9 ha. The spur extremities, which are unplowed, have a 'lag' of artifacts scattered across the surface. These included both painted Halaf pottery and abundant lithics. To the west, that is into the colluvial terrace slope, artifacts decrease in quantity. Plowing in later years however did throw up large foundation stones, a door socket, and a large basalt saddle quern (fig. A.11). Before plowing, the harder, painted Halaf wares occurred in higher proportions than chaff and grit-tempered coarse wares, but after plowing the latter types appeared to dominate. Because of this differential preservation of pottery wares, the quantitative analysis of sherds from the sample squares (see below) must be treated with caution. From the abundance of building debris it is evident that a significant number of subsurface buildings remain. The site was mainly under wheat in 1981 and sesame in 1982. The site is on gravel of the Euphrates palaeochannel Ic. The colluvial slopes above the site (i.e., to the west) consist of reddish-yellow loams washed originally from the hills. It is not clear whether these have been partly washed over the occupation levels but if so, the western boundary of

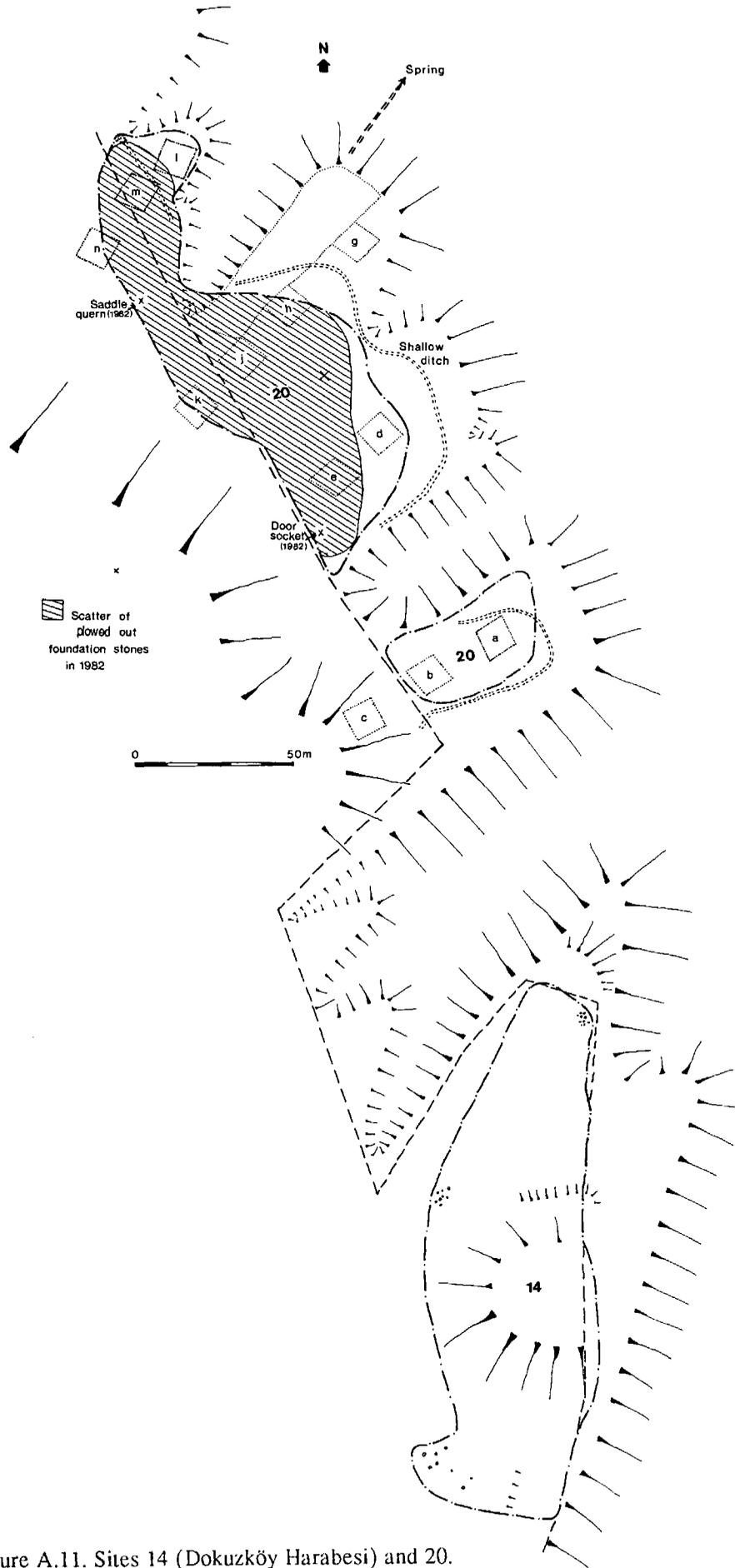


Figure A.11. Sites 14 (Dokuzköy Harabesi) and 20.

the site has been underestimated. The thin lag of artifacts on the gravel spurs indicates that the site is gradually being eroded away by slope-wash therefore the above estimate of site area must be taken as a minimum.

The site is within 200 m of a spring which is marked by a low limestone cliff overlooking a low rock bench. This is clearly an ancient feature and was almost certainly in existence in Halaf times when its discharge must have been higher.

The site was mapped by prismatic compass triangulation in 1981 and 12 10 x 10 m sample squares were set out (fig. A.11). Additional collections of the entire site were made in seasons 1982, 1983, and 1984 to provide a representative collection of the better quality wares. The pottery is illustrated on figures B.2 and B.3.

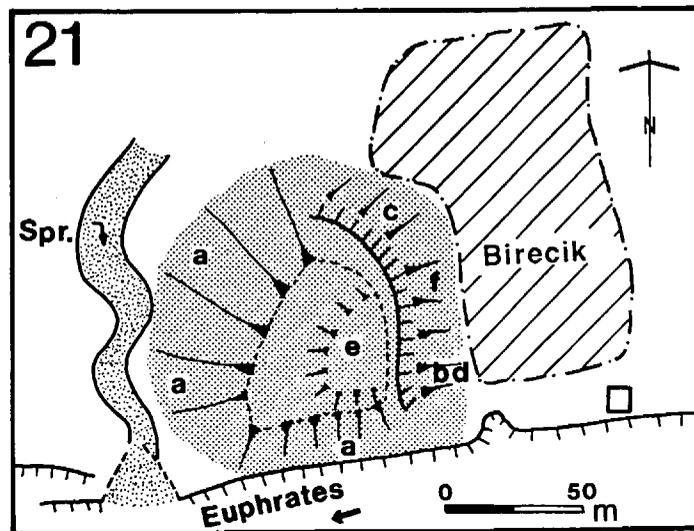


Figure A.12. Site 21 (Birecik Höyük).

Site 21 (Birecik Höyük)

METU: U50/1

Location (figs. 3.1, 4.1, 4.3, 4.4, 5.1, and 5.7): On right (northern) bank of Euphrates opposite Site 2 and 1.50 km NW of Kurban Höyük.

Periods occupied: Middle Chalcolithic, Late Chalcolithic B, Early EB, Mid-Late EB, Iron Age-Hellenistic (possibly), Late Roman-Byzantine, Medieval (twelfth-thirteenth centuries).

Description: A small mound ca. 120 m diameter and, according to Özdoğan, consisting of about 15 m of archaeological deposits. Situated in southwestern corner of the small village of Birecik and overlooking the Euphrates. Also within 100 m of a small spring issuing from a Euphrates tributary. The eroded southern face of the mound indicates that the present trend of erosion is towards the north. The base of the mound is some 7 m above summer river level. Site visited briefly and only a sketch plan was made (fig. A.12). The following sample areas were allocated: a) lower slopes; b) lower eastern section; c) upper northern section; d) upper eastern section; e) top of site; f) lower eastern slope (fig. A.12). Counts of diagnostic pottery are given in table B.4.

Site 22 (Tellan Harabesi)

METU: U50/5

Location (fig. 5.7): Near right bank of Euphrates 1.40 km SE of Berfirat village and 1 km N of Cümçüme.

Periods occupied: Late Roman-Byzantine, Medieval (twelfth-thirteenth centuries).

Description: Very low mound with few distinguishing characteristics. Özdoğan estimated area at 150 x 100 m and it possibly spread over a total of one ha. The site's presence is indicated by a scatter of limestone foundation stones, rare pottery, and some roof tiles. When visited the site was under cereals (burnt).

The site is on the edge of a gravel fan which has been encroaching onto the Euphrates flood plain to the south as the locus of erosion has extended towards Cümcüme. It appears that the river has not passed close to the site for several hundreds of years and, as reported by Özdoğan, the withdrawal of the river may account for the decline of the settlement.

The site was only briefly visited. No sketch map was drawn and only a small general sherd collection was made. Counts of diagnostic pottery are given in table B.4.

Site 23

Location: (fig. 5.7): On bluffs of terrace III ca. 400 m NW of Kurban Höyük.

Period occupied: Medieval (twelfth-thirteenth centuries A.D.).

Description: Flat site overlooking the Euphrates: 290 m E-W, maximum width 64 m; area ca. 1.45 ha; depth of deposit ca. 50 cm or less. Site distinguished by grayish brown soil which, together with plowed out wall foundations, forms a linear spread along the bluffs of terrace IIIb. The western end of site was marked by a scatter of large rounded cobbles and limestone fragments probably belonging to a single structure. Site scatter also included six or seven tile fragments, possibly reused within Medieval ovens as at Gritille Höyük (G. Stein, personal communication). Several fragments of chaff-tempered fired clay vessels resembling very coarse storage jars have been diagnosed as oven fragments (S. Redford, personal communication). The pottery scatter on site was no denser than the surrounding Late Roman-Byzantine field scatter.

Phosphate values at 200–260 mg P/100 gm were significantly above the non-site means of 170 mg P/100 gm.

The site was under cotton in 1981; lentils and cereals in 1982. The nearest water source was the Euphrates. Relatively little or none of the site has been removed by riverine erosion. No map was drawn. Pottery was sampled as a general collection and additional diagnostic sherds from the field scatter sample squares have been incorporated into the site catalog. N.B. the post-khan graves dug into Kurban Höyük area D may belong to this settlement. Pottery is illustrated on figure B.18.

Site 24

Location (fig. 4.3): Virtually the same distance from Kurban Höyük, Cümcüme, Şaşkan Büyüktepe, and Şaşkan as Site 16.

Period occupied: Early EB.

Description: Scatter of limestone fragments and pottery over 100 x 60 m area of interfluvium between two dry valley tributaries of the İncesu Deresi. Area of scatter ca. 0.45

ha, estimated depth of deposits 50 cm or less. Site is adjacent to and north of the spring which was also used by Site 16.

The pottery scatter is more abundant than that at Site 16 and it includes pottery wasters which implies the presence of kilns within the settlement.

In 1981, when the main collection was made, the site was under lentils.

The site was mapped at a scale of 1:1000 by tacheometry in conjunction with Site 16 (fig. A.8). The original sample area designations were as Site 16 b, c, and d, but subsequent collections in 1982 and 1983 were made at 24 when the site was renumbered to distinguish it from Site 16. During the final analysis all sherds were included under the Site 24 number. Pottery is illustrated on figure B.7. Counts of diagnostic pottery are given in table B.1.

Site 25

Location (fig. 4.1): On terrace III bluffs overlooking the Euphrates and 450 m E of Cümçüme.

Period occupied: Middle Chalcolithic (Ubaid-like).

Description: A small, flat site approximately 90 m E-W and 20 m N-S. Depth of occupation was estimated at ca. 30 cm and the estimated area was ca. 0.2 ha.

Site scatter includes very few limestone fragments from wall foundations which implies that buildings must have been fairly rudimentary. The scatter mainly comprises sherds and flints which, however, were readily distinguished from the late Roman-Byzantine field scatter. The prehistoric pottery was heavily coated with CaCO_3 .

The nearest water source today is the Euphrates, but is only accessible via a circuitous route to the west near Cümçüme. This implies that formerly slopes down to the Euphrates were gentler and that subsequent erosion has trimmed the bluffs and made them steeper.

When discovered in 1982 the site was under lentils. In 1983 the east end was under lentils, the west under wheat.

The site was not mapped. General collections of diagnostic sherds were made in 1982, 1983, and 1984. Pottery is illustrated on figure B.4.

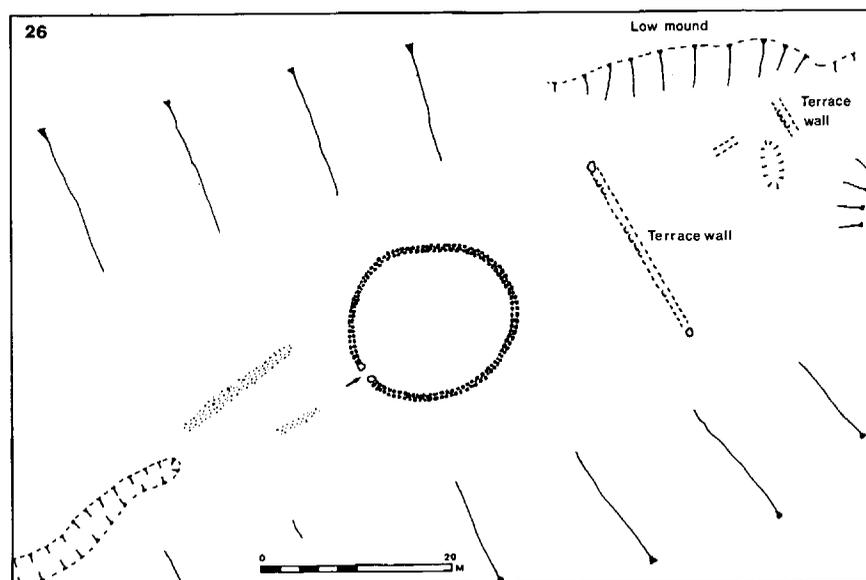


Figure A.13. Site 26.

Site 26

Location (fig. 5.4): Very small site within limestone hills on mutual catchment boundary of Yaslica, Arikök, and Cümçüme ca. 500 m WNW of Büyük kırmızı Tepe.

Period occupied: Late Roman-Byzantine.

Description: Site covers area of ca. 55 m x 45 m. No occupation deposits are present except for thin accumulations behind terrace walls. Site mainly comprises stone walls and a very sparse scatter of late Roman-Byzantine pottery and tile fragments. A total of 41 tile fragments and 30 sherds were collected. This sparse scatter was however quite conspicuous in an area otherwise bereft of finds. The following built structures were recognized (fig. A.13):

A circular structure, probably an animal pen, ca. 17 m in diameter. This is of dry stone construction; it is mainly collapsed, but where intact it is two courses wide. Maximum wall height 60 cm (three courses). A one meter wide WSW facing entrance is flanked by two 80 cm square stones. The weathering and the even spread of collapsed material indicate some antiquity for this structure and this would be consistent with a late Roman-Byzantine date. Its orientation down valley would enable animals coming up valley to enter the pen without entering the settlement.

A 20.80 m long terrace wall occupied the site center. Six stones indicate the wall's course in the central section and the extremities were indicated by larger boulders (cf. the circular structure entrance). Soil has built up on the up slope side to form a low terrace to the east.

In addition, a 2–4 m long minor terrace wall, a trace of a linking wall, and a low mound, possibly a hut platform, complete the settlement.

In summer there are no known water sources within at least 1 km of the site. Areas of potential cultivation are also absent. The site was mapped with tape and compass and all collected sherds were counted and diagnostics retained.

The site is tentatively interpreted as a winter pastoral encampment, with animal pen, of the late Roman-Byzantine period. Pottery is illustrated on figure B.16.

Site 27A–D (Cümçüme Köy)

Location (fig. A.14): Three locations around perimeter of Cümçüme village.

Periods occupied: Area A: Hellenistic. Area B: EB-MB, Late Roman-Byzantine, and Medieval (twelfth to thirteenth centuries). Area C: Halaf.

Description: Three areas of occupation were apparent.

Area A: Approximately 170 x 90 m area on west-facing slopes near to present-day village spring. The area covered is approximately 0.95 ha and the estimated depth of occupation is about 0.50 m or less. Site defined by scatter of limestone fragments, pottery, and frequent fragments of vitrified kiln lining including one or two pottery wasters. A sparse scatter of Hellenistic type pottery extending towards the bluffs suggests a possible extension of the site to the north.

When discovered in 1982 the site was under lentils. Situated within 50 m of the copious Cümçüme spring which issues from a gully which also allows access to the river.

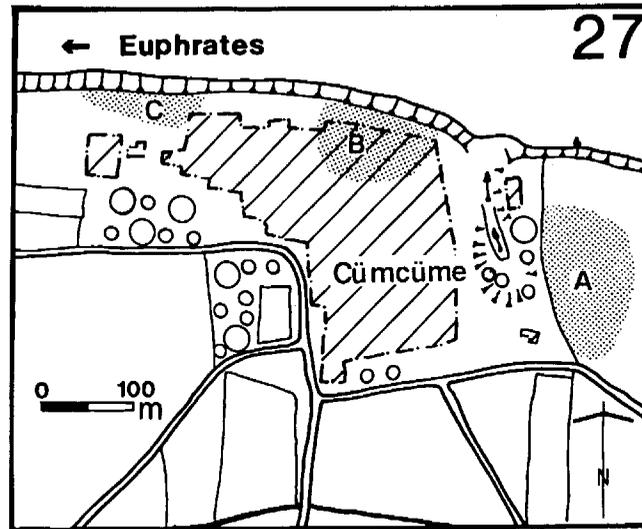


Figure A.14. Site 27A–D (Cümcüme Köy).

Area B: A small area originally noted in modern lentil storage pits cut in soil along the top of the river bluffs. The occupation probably extended over the stippled area (fig. A.14) which roughly defines an area of mounding 1–2 m high covering an area of ca. 120 x 80 m (ca. 0.75 ha). Archaeological evidence was both disturbed and obscured by the village houses.

Area B is close to the spring (ca. 100 m) and was within easy reach of the Euphrates.

Area C: Small area of Chalcolithic pits within northwestern corner of village. Some pits are exposed along the edge of the bluffs where they are gradually being eroded. The occupied area could not be defined with any confidence and the area indicated on the figure (0.30 ha) is very approximate.

The Euphrates River was the most likely water source, access being via a narrow gully which now leads to the river from the village center.

Because of problems of site definition within the village the above dimensions should be taken as very approximate. An additional area of low mounding (D) within the village cemetery may also represent a settlement site but, this remains undated. Pottery collections were from the surface in area A, from modern pits in area B, and from archaeological pits in area C. Pottery is illustrated on figure B.3 (Area C), figure B.13 (Area A) and listed in table B.4 (Area B).

Site 28 (Kumartepe)

Location (fig. 4.1: On terrace III between Şaşkan Büyüktepe and Şaşkan Küçüktepe overlooking the Euphrates and currently being trimmed by it. 1.50 km north northeast of Şaşkan village.

Period occupied: Neolithic (first half of sixth millennium B.C.)

Description: Being virtually flat, Kumartepe proved difficult to define, therefore a variety of criteria were used to estimate the approximate site size:

1. The presence of 2–3 m of occupation deposits along the Euphrates bluffs. These mainly light brownish gray ashy silts contrast with the brown colluvial loams of the terrace beneath. The base of these deposits appeared to be at a uniform elevation of ca. 412.60 m ASL except where there is a slight rise towards the eastern end of the site. Included within the occupation deposits are weathered limestone blocks interpreted as wall foundations, a compressed floor, possible *pisé* or mudbrick structures, and a range of artifacts including stone bowl fragments, flint and obsidian artifacts, chaff and grit-tempered pottery, and animal bone.
2. Low topographic mounding. Initial topographic survey in 1982 employing a one meter contour interval was followed by a more detailed survey in 1983 using a 25 cm interval (fig. A.15a). The latter technique indicates a low mound rising to more than 415.50 m ASL to the south of the ‘hollow way’ track. To the northeast an E-W spur defined by the 415 m contour extends parallel to the hollow way. From this slightly raised area the ground surface slopes to the south, that is, against the general slope of the terrace surface. The lowest point in this intervening depression has been used to tentatively delimit the morphological edge of the site (hatched, fig. A.15a).
3. Soil color. Some support for the above-mentioned site edge is found in the soil colors which were determined using a Munsell soil color chart at 20 m intervals along a single N-S transect south of the hollow way. To the north of the topographically defined boundary, soil colors were closer to the grayer hues of the occupation deposits whereas to the south they tended towards the browns of the colluvial loams which underlie the site.
4. Surface scatters of disintegrated limestone derived from wall foundations interspersed with a scatter of handmade prehistoric pottery and stone artifacts. These scatters veneer the eastern and western slopes of the site and form an outlier beyond its southeastern corner (fig. A.16). Such stones are absent from the underlying colluvial deposits.
5. Density distributions of chipped flint and chert were determined by a net of 5 x 5 m sample squares laid out at 40 m intervals along transects positioned 5 m to the east or west of field boundaries. Collections were made by Gil Stein where surface conditions ensured moderate to good surface visibility i.e., on cropped lentil fields or on burnt cereals.

Two levels of lithic density have been mapped (fig. A.16):

- a. Dense scatters of more than 20 lithics (worked flint and chert) per 25 m². This density compares with 1–3 flints per 25 m² or less within the extensive field scatters on the nearby terrace.
- b. Moderate scatters of 10–20 lithics per 25 m².

The greater than 20 lithic contour forms a halo extending 60–100 m south of the topographically defined site limit (fig. A.16) and is in turn paralleled by the 10–20 lithics per 25 m² contour. A second area of lower density scatter was defined within the outer earthwork of Site 7.

TOWN AND COUNTRY IN SOUTHEASTERN ANATOLIA

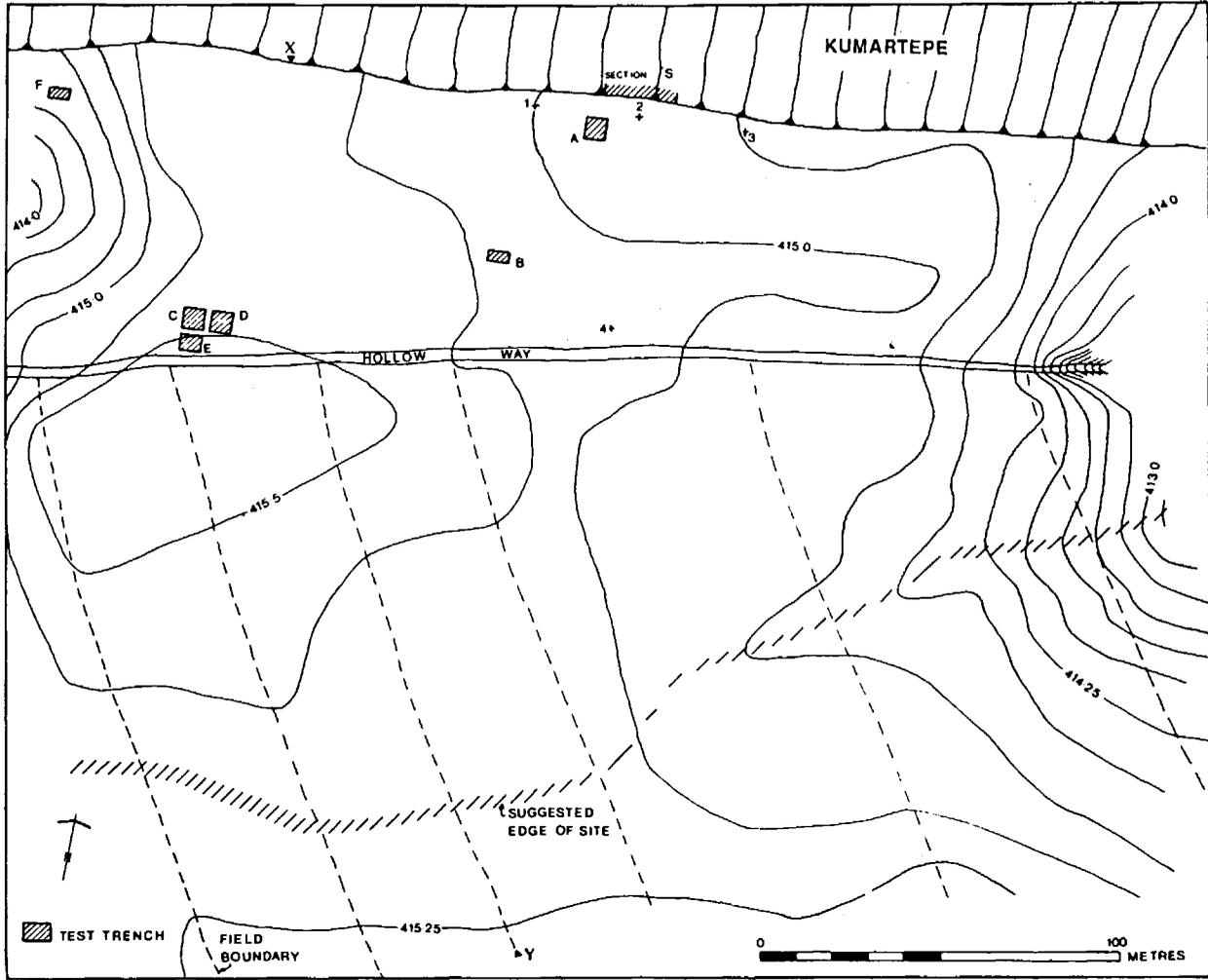


Figure A.15a. Site 28 (Kumartepe): Topographic Plan Showing Contours at 25 cm Vertical Intervals and Areas Excavated by Dr. J. Roodenberg in 1983.

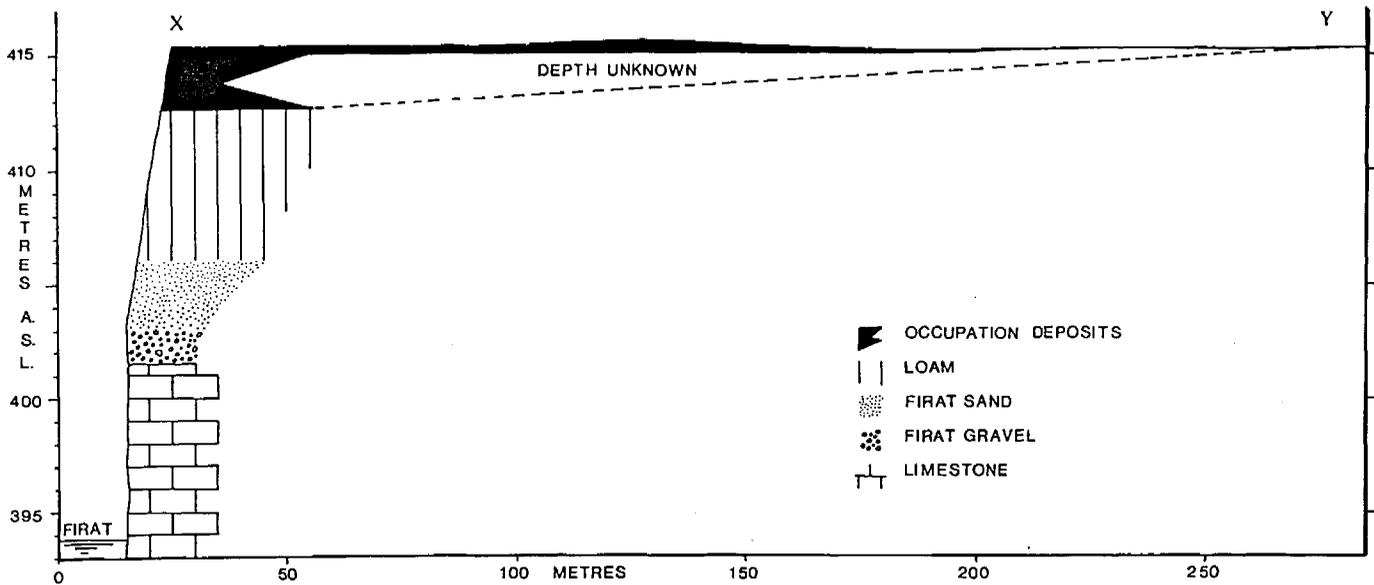


Figure A.15b. Site 28 (Kumartepe): Hypothetical Cross Section from North to South.

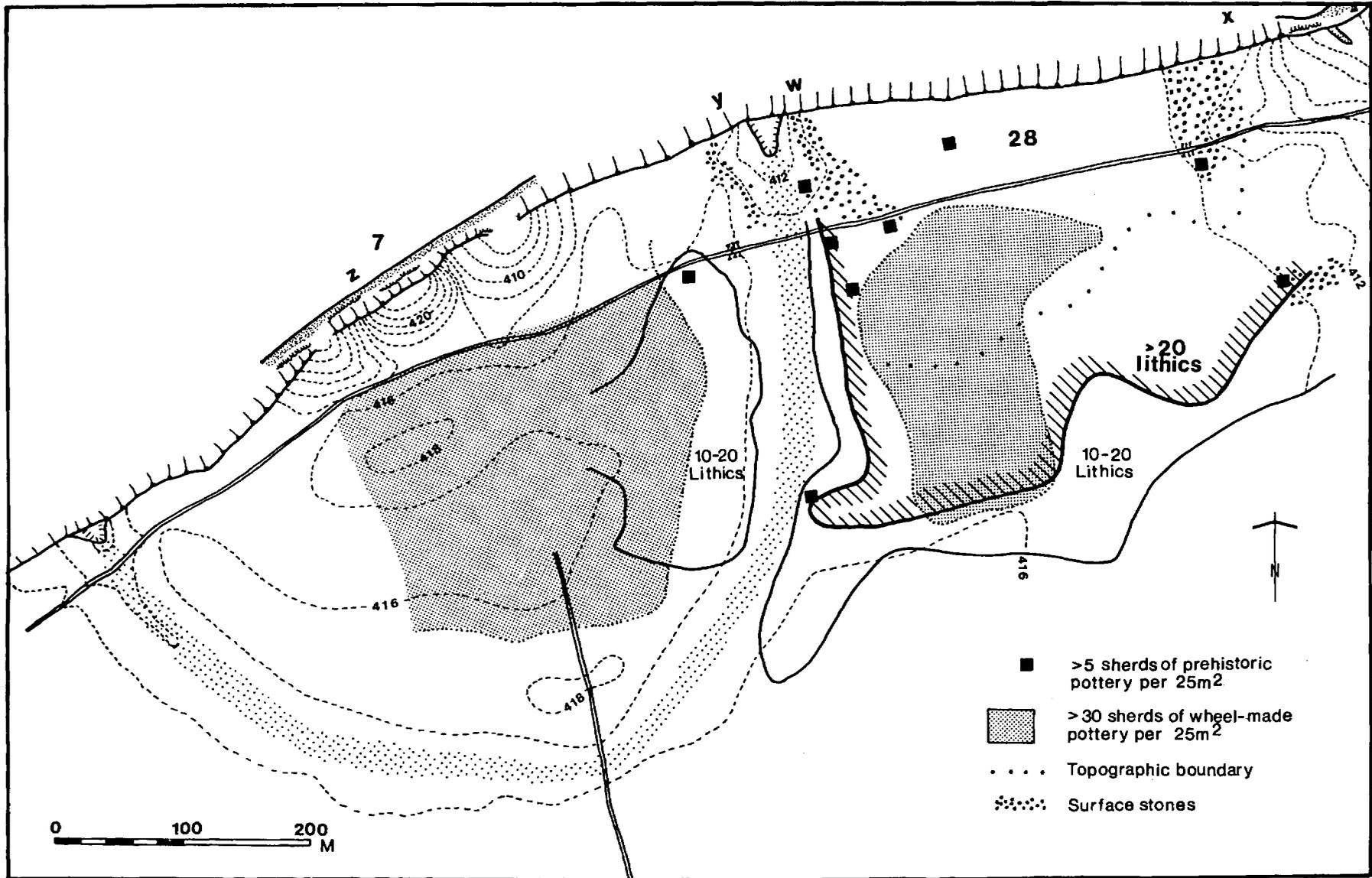


Figure A.16. Site 28 (Kumartepe): Main Lithic and Artifact Scatters.

The above distributions imply that the lithic scatter focuses on and surrounds the site as defined by excavation and topographic survey.

6. Significant scatters of prehistoric pottery more than five sherds per 25 m² which are indicated by solid squares on figure A.16. This rather soft pottery is only present in significant quantities where occupation material is being freshly plowed out of the ground, usually where surface gradients are moderately steep. On flatter areas of the site, where slope erosion is not continuously exposing fresh deposits, only lithics are abundant. The loss of pottery by abrasion as a result of millennia of plowing is supported by the evidence from excavation of site grid points 1–4 (fig. A.15a). These pits revealed only abraded lithics or later wheel thrown sherds in the upper 50 cm of soil; below this level, prehistoric pottery appeared in significant quantities.
7. The area of dense scatter of later wheel-made pottery (more than 30 sherds per 25 m²) is also shown as a comparison (fig. A.16). The larger area falls within the Site 7 earthwork enclosure but does not extend up to the trough, the intervening terrain apparently having been obscured by low mounding either from a bank or collapsed walls. A second but smaller area of dense scatter occupies the western half of Site 28. The scatter includes pottery of various dates. That within the Site 7 earthwork may reflect occupation within the site whereas that to the east within Site 28 might result from intensive manuring of land immediately adjacent to Site 7 (ch. 3).

The above criteria allow the approximate limits of former occupation to be estimated. The cliff-side section demonstrates a continuous accumulation 2–3 m deep between w and x (fig. A.16). The scatter of limestone fragments conforms approximately to the scatter of prehistoric pottery but only indicates where occupation deposits are actually eroding out of steeper slopes. The area of topographic mounding in addition to the area defined by grayer soils suggests a slightly larger site covering ca. 6 ha. Beyond the topographically defined limit, the denser lithic scatter (greater than 20 lithics per 25 m²) contains an area of 9.70 ha. This completely encompasses the scatter of prehistoric pottery and limestone fragments. The area of topographic mounding and outcrop of occupation deposits along the bluffs probably gives the best estimate of occupied area. In turn the lithic scatter extends beyond this and may indicate more extensive occupation or specialized activity areas around the site perimeter. The secondary lithic scatter within the Site 7 enclosure together with artifacts found along the bluffs between y and z suggest that extensive occupation or activity areas extended some 300 m west of the site as already defined. The poor definition of the possible western annex of Site 28 was a result of later occupation and earthwork construction within greater Site 7.

Site geomorphology: The river is currently trimming the base of the bluffs and has exposed a full sequence of Cretaceous limestone, overlaid by Euphrates gravel, sand, and silt, and 5 to 7 m of reddish-brown loam washed from the hills to the southeast (fig. A.15b). These loams form a northward-dipping veneer over the river terrace. Sufficient time has elapsed since deposition for the loams to have developed a calcium carbonate 'B' horizon

within their upper levels. Although it is evident that the site has been eroded it is not possible to estimate how much has been lost.

The site was tacheometrically surveyed in 1982 at 1:1000 and in 1983 at 1:500 using a 0.25 m contour interval to provide extra definition. In addition to employing the above-mentioned techniques (1–7), artifacts were collected from contexts 216–229 and 214 situated along the bluffs. Finds are illustrated on figure B.1.

Discussion: Excavations directed by Dr. J. J. Roodenberg in 1983 were conducted as a joint venture between the Urfa Museum, The Netherlands Historical Archaeological Institute in Istanbul, and The Oriental Institute. These confirmed the presence of up to three meters of occupation deposit within the topographically mounded area to the north of the 'hollow way.' An area of 'at least two hectares' is confirmed by these excavations, but a more extensive grid of soundings would have been necessary to confirm the full area of six ha suggested by survey. The large area suggested by the lithic scatter cannot be proven because the lithics are poor chronological indicators, and could be attributed to other periods. They might, for example, relate to Chalcolithic settlement at the adjacent Büyüktepe or Küçüktepe mounds (Roodenberg et al. 1984). The presence however of very little Chalcolithic pottery at either site (although some diagnostics have been mentioned by Özdoğan, 1977) does not support an external origin for the lithics. Also the lithic scatter is densest upon Site 28 and would appear to have emanated from it. The best estimate of site area based upon proven cultural deposits and the area of mounding is 4–6 ha; the lower, more conservative estimate will be used in comparative work with other sites in the survey area.

Site 29 (Tatarhöyük)

METU: U51/8

Location: (figs. 3.1 and 4.4): 9 km NE of Bozova, 10 km SSW of Titriş Höyük. Within upper İncesu valley approximately 18 km up valley from Şaşkan Küçüktepe.

Periods occupied: Chalcolithic (Özdoğan 1977, 189), Mid-Late EB, EB-MB, possibly Second Millennium and Early First Millennium B.C., Hellenistic, Late Roman-Early Byzantine, Medieval.

Description: The site was only informally and briefly visited. No formal survey of this multiperiod mound was undertaken and the following information is abstracted from the Lower Euphrates Survey (Özdoğan 1977, p. 189).

The lower site measures approximately 500 x 200 m and covers some 5.90 ha. The mound dimensions are approximately 150 x 110 m covering some 1.75 ha. The estimated height of mounding is 24 m. The site is disturbed by numerous pits and also several archaeological trenches excavated by Hauptmann and Misir during the early part of the Atatürk Dam rescue program. The site is situated within the İncesu valley adjacent to the İncesu Deresi, which apparently supplied the settlement with some or all of its water.

No site map was drawn. The map illustrated here on figure A.17 is based upon that given in Özdoğan 1977. The site was subdivided into pottery collection areas a-f, but collection coverage was uneven and a comprehensive sample of representative artifacts was not retrieved. Counts of diagnostic pottery are given in table B.5. Some possible EB forms are illustrated on figure B.27.

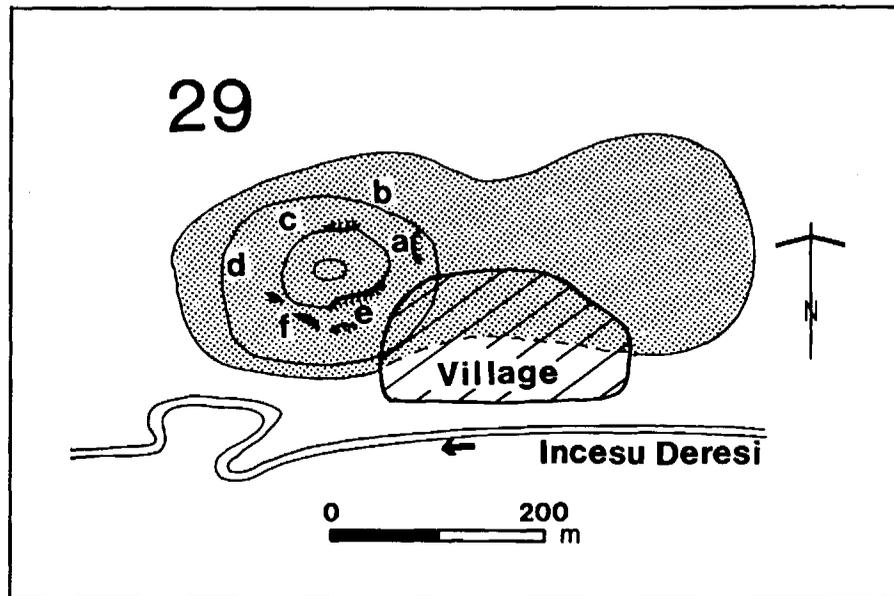


Figure A.17. Site 29 (Tatarhöyük).

Site 30

Location (fig. 5.4): On the eastern fringes of Site 28 on a small spur on the western slopes of a large valley which reaches the Euphrates between Şaşkan Büyüktepe and Şaşkan Küçüktepe. 1.50 km NNE of Şaşkan village.

Period occupied: Late Roman-Early Byzantine.

Description: Low site ca. 30 m diameter overlooking dry valley and Şaşkan Büyüktepe lower settlement (fig. A.3a). Depth of occupation deposits 50 cm or less; area ca. 700 m² (0.07 ha). Site merely consists of a scatter of limestone fragments and tiles. No pottery is evident except for the usual field scatter.

Site under lentils in 1982. The site has access to the Euphrates some 600 m to the NNE for its water supply.

The site is adjacent to the hollow way and appears to be a single late Roman-Byzantine building by the road. The site was surveyed at 1:1000 together with Site 28. No artifacts were collected.

Site 31

Location (figs. 3.1 and 5.1): On bluff of terrace III overlooking Euphrates flood plain. Approximately 800 m ENE of Şaşkan Büyüktepe.

Period occupied: Late Second-Early First Millennia B.C.

Description: Low mound 60 m E-W, 25 m N-S occupying some 0.12 ha and rising to ca. 1 m above the surrounding terrace (fig. A.18a). Evident as area of grayish-brown soil strewn with fragments of disintegrated limestone from foundations. Site has very sparse sherd scatter and occupied area was defined by reference to mounding and stone scatter.

When the site was collected in 1983 it was under wheat, but surface visibility was moderately good.

The terrace surface is 15–20 m above the Euphrates flood plain. The bluffs at present are not being trimmed and consequently they exhibit gentle 35–45° gradients. The site appears to have been partly eroded since occupation. The Euphrates was the nearest water source.

The late Roman-Byzantine ‘hollow way’ follows an E-W course 160 m to the S of the site, but track and site appear to be unrelated.

The site was sketched and paced only. The entire site was collected in both 1983 and 1984. The pottery is illustrated on figure B.11.

Site 32

Location (figs. 3.1 and 5.4): Between Arapkantara and Şaşkan villages; 3.50 km SW of the former. Opposite Samsat Höyük and 2.60 km due S of it.

Period occupied: Late Roman-Byzantine.

Description: Low mound, 220 m N-S, 130 m E-W occupying some 2.84 ha. Estimated height of mounding is 5 m, but of this probably only 2–3 m are occupation deposits. Visible as low mound immediately north of the ‘hollow way’ (fig. A.18c). Comprises a southern mound ca. 90 m diameter and to the north a low mound which spreads towards the edge of the river terrace. Both mounds consist of gray soil containing abundant limestone and tile fragments. Sherd density is low: a 10 x 10 m sample square placed on the higher mound yielded only 22 sherds but produced 11 tile fragments. Pottery appears more abundant along the steeper west-facing slopes of the site. A small 50 m diameter outlier which included several quern fragments and tiles was found to the northeast of the main site.

A field scatter extended to the northeast along the lower terrace but was not present on the higher terrace to the west of the site. Although it was not mapped the scatter indicates that the main zone of intensive cultivation was on the terrace to the north. In 1983 pottery collection was from a surface formed after the wheat harvest. The site was paced and sketched and plotted using a prismatic compass on to a 1:40,000 map (from Serdaroğlu 1977; plates 64 and 65). Additional topographic details required were plotted on to the same map and the relevant information has been added to the general settlement map for this phase (fig. 5.4). Diagnostic ceramics were collected from the western slope (Site 32a), the northern lower mound (Site 32b); a general collection was also made. Pottery is illustrated on figure B.16.

This site is not to be confused with METU: U51/8 which is only 2.50 km SW of Arapkantara but is possibly contemporary with Site 32.

Site 33 (Şaşkan water mill)

Location: On left bank of İncesu 300 m SW of Şaşkan village.

Period of use: Ottoman (late)

Description: Visible as a ruin and associated depressions on a low terrace a little above the İncesu flood plain (fig. A.18b). An inlet channel winds around the colluvial slopes and

the river terrace in order to gain a head of 4.50–5 m, i.e., sufficient to turn a millstone. Some 250 m upstream of the mill the conduit (within a cut and embanked channel) had originally crossed an İncesu tributary via a 3 m high aqueduct with abutments 7 m apart. The conduit could be followed intermittently for 1.8 km upstream, i.e., to 200 m southeast of Site 34. The main components of the mill were: 1) Inlet channel; 2) inlet chute of approximately 45° gradient made of contiguous dressed limestone slabs; 3) a main building 13.50 x 7 m with walls 75–80 cm thick made of dressed stone with mudbrick superstructure and stood to 3–4 courses; 4) overflow channel to the east of 3; and 5) outlet channel to the west of 3. The mill was sketched and taped. The only artifact found was a single fragment of basalt millstone.

Site 34 (Harabe Kasim)

Location (fig. 5.4): In İncesu valley 800 m due S of Şaşkan village adjacent to main track along İncesu valley. First recorded by Kuhne (1981).

Period occupied: Late Roman-Byzantine.

Description: A small site ca. 40 x 30 m covering some 950 m² (0.095 ha) or a little more (fig. A.18e). Site scatter includes abundant tiles plus a few marble or very hard limestone tesserae (the latter in the northeastern corner); rare pottery. The depth of occupation deposits appears to be less than 30 cm.

Situated on a grayish-brown limestone-rich colluvial soil which forms gentle east-facing slopes at least 5 m above the İncesu flood plain.

When first collected in 1983 a cluster of temporary huts were near the site which at that time was under wheat.

The site appears to be little more than a single building, in this case rather well constructed possibly with a tessellated floor and a tile roof.

Site 35

Location (fig. 5.7): In İncesu valley on spur overlooking an eroded bluff of the İncesu Deresi (fig. A.18d). 1.50 km SSE of Şaşkan village.

Periods occupied: Medieval on the larger western site. The eastern component yielded no diagnostic pottery.

Description: A two-component site (see fig. A.18d). The eastern site measures 50 x 30 m, the western 60 x 40 m. Together they covered an area of 0.33 ha. The eastern component consisted of a pale brown soil containing occasional limestone fragments probably eroded from wall foundations. Pottery was very sparse.

The larger western component was a low mound ca. 1 m high. The gray brown soil was littered with abundant limestone fragments from wall foundations. The site scatter included common sherds and a fragment of basalt quern. In 1983 the site was under wheat. The site is situated on a fan of limestone gravel overlooking the İncesu flood plain. Heavily eroded limestone badlands spread behind the site (to the west), but there is extensive cultivable land on colluvium and flood plains to the northeast and south. Water was from the nearby İncesu. The site was paced, sketched, and all diagnostic pottery was collected. Pottery is illustrated on figure B.18.

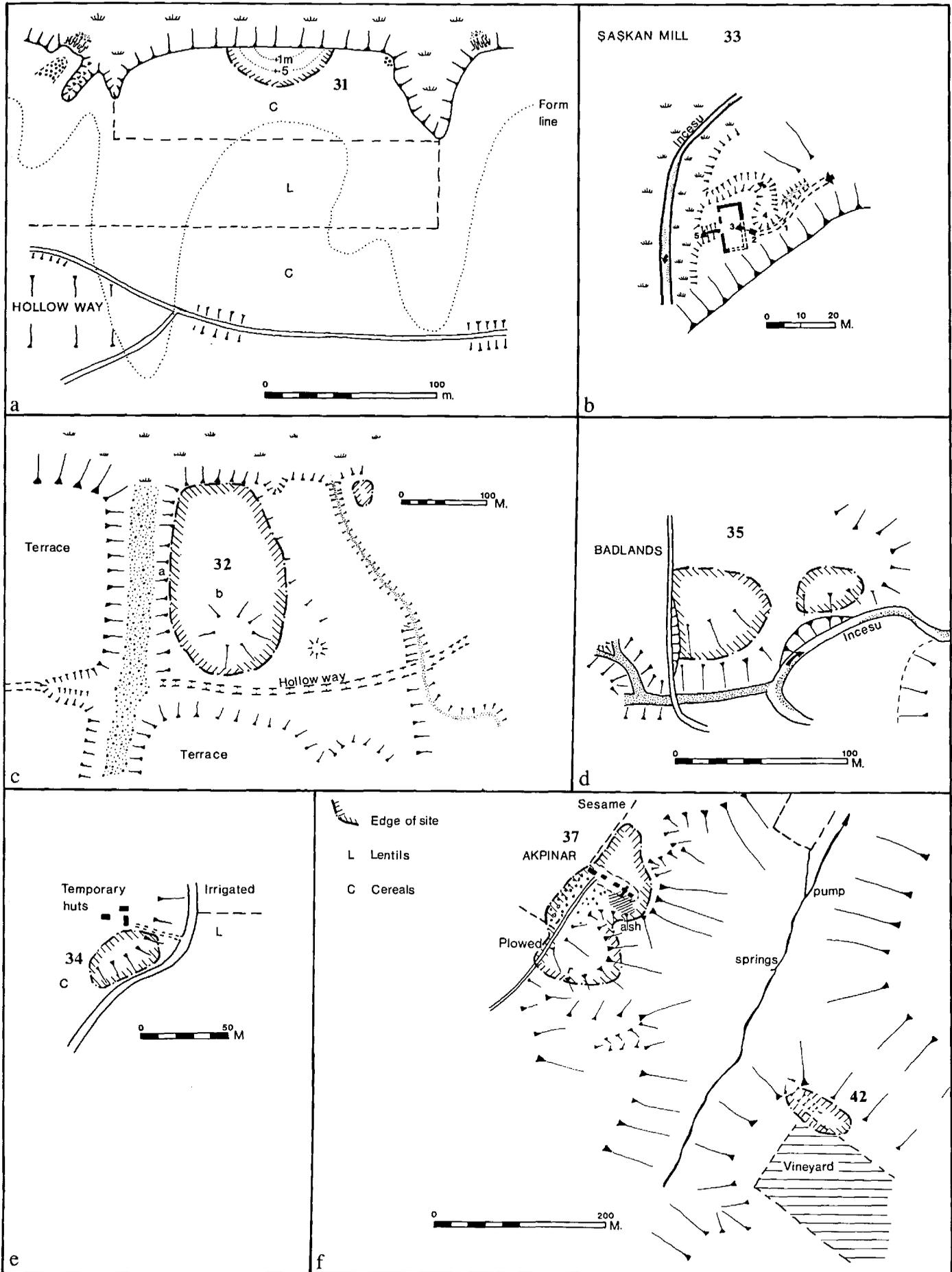


Figure A.18. (a) Site 31, (b) Site 33 (Şaşkan Water Mill), (c) Site 32, (d) Site 35, (e) Site 34 (Harabe Kasım), and (f) Sites 37 (Akpınar Köy) and 42.

Site 36

Location (fig. 5.1): Within heavily eroded limestone upland drained by a left-bank tributary of the İncesu Deresi. 900 m E of Akpınar, 1.30 km up valley from the İncesu.

Period occupied: Hellenistic.

Description: A very small settlement situated on a low limestone spur which overlooks a track leading from the İncesu Deresi to Akpınar. Scatter area approximately 25 x 20 m (ca. 400 m² or 0.04 ha). Depth of occupation deposit negligible.

Although situated on a limestone spur, some of the abundant fragments of limestone on the surface had their bedding planes out of orientation with the local rock. These appear to have been from wall foundations.

The spur is uncultivated and is within an area of rough pasture and some light hawthorn scrub. The immediate catchment also includes abundant limestone badlands. Cultivable land is virtually absent within 500 m of the site and there is very little within 1 km. The site appears to have comprised one or two buildings either related to pastoralism or guarding a road leading to the south.

A spring in the valley floor ca. 180 m to the northeast provided water. The site was described but not mapped. A total collection of surface pottery was made. Pottery is illustrated on figure B.14.

Site 37 (Akpınar Köy)

Location (figs. 4.3 and 5.4): Within Akpınar village. On edge of terrace I, 3.80 km SE of Cümcüme, 2.50 km SW of Şaşkan.

Periods occupied: Possibly EB-MB; main phase is Late Roman-Byzantine.

Description: Situated within the small village of Akpınar. Because of the presence of modern occupation, the extent of archaeological remains is not always clear. Approximate dimensions 200 x 100 m. Low mounding suggests at least 50 cm of occupation deposits on top of the hill. Site distinguished by abundant scatter of limestone fragments and tiles and occasional potsherds. Limestone is most evident on slope crest to the west of the track (fig. A.18f) and debris also forms a veneer down the east-facing slopes of the valley. There is some ash and gray occupation debris on the slope (fig. A.18f), but it is always difficult to distinguish the ancient from the recent debris. A possible rock-cut tomb occurs in the southern part of the site (fig. A.18f as an inverted 'L'). The major occupation at this site was clearly late Roman-Byzantine, but a late third millennium phase of occupation is hinted at by two EB-MB transitional sherds. Only the western extremity of the site is cultivated, the slopes being uncultivated waste land.

The settlement was sited on limestone but overlooked deeper colluvial loams which overlay terrace gravels to the north of the village. The surrounding soils had been manured in late Roman-Byzantine times and the field scatter which resulted from this formed a zone stretching 200 m to the west and 600–700 m to the north. That is, the manured cultivation was more extensive on the deeper soils. A plentiful water supply existed in the valley 100 m to the E and some 20 m vertically below the site. The site was paced and sketched. Pottery was designated Area a general scatter; Area b zone around the houses. Pottery is illustrated on figure B.16.

Site 38 (Koçtarlası [Günçtepe])

METU: U50/10

Location (figs. 5.1 and 5.4): Within a meander loop of the İncesu Deresi, 2.40 km SSE of Şaşkan Köy.

Periods occupied: Hellenistic-Roman and Late Roman-Byzantine.

Description: Low, elongated mound 160 m long x 50 m wide and rising to 1–2 m above the terrace surface. Scatter area ca. 0.63 ha, mounded area ca. 0.20 ha. In addition a small scatter extends over some 30 x 36 m on the eastern side of the track (fig. A.19). Mound consists of gray soil with litter of limestone fragments. Tiles are common on the top of spur and pottery is generally quite common. Foundations of a small modern building remain on the mound summit.

When collected in 1983, the site was under wheat.

The site developed on a meander neck overlooking the İncesu flood plain which today has a well-developed belt of poplars along the river course. Although highly eroded limestone slopes occur to the northeast and southwest, sufficient cultivable land is available on the flood plain and lower slopes. Water came from the İncesu. The site was paced and sketched in conjunction with Sites 39, 40, and 41. Pottery from the top of the mound (area a) was late Roman-Byzantine; pottery from the lower slopes (b) was mainly Hellenistic-Roman. Counts of diagnostic pottery are given in table B.5.

Site 39 (Beyaz Kaya Mevkii)

Location (figs. 4.1 and 4.3): On left bank of the İncesu, 300 m SE of Site 38 and 2.60 km SSE of Şaşkan village. First reported by Kuhne (1981).

Periods occupied: Middle Chalcolithic (Ubaid), Late Chalcolithic A (Uruk), Late Chalcolithic-Early EB Transition, Early EB.

Description: Low mounded area on spur of gray soil strewn with limestone fragments from foundations; scatter included frequent sherds and two fragments of basalt quern. The site measures 70 x 50 m and covers ca. 0.27 ha (fig. A.19). Estimated depth of occupation deposits is one meter. In 1983 the site was under wheat. Site occupied a relatively prominent colluvial spur presenting commanding views up and down the İncesu valley. Water supply was from the İncesu Deresi within 100 m of the site. The site is within an area of intensively eroded limestone. During the third and fourth millennia however this area was probably less extensive and the cultivated area was probably much greater than is possible today. Today cultivation is limited to the lower colluvial slopes and the flood plain.

Site sketched and paced. Collection areas were designated Site 39a (top of the mound) and Site 39b (the north, east and south slopes). Pottery is illustrated on figure B.26.

Site 40

Location (fig. 5.1): On the left bank of the İncesu on top of meander scar looking NE towards Site 38 and 350 m from it. 2.30 km SSE of Şaşkan village.

Period occupied: Late Second-Early First Millennia B.C.

Description: Gray soil strewn with many limestone fragments, some, but not all, coming from wall foundations.

85 m N-S and 35 m E-W. Pottery scatter is quite dense and occurs over some 0.23 ha or a little more. Depth of occupation deposits estimated at ca. 50 cm. The site is uncultivated.

Situated on neck of land between a dry valley and the İncesu (fig. A.19). Water supply was from the İncesu which is within 50 m of the site. On edge of heavily eroded badlands the presence of which would severely restrict the cultivated area if present during the Iron Age. At that time however, they were probably of more limited extent. Site sketched and paced. All diagnostic pottery was collected as a single collection unit. Pottery is illustrated on figure B.11.

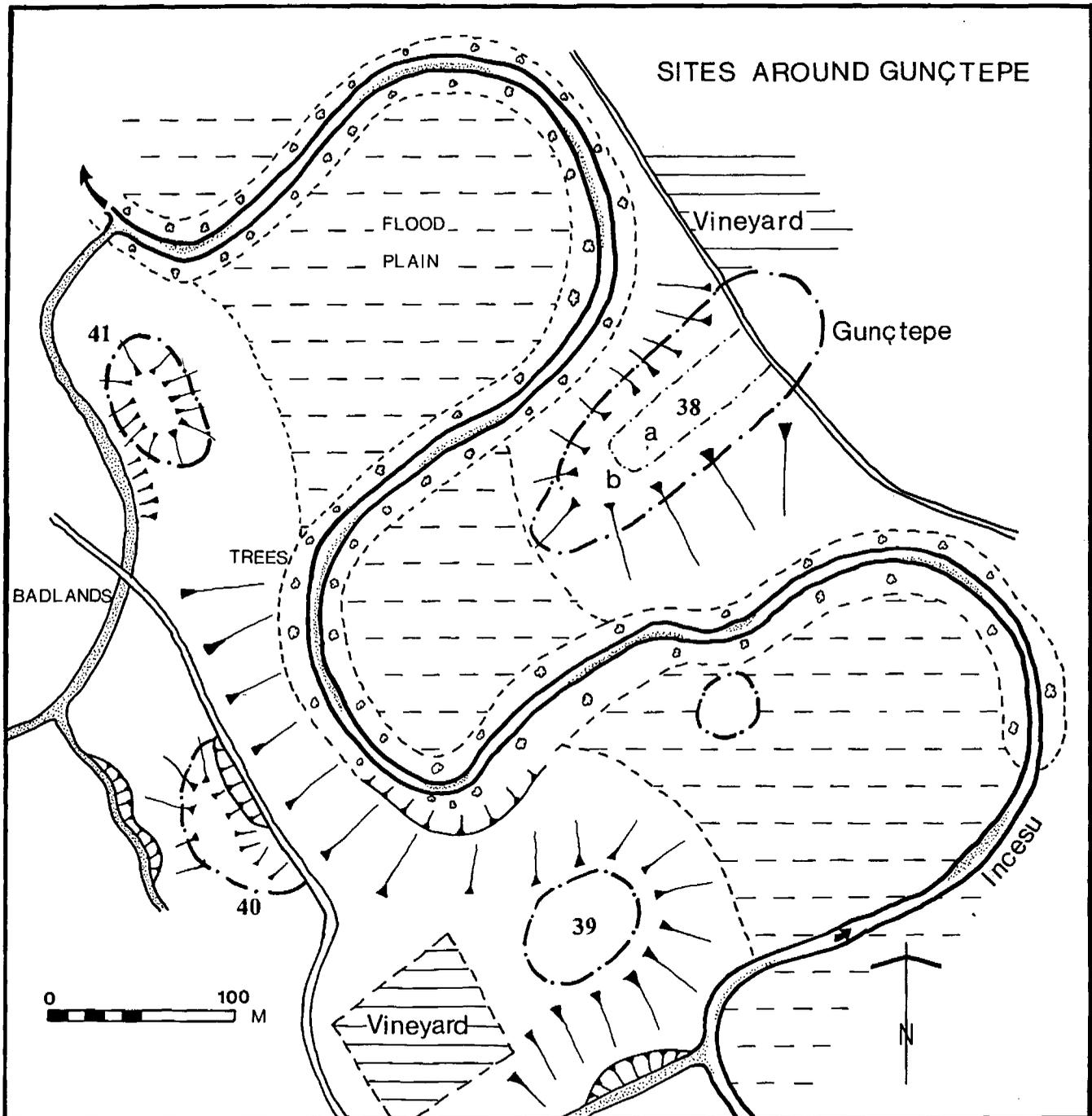


Figure A.19. Sites 38 (Koçtarlası [Gunçtepe]), 39 (Beyaz Kaya Mevkii), 40, and 41.

Site 41

Location (fig. 4.3): On left bank of the İncesu 500 m WNW of Site 38. 2.20 km SSE of Şaşkan village.

Period occupied: EB-MB Transition.

Description: Small, almost conical mound of 75 m long axis, 45 m short axis (fig. A.19). Rises to 1–2 m above the gravel of the underlying terrace surface. Estimated area 0.27 ha. Site evident as brown soil littered with occasional limestone fragments from wall foundations. Pottery is rare and the intensity of occupation seems less than at Sites 38, 39, and 40. In 1983 the site was under wheat.

Site has been trimmed on west side by a small ephemeral stream which is now aggrading. Like Site 40, the site is within an area of severely eroded limestone. Today this severely limits cultivation within the site's catchment, but during the third millennium these badlands were probably less extensive.

The site was sketched and paced. All diagnostics were collected (see fig. B.9).

Site 42

Location (fig. 4.1): On hill crest opposite Akpınar village and ca. 200 m SE of it.

Period occupied: Halaf(?)

Description: Site is possibly indicated by a thin deposit of gray soil eroding out of a gully which has been incised into the northwestern corner of the vineyard. Area which has yielded artifacts stretches over some 60 x 30 m, i.e., 0.15 ha, but the real site area is uncertain. Depth of occupation deposits is negligible.

Site scatter comprises a few flint and obsidian tools and a few pottery fragments.

Situated on a hill crest of tabular limestone which overlooks the spring of Akpınar. Limestone plateau extends to the SE and this area would have provided sufficient cultivated land for a small settlement.

Site sketched in association with Site 37 and all diagnostic sherds and lithics were collected. Pottery is illustrated on figure B.3.

Site 43 (Titriş Höyük)

Location (figs. 3.1 and 4.4): Situated within broad alluvial basin within limestone hills 11.50 km SE of Lidar, 16 km E of Şaşkan Büyüktepe, 10 km NNE of Tatarhöyük.

Periods occupied: Mid-Late EB, EB-MB, Early Second Millennium, Late Roman-Byzantine, Medieval.

Description: The site was only briefly visited, but it was evidently large and complex. It could be divided into three elements (fig. A.20a):

1. The main multiperiod mound. Approximately 200 x 180 m and estimated as 15–20 m high. Flat top has a long axis of ca. 130 m. The mound base covered some 3.25 ha. A single cut in the southeast corner exposed cultural deposits, but otherwise there is little sign of disturbance.
2. A lower elongated mound extending west from the high mound. This measured some 400 m by a maximum of 150 m wide and extended over an

estimated 6.25 ha. Occupation deposits were estimated to be around 2 m thick. The western end was bounded by what appears to have been a curtain wall, possibly defensive, which overlooked a narrow valley leading into the modern irrigated area. This lower mound appears to have mainly been occupied during the mid-late EB and possibly EB-MB.

3. A still lower and more extensive 'outer town' stretching as a low stone and pottery veneered area over some 700 x 400 m, i.e., 16.50 ha. The depth of occupation appears shallow, possibly around one meter. Like the lower mound this area appears to have been occupied during the mid-late EB and possibly EB-MB. The modern village has developed on the eastern fringes of the outer town. The site was well provided with water from a source near the irrigated gardens on its southern edge.

Only a rapid sketch map could be made during the brief visit in 1983. Only one general collection was taken from the entire area. The dating of the lower mound and outer town was assessed by observation of diagnostic wares in the field. Mid-late EB pottery is illustrated on figure B.27. Diagnostic sherds are listed in table B.2.

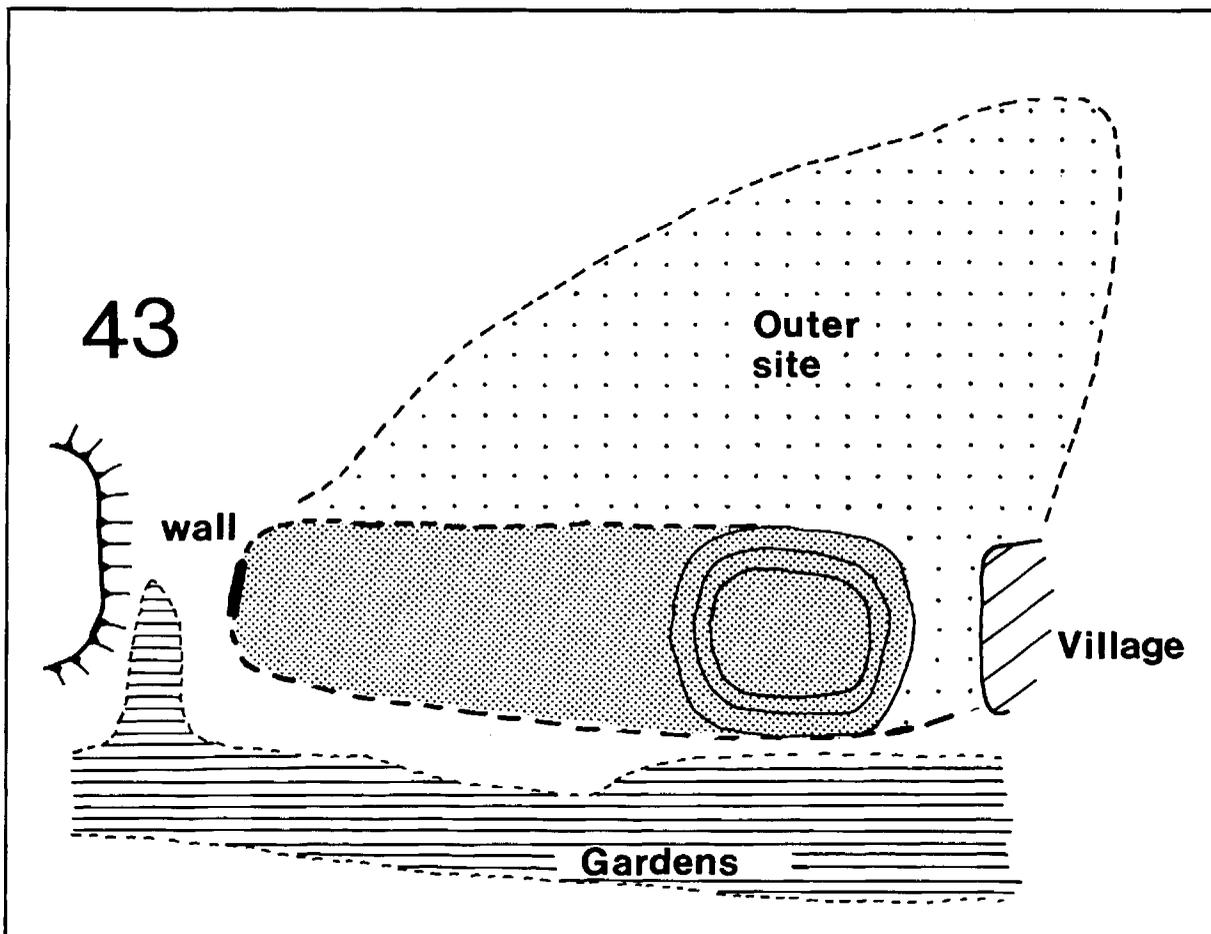


Figure A.20a. Site 43 (Titriş Höyük).

Site 44 (Bozova Höyük)

Location (figs. 3.1 and 4.1): Within Bozova basin on edge of irrigated fields, woods, and orchards. Approximately 1 km from the town of Bozova and adjacent to the Urfa road.

Periods occupied: Halaf and Middle Chalcolithic, Late Chalcolithic B and A, Early EB, Mid-Late EB, EB-MB, MB, Hellenistic-Roman, Late Roman-Byzantine, Early Islamic (ninth-tenth centuries A.D.), Medieval (twelfth-thirteenth centuries A.D.).

Description: Mound ca. 200 m diameter with 90 m diameter flat top. Estimated height 15 m, estimated area ca. 3.10 ha. A large scar in the northern face allows access to third and fourth millennia B.C. occupation deposits. Although a lower settlement may well have existed this was not observed, possibly because it has been obscured by the adjacent cultivated and irrigated areas.

Situated within an irrigated karstic basin which has an abundant water supply. Down valley towards the İncesu Deresi the water supply dwindles, orchards and irrigation ceases, and the valley becomes dry. The total area of modern irrigation, orchard, and intensive cultivation is ca. 5 km x 0.5 km, i.e., 250 ha.

The site was only visited briefly. The mound was sketched and pottery collections were made of the following areas (fig. A.20b): a) base of mound, b) base of mound, c) top of mound, d) mound mid-slope, and e) general collection. Two examples of Halaf-like pottery are illustrated on figure B.26. Counts of diagnostic pottery are given in table B.5.

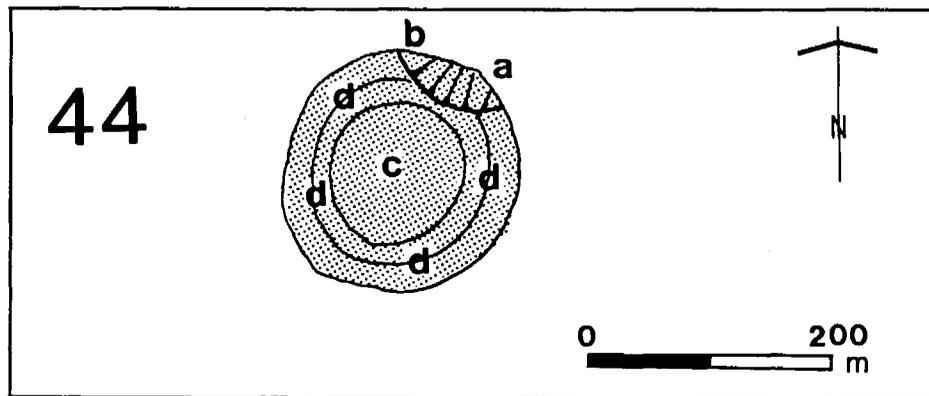


Figure A.20b. Site 44 (Bozova Höyük).

Site 45 (Soğat Tarlası)

Location (fig. 3.1): Within Bozova basin between the two small lakes: Büyük Göl and Küçük Göl. 2 km SW of Bozova town.

Although this site was visited, insufficient information was gained in the time available to provide a full description. The lithic site of the late Pleistocene-early Holocene is described in Braidwood and Çambel (1980).

Site was described as a 50 x 90 m mound 2–3 m high. A small pond was to the northwest of the site. A 2.50 m deep trench was excavated in the mound. It yielded substantial amounts of 'Amuq F pottery in the top one meter. The lowest 1.50 m of occupation deposits yielded a blade tool industry with some microliths. There were many similarities however between the lithics of both occupation phases (Braidwood and Çambel 1980, p. 43).

Site 46

Location (fig. 1.6): Adjacent to a dry valley tributary of the İncesu Deresi and 2.80 km SSE of Şaşkan village.

Period occupied: Post-Medieval.

Description: A very small site visible as gray ashy soil veneered by a scatter of foundation stones. Occasional sherds included bright green post-Medieval glazed wares. Scatter covers approximately 0.25 ha.

Situated on south-facing slope ca. 300 m from the İncesu which appeared to be the site's water source. The adjacent ephemeral stream channel is rapidly aggrading.

The site had been plowed when visited in 1983.

The site was not sketched; only a very small sherd collection was made.

Site 47

Location (fig. 1.6): On spur overlooking left bank of İncesu Deresi below Incirli-tepe 3.60 km SSE of Şaşkan.

Period occupied: Date uncertain but possibly Iron Age.

Description: A very sparse scatter of pottery which also included a single fragment of basalt quern. Extends over an approximate area of 0.15 ha. Site consists of gray soil littered with limestone fragments, most or all of which, however, may come from the underlying limestone. Possible foundation stones may have eroded out of the southern slopes of the site.

The site is within a generally heavily eroded area of limestone. The lower colluvial slopes and flood plain do offer some cultivable land, probably enough for a small site as this. The İncesu Deresi, which is within 150 m, was the site's water source. Site was only visited briefly. After a careful search only a small number of diagnostic sherds were collected. Finds are illustrated on figure B.12.

APPENDIX B

THE FINDS

Surface finds from the multiperiod sites surveyed usually provided a large range of ceramics, some of which could be related to known assemblages excavated from elsewhere in the Near East. From this evidence it was possible to infer some of the main periods of occupation at each site although inevitably a large number of ceramics remained as 'not diagnostic.' Although sampling techniques, as discussed in chapter 3, can sometimes resolve the surface pottery into chronologically distinct groups, there is always some uncertainty regarding the integrity of such assemblages. As a result of the complications posed by the large multiperiod site assemblages it was found that these sites could only provide well-defined groups if the pottery was either plucked straight from open sections, as was the case at Site 18, or if the ceramics were so well known from reference collections from Kurban Höyük that specific diagnostics could be selected from the large range of surface pottery. The latter recourse, although not providing any new ceramic data, did serve to demonstrate the contemporaneity or otherwise of the site in question with the reference site of Kurban Höyük.

In contrast to the multiperiod sites, many low or flat sites appeared to have been occupied for short intervals of time. External ceramic parallels supported this assumption by demonstrating that such sites included only a narrow range of pottery types. The short range site assemblages when used in concert with the Chalcolithic and Early Bronze Age record from Kurban Höyük made it possible to order sequential ceramic assemblages for the area from the sixth millennium B.C. until approximately the thirteenth century A.D.

The one substantial gap, which occupied most of the second millennium and the early part of the first millennium B.C., was partly filled by reference to external parallels from sites in eastern Turkey, Sultantepe in the plain of Harran, and from a variety of published sources in Syria. Although additional comparative material has emerged through discussions with the excavation teams from the nearby sites of Lidar and Gritille, some uncertainty still remains, and this gap will be filled only when the appropriate sequences from such multiperiod sites are published.

First, representative pottery groups are illustrated for the short range or 'single period sites.' These provide the chronological sequence upon which the settlement phase maps of chapter 4 are based. Additional assemblages, selected from specific multiperiod sites, are inserted where the phase in question was not present on short range sites in the area. Such supplementary assemblages are included for the Late Chalcolithic B (pre-Uruk) period from Site 18 and from the mid-late EB from Site 17.

Second, selected ceramic groups are illustrated for the multiperiod sites within the immediate survey area of Kurban Höyük, as defined on figures 1.6 and 3.1. The pottery from these sites (Sites 2, 7, 8, and 39) supplements those forms illustrated from the short period sites and provides additional corroborative evidence of the occupation periods of the sites in question.

In addition, noteworthy assemblages from the more distant multiperiod sites are illustrated and briefly summarized. Such sites were only rapidly and haphazardly sampled in order to define the major nodes of settlement systems contemporaneous with Kurban Höyük. Consequently, Early Bronze Age sherds are over represented in the collections from the extended survey area. Nevertheless, worthwhile supplementary assemblages did emerge, namely for the Halaf to Middle Chalcolithic and early Islamic (ninth-tenth centuries) periods at Site 18. In addition, a small group of mid-late EB vessels from Site 43 are illustrated to supplement those from Site 17. Because the repertoire of early second millennium pottery is little known for the area of the Atatürk dam, a number of possible MB vessel forms from Sites 29, 43, and 44 are illustrated on figure B.27.

It has not been possible to publish the full range of ceramics collected from the more distant multiperiod sites, but the evidence for ceramic phases is given in tabular form (tabs. B.2–B.5, below).

Finally, a selected range of pottery from the field scatter sample squares is illustrated and described on figure B.28 and in table B.6.

The extensive chronological range under consideration necessitated a brief appraisal of pottery types, and consequently only selected ceramic parallels are cited. The main body of reference material for survey periods D-H and M is the Kurban Höyük Type Series as assembled by G. Algaze (KH II). For the remaining periods selected references are drawn from published and unpublished sources in Eastern Turkey, the Eastern Mediterranean, Syria, and Iraq.

In the catalogs which follow, vessel form has only been described where necessary. When a distinctive, known ware type is described, for example late Roman 'Brittle Ware' or EB 'Cooking Pot Ware', this title is given first and is followed by vessel color, temper, diameter, and the area from which it was collected (e.g. Area a, etc.).

Reference to the final report on the excavated pottery from Kurban Höyük is to Algaze, *Town and Country in Southeastern Anatolia, Vol. II: The Stratigraphic Sequence at Kurban Höyük* which is abbreviated in the text to KH II followed by the appropriate period number and pottery-type designation.

Selected groups of sherds from most of the surveyed sites are stored for future reference in the Urfa Museum. Site numbers are usually preceded by the letter R (R12, R14, et cetera) in order to distinguish them from those retained from the Kurban Höyük excavations.

Micro-samples, in powdered form, from selected Chalcolithic and Early Bronze Age sherds are being subjected to neutron activation analysis and results will appear in a forthcoming Oriental Institute doctoral thesis by Mary Evins.

SITE 28 (KUMARTEPE): NEOLITHIC PERIOD

POTTERY

Pottery from both the surface and from open cuts over the river was predominantly chaff tempered. Sand tempering was also common, however, and several sherds were completely devoid of chaff. Vessel bodies varied from reddish brown to black, although black, dark gray or grayish brown were most frequent. No painted sherds were found during surface collection, but excavations conducted by Dr. J. Roodenberg in 1983 recovered a small quantity of red painted sherds (Roodenberg et al. 1984, p. 6, fig. 5).

The predominant forms found during survey were handmade, round-based open bowls or holemouth jars which compare closely with those recovered by excavation in 1983, but the latter corpus included more complete forms. Also the range of forms was extended by excavation to include platters and 'collared jars.' Jars with prominent horizontal lugs were one of the most characteristic forms found during survey. Other related forms included (fig. B.1: 6) a concave-up horizontal lug or ledge handle set immediately below the rim. A horizontally pierced vertical lug (no. 8) appears to be from a suspension vessel. In general vessel walls varied from 5–6 mm thick for the finest wares up to 16–20 mm for the coarsest.

Except for some holemouth jar forms which appear to be a long-lived type, there was no overlap between the Site 28 assemblage and those from the Chalcolithic sites surveyed. Paramount was the virtual absence of painted wares from Site 28 in contrast with, for example, Halaf period sites where they formed the most conspicuous element of the surface assemblage. Also, the massive horizontal lugs were quite unlike the small, stub-like handles of Halaf-Middle Chalcolithic jars and these serve as one of the diagnostic features of the Kumartepe pottery. Similar lugged forms occurred in the 'Amuq A and B assemblages (e.g., Braidwood and Braidwood 1960, figs. 40 and 41). Some similarity between the Kumartepe wares and Dark Faced Burnished Ware of the 'Amuq has also been suggested, but the distinctive range of decorated wares from the 'Amuq is not present at Kumartepe. Parallels have also been suggested between the excavated assemblage and vessels from Neolithic levels at Mersin (Roodenberg et al. 1984, p. 8 and Garstang 1953, p. 19) as well as from Tell Aswad VIII–VI, Telul Breilat I–II, and Mafraq Slouq on the Balikh (Voigt in press). On the basis of artifactual parallels, Roodenberg has suggested a date of around the mid sixth millennium B.C., whereas a radiocarbon date indicates that the base of the sequence dates from the early sixth millennium B.C. (7930 ± 80 B.C., uncalibrated, see footnote 5).

GROUND STONE ARTIFACTS (fig. B.1, nos. 19–24).

Of the stone artifacts, the open bowl, thick-walled but with smooth, carefully ground surfaces, is the most characteristic form. These were invariably of a hard, marble-like limestone which in one or two cases was veined with pink or purple plumes. Such vessels formed common surface finds, but only a small number were excavated (Roodenberg et al. 1984, fig. 8, nos. 5–8). The Kumartepe bowls differed in both medium and size from the small finely carved soft-stone bowls characteristic of the Halaf settlements in the area. Other ground stone artifacts included small bracelets, celts, and a small anthropomorphic figurine, the last two artifacts coming from excavated contexts only (Roodenberg et al. 1984, fig. 8: 1, 2; and fig. 9).

CHIPPED STONE TOOLS (by Mary M. A. McDonald)

Excavations in 1983 yielded a more representative lithic sample than the surveys and consequently only a single “‘Amuq point” is illustrated and discussed here (fig. B.1:25). The tool, made on a thick sectioned blade is covered on its dorsal surface with narrow, parallel lying, steep retouch scars which meet at its central ridge. The intact proximal end is tapered into a tang, and this portion of the tool bears retouch scars on the ventral surface as well.

This tool fragment, with its triangular cross section and fully retouched dorsal surface, resembles the “‘Amuq points” defined by J. Cauvin at Byblos (1968, p. 48ff.). ‘Amuq points have been found at a number of sites near the coast: at Mersin (Garstang 1953, fig. 5), at Judaidah on the ‘Amuq Plain (Braidwood and Braidwood 1960, fig. 60), at Ras Shamra (Contenson 1962, p. 505), and at Byblos and as far south at least as the Jordan Valley (Stekelis 1972, pl. 23:4). They occur also in several of the levels at Çatal Höyük on the Konya Plain (Bialor 1962). Inland to the east, they are reported at Ramad (Contenson and van Liere 1964) and Tell Aswad in the Damascus Basin (M.-C. Cauvin 1974, p. 61), and at Abu Hureyra (Moore et al. 1975, p. 63) and Bouqras (Contenson and van Liere 1966) on the Euphrates in Syria.

As for the temporal span of ‘Amuq points, most published examples are from sixth millennium B.C. pottery bearing sites or levels. This is true of ‘Amuq points from Çatal Höyük, while those found at the coastal sites listed above are all from sixth millennium or even later deposits (J. Cauvin 1968, p. 97 and p. 278). At the inland Syrian sites, however, ‘Amuq points occasionally are found in contexts pre-dating 6000 B.C. Certainly at Abu Hureyra and Tell Ramad they occur in sixth millennium, ceramic Neolithic deposits. But they are also found at Bouqras, a slightly earlier, partially aceramic site, and are reported from the early seventh millennium Pre-Pottery Neolithic site of Tell Aswad (M.-C. Cauvin 1974, p. 61). ‘Amuq points seem far from ubiquitous on seventh millennium sites, however, none have been found, for instance, on excavated or surveyed sites in the Balikh Valley in Syria (M.-C. Cauvin 1972; Copeland 1979).

On the basis of this comparative evidence alone it is difficult to suggest a precise date for the ‘Amuq point from Site 28. While it is probably from a sixth millennium pottery bearing deposit, it could in fact be up to a millennium older or younger.

KUMARTEPE POTTERY AND STONE CATALOG

Where finds are from exposed sections the appropriate context numbers (Ct) are given. Otherwise, all finds are from the surface. All pottery is handmade.

POTTERY CATALOG (fig. B.1: 1–18)

1. Lug. Pale brown surface, black core. Coarse sand and sparse chaff. Slightly polished exterior. Made as an integral part of body. Diam. ca. 26–30 cm. Ct 217.
2. Lug. Red-brown oxidized exterior, some chaff impressions. Black core, abundant chaff. Both 2 and 7 were broken off at body suggesting that they were attached separately.
3. Lug. Red oxidized exterior, black core. Common chaff, occasional medium sand. Appears to have been made as an integral part of body.

4. Jar rim with lug. Dark gray-brown surface with traces of burnishing; surface otherwise smooth. Core pale brown towards exterior dark gray in center. Abundant medium and coarse sand. Diam. ca. 20 cm. From eroding cut over Euphrates.
5. Lug. Pale red-brown exterior, pale gray brown interior, black core. Common chaff and fine-medium sand. Surface impressed with medium sand, chaff faced exterior. Ct 215.
6. Jar rim with lug. Pale brown exterior, gray core. Core moderately hard, fine with some fine sand. Chaff rare but occasional impressions on interior face. Diam. ca. 12 cm.
7. Lug. Pale red exterior, pale brown core. Abundant chaff, rare sand. Ct 217.
8. Pierced vertical lug. Yellowish red surface, pale brown core. Abundant fine chaff, a little white sand temper. Pierced hole 4–5 mm. Ct 219.
9. Rounded base. Gray to dark gray surface, gray core. Coarse sand. Trace of burnishing on exterior. Ct 225.
10. Red-brown oxidized surface and outer core; remainder of core black. Abundant chaff, sparse medium-coarse sand, common voids. Irregularities in profile may result from coil manufacture. Diam. ca. 18 cm.
11. Very pale gray brown surface; slightly oxidized to orange beneath exterior surface. Core pale gray-brown. Hard; medium sand. Diam. ca. 26 cm. Ct 219.
12. Very pale brown surface; exterior smooth. Hard; black core. Fine sand temper. Diam. ca. 18 cm.
13. Yellowish red exterior, red-brown interior, black core. Occasional coarse sand, common chaff, especially on exterior. Ct 215.
14. Dark gray brown to pale brown burnished exterior; rough, pale brown interior. Black core moderately hard. Medium sand. Rare chaff. Diam. ca. 24 cm. Ct 220.
15. Pale brown to pink surface, pale brown core. Hard; fine and medium sand. Ct 224.
16. Yellowish red surface, oxidized to brown around rim of core, remainder of core black. Fine-medium sand, abundant chaff. Diam. ca. 20 cm. Ct 228.
17. Pale red-brown surface. Core: red-brown-gray-red-brown-gray from exterior to interior. Coarse sand. Diam. ca. 20 cm.
18. Pale brown exterior, common chaff impressions. Interior encrusted by calcium carbonate. Pale gray core, abundant chaff. Diam. ca. 28 cm. Ct 215.

Body Sherds Not Illustrated

1. Dark gray-brown burnished exterior, pale gray interior. Hard pale brown core. Fine fabric with a little fine-medium sand and occasional irregular voids. Ct 228.
2. Red slipped and polished exterior, pale brown interior. Very dark gray core. Occasional fine-medium sand. One large limestone grit. Common chaff.

STONE CATALOG (fig. B.1: 19–25)

Nos. 19–23 are all of hard white fine grained metamorphic limestone or marble.

19. Bowl, 25 percent present. Well made with smooth surfaces. Diam. ca. 22 cm. (N.B. Thin line on drawing indicates upper limit of calcium carbonate encrustation.)
20. Bowl. Purple veins; flawed by a single yellowish brown quartz inclusion on lip. Otherwise well made with smooth surface. Diam. 14 cm. Ct 221.
21. Bowl. Roughly made, elliptical in plan. Very rough interior surface.
22. Bowl, ca. 20 percent present. Smooth exterior surface, roughened interior. Partly encrusted with calcium carbonate. Diam. ca. 26 cm.

- 23. Bracelet fragment. Very smooth exterior surface. Two external girth grooves. Interior heavily encrusted with calcium carbonate. Diam. ca. 6 cm. Ct 216.
- 24. Bracelet fragment. Dark gray-green, hard siltstone. Plain, smooth surface. Diam. ca. 6 cm. Ct 225.
- 25. "Amuq point" of dark gray flint. Remaining length 7 cm (see text).

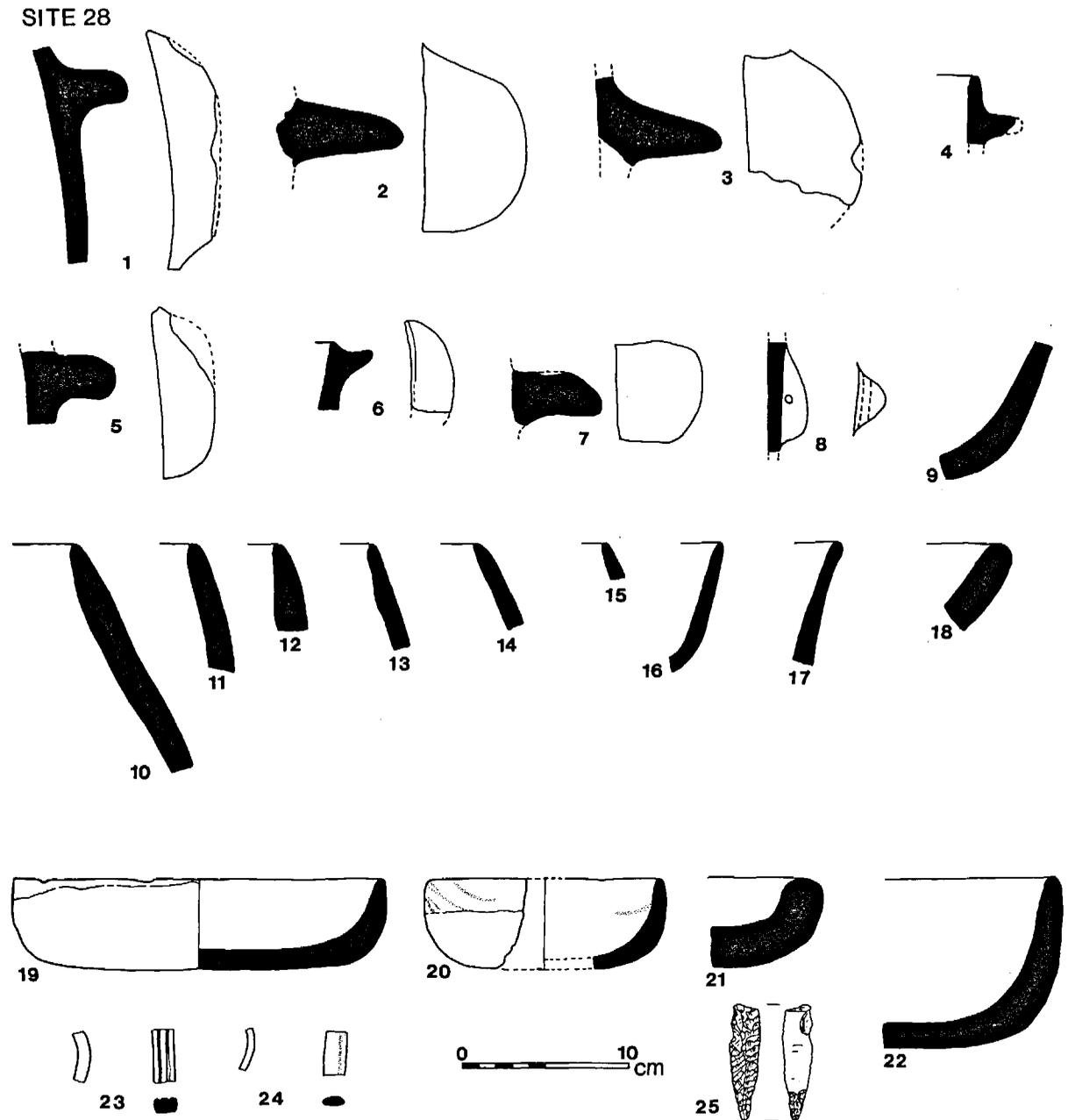


Figure B.1. Neolithic Pottery and Stone Artifacts from Site 28 (Kumartepe).

SITES 20, 27C, AND 42: HALAF AND RELATED WARES

Site 20, situated on terrace I above Kurban Höyük, produced the best, apparently unmixed, assemblage of Halaf type pottery within the survey area. With the exception of Byzantine wheelthrown wares which belonged to field scatters emanating from Site 14, the ceramics of Site 20 appear to belong to a brief chronological span. There was no evidence of either Neolithic wares characteristic of the Site 28 assemblage, nor any other type of Neolithic ware known from the region. The Ubaid-like wares found at Sites 11, 25 or 18 were also lacking.

Surface collection was initially from sample squares (see *App. A*), but in later seasons more general collections were made by 'haphazard pickup.' Although total collections were made from the sample squares the ware types were not representative of the original pottery assemblages. Instead, they were heavily biased towards the more resistant fine wares. Softer, usually chaff tempered coarse wares, of which only a small number are illustrated, disintegrated during prolonged exposure and consequently only appeared in years following plowing.

The painted wares probably included both locally made products and imported wares, but it was impossible to provide a meaningful separation. When not abraded as a result of long exposure, the paint was of a typically lustrous Halaf type. Colors varied from very dark gray (10YR 3/1) through reddish gray (5YR 5/1), reddish brown (5YR 5/4) to red (2.5YR 5/6). Some gray hues may have resulted from deterioration of original redder colors and there was no evidence of the Ubaid-like matte painting characteristic of Sites 11 and 25. Although most vessels were monochrome painted, the small pierced lug (fig. B.2: 31) featured both dark red and brown painted stripes on the vessel exterior.

Vessel bodies were mainly smooth and evenly fired although occasional examples exhibited a slightly reduced core. Tempering, when visible, was usually of fine sand, but some vessels included small white, brown or red inclusions. Tiny voids were also visible in many of the clay bodies.

Vessel forms at Site 20 included flared rim jars (fig. B.2: 23, 25, and 33), holemouth jars (fig. B.2: 26, 27), collared rim jars (fig. B.2: 24) and several necked or shouldered forms (fig. B.3: 2, 5). Small squat lug handles were pierced both vertically and horizontally (fig. B.2: 30, 31). Fine ware bases, although not common, included the characteristic Halaf-type flat base (fig. B.3: 8). In contrast, the low ring base (fig. B.3: 7) is a less common feature of Halaf assemblages. Figure B.3: 1 (and possibly fig. B.2: 23, 25), although illustrated as the flaring rim of a narrow necked jar may in fact be a high pedestal base or fruit stand.

Decoration included a range of standardized geometric designs: composite or multiple chevrons, crosshatching, crosshatched panels, and various dot patterns. As well as being characteristic of imported fine wares, these are also present on, for example, 'local painted ware' of 'Amuq phase C. The composite chevron design on the interior rim of fig. B.2: 22 closely resembles a local ware sherd from that phase (Braidwood and Braidwood 1960, fig. 115: 8). More distinctive Halaf motifs such as the dot and butterfly and large and small solid circles (fig. B.2: 17, 18) are also found on middle Halaf vessels from Arpachiyah (Mallowan and Rose 1935). The small soft stone bowl (fig. B.3: 9) contrasts markedly with the large, heavy Neolithic bowls of Site 28 (fig. B.1: 19–22), but is closely comparable to a small carved bowl excavated from the Halaf levels at Kurban Höyük.

Site 27C, located at the western end of Cümçüme village overlooking the Euphrates (fig. A.14) comprised a series of pits, one of which yielded the excellent small jar (fig. B.3: 12). The design consisted of lozenge-shaped panels filled with roughly executed hatching in red paint on the exterior and a typical Halaf swag design on the interior rim. The fabric was slightly sandier than most clay bodies from Site 20 and was also slightly unevenly fired. Also, the paint appeared to be slightly less lustrous than that on sherds from Site 20. Although this is a common Halaf form, cf. early Halaf jars from Arpachiyah (Mallowan and Rose 1935), the small assemblage from Site 27C makes it unwise to hazard whether this is an early Halaf form or just a local painted ware in the Halaf tradition.

Site 42, which also yielded a small assemblage of a generally Halaf type, did not yield diagnostic wares as reliable as those from the two preceding sites. Also, the presence of an Early Bronze Age Plain Simple Ware (PSW) form (fig. B.3: 21) raises the possibility of multiperiod occupation possibly related to third millennium habitation at nearby Site 37. The possibility that the site represents a Late Chalcolithic phase cannot be excluded.

In summary, although differing in size, the three assemblages might all belong to different phases of the Halaf period. The Site 20 assemblage might represent middle Halaf expansion onto the high terrace, the phases of Sites 27C and 42 remain uncertain.

SITE 20 POTTERY CATALOG (fig. B.2: 1–35)

1. Dark gray paint on exterior. Fabric: very pale brown throughout; fine sand.
2. Dark brown paint on exterior. Fabric: pale brown throughout; abundant fine sand with occasional small red inclusions.
3. Very dark gray paint on pink, slightly polished exterior. Fine very pale brown fabric with pink core. Area n.
4. Red-brown paint on exterior. Fabric: very pale brown throughout; common fine sand, rare small grits, many small voids.
5. Dark gray paint on exterior. Cream fabric with common fine sand and many very small voids.
6. Red paint on exterior. Pink fabric with common fine to medium white inclusions.
7. Dark gray paint on exterior. Very pale brown fabric; abundant fine sand. Area h.
8. Dark gray paint on exterior. Very pale brown fabric; common fine sand.
9. Brown paint on exterior. Pale brown fabric; occasional small, red inclusions.
10. Dark gray paint on both surfaces; crosshatch and horizontal banding on interior surface. Very pale greenish brown fabric with fine sand and common very small voids. Area p.
11. Dark gray painted horizontal band below dull orange painted lattice on exterior. Pale gray-brown fabric; fine sand, with occasional small brown inclusions.
12. Very dark gray paint on exterior. Very pale brown fabric; occasional fine sand and voids.
13. Very dark gray paint on exterior. Gray fabric with rare fine sand and occasional small, irregular voids. Area p.
14. Dark gray paint on exterior. Pale gray-brown fabric with abundant fine sand. Area g.
15. Dark gray painted multiple lattice on exterior. Fabric unevenly fired pink and pale brown with gray core; occasional sand and elongate voids. Area p.
16. Dark gray paint on exterior. Very pale brown with fine sand.
17. Dark gray paint on pink outer surface. Pale brown fabric with occasional fine-medium sand.
18. Red paint on exterior. Pale red fabric; abundant fine sand with some white inclusions. Area j.
19. Weak red paint on exterior. Pink fabric with abundant fine sand. Area p.
20. Slightly red-gray paint applied as dots and bands to exterior. Pale brown fabric with fine sand.

21. Ripple decoration appears as negative against red-brown painted background. Pale red fabric with thin yellow-red core; smooth with rare planar voids.
22. Dark gray painted zigzag design below rim on interior. Vestigial dark gray paint on exterior. Very pale brown with fine sand. Diam. 22 cm.
23. Red-yellow painted bands on interior. Smooth, very pale brown fabric. Diam. 17 cm.
24. Dark gray stripes painted on inside of rim. Pale gray-brown with fine sand. Diam. 21 cm.
25. Faded painted bands on exterior. Cream fabric; occasional fine sand sometimes ringed by rust-red haloes. Diam. 18.50 cm. Area b.
26. Very dark gray paint on exterior and interior. Pale gray-brown fabric with common fine sand. Diam. 10 cm.
27. Very dark gray paint on exterior and also a trace below rim on interior. Pink fabric; fine sand. Diam. 12 cm. Area a.
28. Red-brown painted band on exterior. Pale brown fabric with fine sand. Diam. 13 cm. Area p.
29. Dark gray painted band on exterior. Pale greenish-brown fabric; common fine-medium sand. Diam. 14 cm. Area p.
30. Everted rim jar with vertically pierced lug. Vestigial paint on exterior: light red-brown (above) and gray (below); interior band of strong brown paint. Very pale brown fabric with fine sand.
31. Lug handle, horizontally pierced. Very dark brown and red painted stripes on exterior. Pink, fine sand tempered fabric with gray core. Area h.
32. Red painted bands on exterior. Pink fabric with occasional small voids.
33. Broad black painted bands on exterior. Very pale brown with fine sand. Diam. 20 cm. Area p.
34. Dark gray-brown paint on exterior and interior. Very pale gray fine sand tempered fabric. Diam. 27 cm.
35. Red-black and red painted streaks on exterior; red painted meanders on interior. Pink fabric with gray core, some fine sand. Diam. 25.50 cm.

SITE 20 POTTERY CATALOG—CONTINUED (fig. B.3: 1–9)

1. Necked jar or fruit stand base. Vestigial red-brown paint on exterior. Pale brown fabric; common medium sand. Diam. ca. 14 cm.
2. Dark gray paint covers exterior. Gray fabric; smooth with fine sand. Diam. 28 cm. Area f.
3. Fabric: red-brown towards exterior, brown to interior, black core. Abundant chaff. Diam. 22 cm.
4. Pale brown surface, black core. Very abundant coarse chaff. Diam. 32 cm.
5. Pale brown throughout; occasional sand, common chaff. Diam. 13 cm.
6. Dark gray paint on rim interior. Pale brown fabric; fine sand.
7. Ring base. Pale brown with brown paint on exterior. Diam. 14 cm.
8. Flat base. Dark gray paint on exterior. Dull orange fabric with rare fine white sand. Diam. 7 cm.
9. Very dark green soft stone (chlorite?) bowl with slightly flattened rim top. Very smooth exterior, smooth interior. Diam. 5 cm.

SITE 27C POTTERY CATALOG (fig. B.3: 10–14)

10. Dark red-brown paint on exterior. Pink surface, dull orange core. Smooth with fine sand.
11. Very dark gray-brown paint on exterior. Cream fabric with common fine sand.
12. Red, roughly painted lattice within red, rhombus-shaped panels on exterior. Red painted design on interior below rim. Surface pink with pale brown core; common medium sand with occasional white inclusions and some irregular voids. Diam. 19 cm.
13. Dark brown surface, black core. Rare sand, common chaff. Diam. 26 cm.
14. Flat base. Gray brown exterior, pale red interior, black core. Occasional fine sand and chaff.

SITE 42 POTTERY CATALOG (fig. B.3: 15–21)

15. Red painted band on interior. Pale fabric with occasional medium sand (possibly from Euphrates).
Diam. 30 cm.
16. Red painted band on exterior of rim. Pink fabric with occasional fine sand. Diam. 31 cm.
17. Brown throughout; abundant medium sand including small limestone inclusions. Diam. 34 cm.
18. Vestigial painted band on interior rim. Plain Simple Ware, pale brown with common medium sand.
Diam. 38 cm.
19. Pale red-brown surface, black core; abundant medium-coarse sand. Slight groove below rim on exterior. Diam. 15 cm.
20. Pale red exterior, black core. Occasional sand, abundant chaff.
21. Early EB holemouth jar; wheel made. Pale red Plain Simple Ware; common white fine sand. Diam. 12 cm.

SITE 20

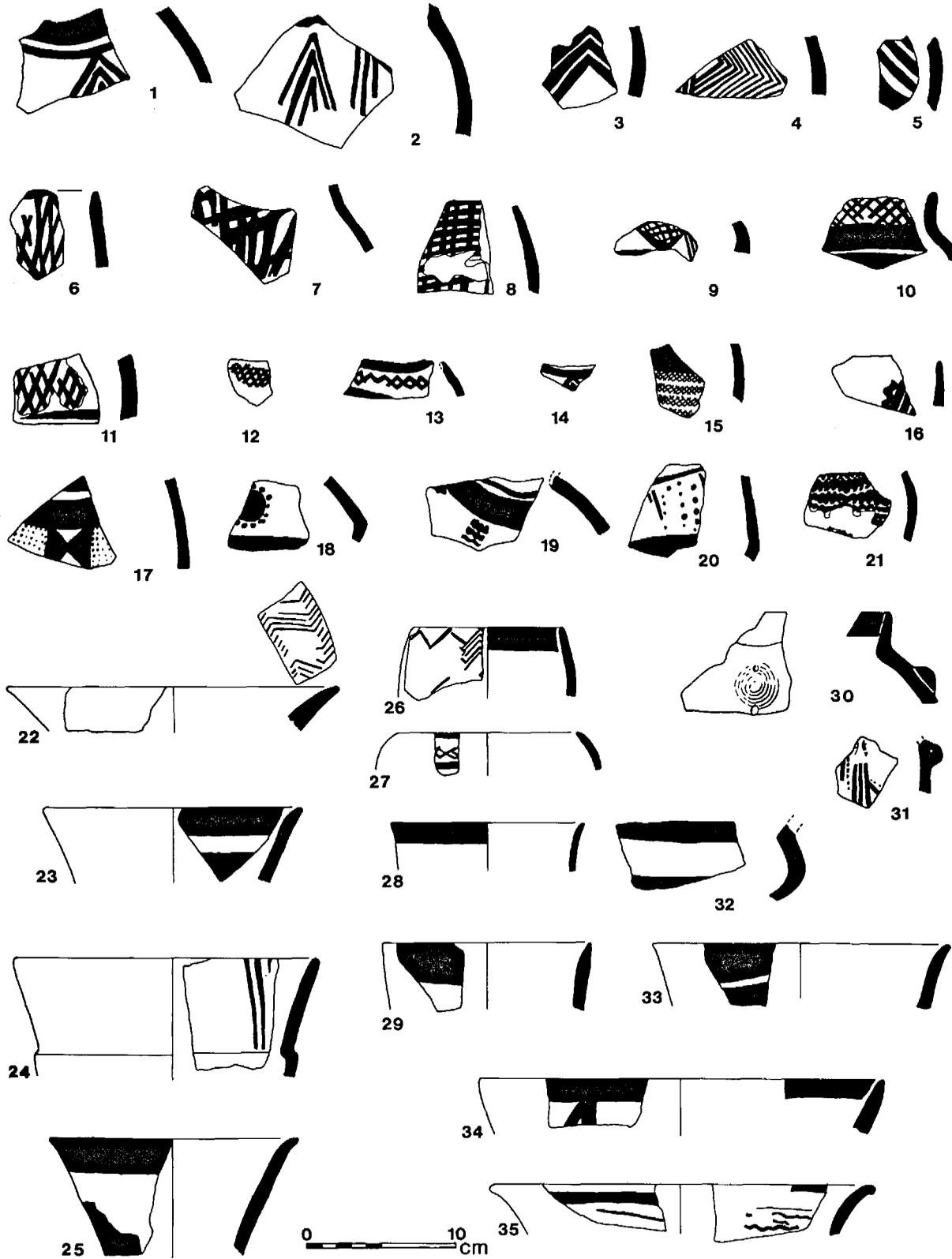


Figure B.2. Halaf Period Pottery from Site 20.

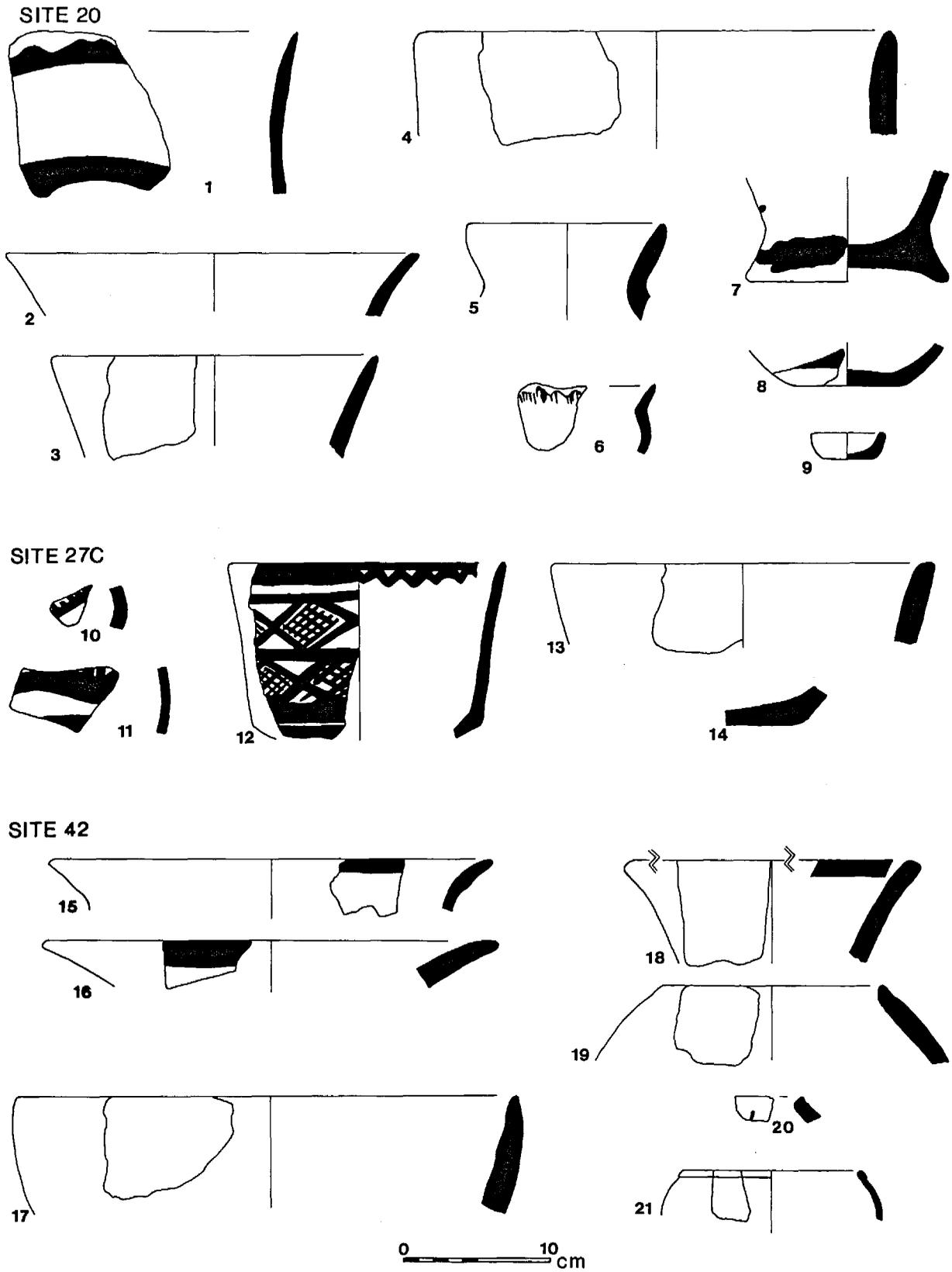


Figure B.3. Halaf Period Pottery from Sites 20, 27C (Cümçüme Koy), and 42.

SITES 11 AND 25: MIDDLE CHALCOLITHIC

At Sites 11 and 25, both small, apparently short-lived settlements on the banks of the Euphrates, it was possible to isolate assemblages of Ubaid-like ceramics. As at Site 20, no other occupation phases were present but the surface collections may be biased in favor of the harder painted wares. Therefore no significance should be placed upon the low incidence of chaff and coarser grit tempered wares. Although sample areas were laid out in 1981 along the river bank exposure at Site 11, pottery was too sparse to yield quantifiable results and in later years additional surface collections were made by haphazard surface pickup. The latter recourse was also taken at Site 25, and the illustrated assemblage is part of collections taken over three years.

The characteristic ware at both sites is a black, very dark gray (10YR 4/1) or occasionally dark brown (10YR 3/3) matte painted ware. The fabric, being very pale brown, cream or white (10YR 8/2) in color is usually considerably lighter than that of the Site 20 Halaf wares. The moderately hard, evenly fired, fine-medium sand tempered ware in some cases resembles the 'Plain Simple Wares' of the Late Chalcolithic and Early Bronze Age pottery, but here is designated Very Pale Brown Ware (VPBW) to differentiate it from the later wares. A smaller proportion of wares are slightly softer and unevenly fired with grit or occasionally chaff temper and plain, unburnished surfaces.

Some vessels show oblique hand smearing on either the inner or outer surfaces and most sherds illustrated appear to be hand made. Exceptions were the wheel thrown forms (fig B.4: 38–40) from Site 25, the last of which may be of Late Chalcolithic date (cf. Özdoğan 1977, pl. 93: 21, a PSW form of Late Chalcolithic-Early Bronze Age date from Hassek). Another wheel thrown ware (fig B.4: 13 from Site 11) is quite clearly a Hellenistic ring base which was probably part of an extended scatter of debris associated with Sites 9 and 10. The carinated sherd, (fig. B.4: 28) from Site 25, like vessel fragments of similar type found scattered over Site 20, may be part of the late Roman-Byzantine 'field scatter' which veneered most of the surface of terrace III (ch. 3).

The small number of painted wares yielded the following range of motifs: painted bands, either wavy or straight, crosshatched lattice (fig. B.4: 20) or solid triangles, all of which are familiar on Ubaid-like wares within the northern Ubaid zone of the Syro-Mesopotamian steppe (cf. 'Amuq phase E, Braidwood and Braidwood 1960, figs. 144–158). Although the repertoire of motifs overlaps with those on Halaf sherds from Site 20, the fabric and quality of paint are sufficiently different to distinguish the two assemblages.

The small fragment of what is probably a lid-seated jar (Site 25, fig. B.4: 29) can be paralleled by similar examples of Ubaid-type wares from Arpachiyah (Mallowan and Rose 1935) and Tepe Gawra. Vessel forms comprise a narrow range of simple jars, holemouth jars, and open bowl/dish forms. In addition, both Sites 11 and 25 each yielded roughly formed handmade vessels with low relief knob handles (fig. B.4: 15 and 24).

There was no independent field evidence to demonstrate the chronological relationship of the Sites 11 and 25 assemblage to that from Site 20 and it was necessary to use external parallels to place the assemblages in their relative sequence. The general parallels between the Sites 11 and 25 assemblage and those of 'Amuq phase E are sufficiently close to differentiate them from the Halaf wares which preceded them. The presence of the wheelthrown forms (fig. B.4: 38–40) suggests that occupation at Site 25 possibly continued

into the Late Chalcolithic, but none of the distinctive chaff-faced wares of 'Amuq phase F nor the local Uruk type forms were present.

The pottery from Sites 11 and 25 has been grouped within the Middle Chalcolithic and therefore occupies the same time range as sherds excavated from the base of Trench C01 at Kurban Höyük. The latter wares cannot be equated with 'local' or 'northern' Ubaid wares of the Syro-Mesopotamian steppe, however, and the differences between the two assemblages imply that at least two phases of Ubaid-like painted wares must be contained between the end of the Halaf phase and the inception of Late Chalcolithic wares. Alternatively, such a ceramic difference may be accounted for by functional differences between the settlements concerned. However, in view of the close proximity of Sites 25 and 11 to Kurban Höyük (within some 3 km), if they were occupied at the same time it seems likely that all would tap the same trade network, even if to a different degree. Therefore, a chronological difference between the Kurban Höyük and Sites 25 and 11 assemblages seems most likely. If Kurban Höyük period VII can be correlated with the onset of the Ubaid period, then the Sites 25 and 11 ceramics may belong to a slightly later phase by which time the pattern of interaction within Syro-Mesopotamia had strengthened.

SITE 11 POTTERY CATALOG (fig. B.4: 1–16)

All vessels handmade unless stated otherwise.

1. Very dark gray-brown paint on exterior. Very pale brown fabric, occasional medium sand and voids. Hand smeared interior.
2. As for no. 1 but slightly sandier.
3. Very dark gray-brown paint on exterior. Pale brown surface, gray-brown core; fine sand. Area a.
4. As for no. 2. Area g.
5. As for no. 2 but common medium, black sand. Traces of finger marks on interior are horizontal, on exterior are oblique.
6. Paint and fabric as for no. 5. Area g.
7. Dark gray-brown paint on exterior, dark brown painted band on interior below rim. Pale brown exterior, pale red interior, red core. Hard with common medium sand.
8. Dense fabric, very pale brown with common sand. Area b.
9. Vestigial painted band on interior of rim. Pale brown surface and red core. Moderately hard with common small white inclusions.
10. Pink surfaces with red-brown core. Common sand. Area b.
11. Brown slipped surfaces, gray core. Possibly fragment of Hellenistic rim.
12. Pale brown surfaces, red-brown core. Common medium sand.
13. Hellenistic ring base. Brown exterior, dark red interior, hard, smooth pink core. Fine sand. Diam. 5 cm. Area f.
14. Pale brown throughout. Common white inclusions. Diam. 18 cm.
15. Small jar with knob handle. Brown surface, black core. Common medium sand with some chaff on exterior.
16. Brown painted bands on exterior and interior. Pink to pale brown surface, pale red core. Moderately hard and smooth with fine sand. Diam. 16 cm.

SITE 25 POTTERY CATALOG (fig. B.4: 17–40)

17. Dark gray painted wavy bands on exterior. Pale brown fabric, occasional sand. Diam. 14 cm.
18. Dark brown painted wavy bands on exterior and thin band of same on inside of rim. Diam. 12 cm.

19. Dark brown painted bands on exterior. VPBW, hard with sand. Diam. 12 cm.
20. Very dark gray-brown matte painted lattice on exterior. VPBW. Diam. 14 cm.
21. VPBW with fine sand. Diam. 24 cm.
22. VPBW off white. Diam. 20 cm.
23. VPBW. Diam. 23 cm.
24. Jar with knob handle in low relief. Dark gray-brown surface, black core; moderately soft with common medium sand. Diam. 22 cm.
25. Very dark gray painted band on exterior and dot and band on interior. VPBW. Diam. 24 cm.
26. Dark gray painted band on exterior. Hard, cream sand tempered ware. Diam. 22 cm.
27. Black paint on exterior. Very pale brown surface and pink core. Medium sand.
28. Very dark gray paint on exterior. VPBW with cream surface. Possibly a carination from a Byzantine amphora.
29. Lid-seated rim? Very dark gray painted bands on exterior. Cream exterior gray-brown core. Medium sand.
30. Pale red-brown surface, red-brown-gray core. Common sand to 3 mm, occasional chaff. Traces of handle stub.
31. Pale brown with gray core. Some sand.
32. Pale brown throughout, common medium sand.
33. Very pale brown throughout, very fine sand.
34. Very pale brown surface, pink-gray-pink core. Moderately soft with fine sand and common chaff.
35. VPBW. Oblique finger smear marks on interior. Diam. 15 cm.
36. VPBW. Diam. 17 cm.
37. VPBW. Diam. 18 cm.
38. VPBW. Wheel-thrown. Diam. 37 cm.
39. VPBW. Wheel-thrown. Diam. 15 cm.
40. VPBW. Wheel-thrown. Diam. 16.50 cm.



Figure B.4. Mid-Chalcolithic Pottery from Sites 11 and 25.

SITE 18 (YASLICA HÖYÜK): LATE CHALCOLITHIC B

Apart from Kurban Höyük, this small mound within the village of Yaslica was the only site to produce a significant assemblage of Late Chalcolithic, chaff tempered pottery. However, because of the extensive range of occupation (see below, Site 18, tab. B.3 for a complete ceramic periodization) the pottery described here had to be selected from a larger general collection made on site. This was on the basis of its similarity to the excavated assemblage from Kurban Höyük trench A which in turn had been related to the 'Amuq (phase F) sequence and other excavated groups within the region (KH II period VI, Ware 13/14).

Pottery collection at Site 18 was simplified by the presence of sections cut by the villagers down to the Chalcolithic levels of the mound, from which it was possible to extract a broad range of Halaf to Early Bronze Age pottery. Without such exposures, the earlier levels at this site may have been sealed from view and consequently it would be unwise to draw too much significance from the apparent absence of similar wares from other multiperiod sites in the area.

The pottery fabrics are dominantly chaff tempered (KH II period VI, Ware 13/14), with the exception of a carinated jar (fig. B.5: 6) of mixed chaff and grit temper and a wholly grit tempered jar (fig. B.5: 11). The poorly fired, moderately soft and friable fabrics differ markedly from the preceding fine, handmade ceramics of Ubaid and Halaf type. The vessels were apparently handmade although some may have been turned or finished on a slow wheel. With the arrival of Uruk type ceramics in the following Late Chalcolithic A period wheel thrown pottery became the norm.

The surfaces of the pots bore numerous chaff impressions and were matte brown, reddish brown or red in color with a reduced gray or pale brown core. One vessel (fig. B.5: 9) was slipped and three were burnished (all platters; fig. B.5: 14, 15, and 18).

From the small collection made it is possible to recognize three general vessel forms: Storage jars (fig. B.5: 1–5), carinated jars (fig. B.5: 6–12), and platters (fig. B.5: 13–18).

The storage jars are a common form at Kurban Höyük (KH II period VI, Jar 32, pl. 40: A, B) as well as in phase F of the 'Amuq sequence (Braidwood and Braidwood 1960, fig. 176: 22–24). Of the carinated jars, the diagnostic element—the carination—is usually missing. Therefore except for the two cases illustrated (fig. B.5: 8 and 12) the form can normally only be identified by its distinctive hooked rim. More complete examples are illustrated in KH II period VI, Jar 20, pl. 33: D–J. Finally, the distinctive platters or open bowls, some of which have burnished surfaces, are again present at both Site 18 and Kurban Höyük (KH II period VI, Bowl 26, pl. 32).

Among the miscellaneous forms are a large dish (fig. B.5: 21) and a small bowl (fig. B.5: 23). The latter is more familiar at Kurban Höyük in Plain Simple Ware, a ware which became increasingly significant during the following phase of the Late Chalcolithic.

With the exception of Kurban Höyük, the only other site within the survey area to yield Late Chalcolithic B pottery was Site 21 (Birecik Höyük) which virtually faces Kurban Höyük from the north bank of the Euphrates (tab. B.4).

In conclusion, the presence of this dominantly chaff tempered assemblage without the distinctive Plain Simple Wares with some Uruk-type parallels, appears to signify a period of Late Chalcolithic occupation immediately before the area came directly within the sphere of

influence of Mesopotamia during the Uruk period. Quantitative evidence documenting the change from the 'Amuq F type chaff tempered assemblage to Plain Simple Wares is presented in more detail by Algaze (KH II period VI).

SITE 18 POTTERY CATALOG (fig. B.5)

Storage Jars

1. Pale brown exterior, red-brown interior, gray core. Abundant chaff, rare grit. Diam. 30 cm.
2. Pale red exterior, red interior, dark gray core. Abundant chaff, rare grits. Diam. ca. 40 cm.
3. Pale red-brown surface, dark gray core. Temper as for 2. Diam. 38 cm.
4. Pale red surface, dark gray core. Common chaff, rare grits. Diam. 18 cm.
5. Brown surface, dark gray core. Temper as 4. Diam. 26 cm.

Carinated Jars

6. Brown exterior, pale red interior, pale brown core. Abundant chaff, occasional grit. Diam. 26 cm.
7. Red-brown surface, gray core. Common chaff and grit. Diam. 22 cm.
8. Red-brown surface, pale brown core. Abundant chaff, occasional grit temper. Diam. 34 cm.
9. Red slipped exterior, pale brown interior, pale brown-gray core. Abundant chaff. Diam. 27 cm.
10. Red-brown exterior, pale brown interior, dark gray core. Common chaff. Diam. 19 cm.
11. Red-brown surface, pale brown core. Common medium-coarse grit. Diam. 38 cm.
12. Fragment of carination. Red-brown surface, dark gray core. Abundant chaff. Exterior diam. 34 cm.

Platters

13. Red-brown surface, dark gray core. Abundant chaff. Diam. 34 cm.
14. Pale brown exterior, pale brown burnished interior, dark gray core. Common chaff. Diam. 33 cm.
15. Burnished red surface, pale brown-dark gray core. Common chaff. Diam. 34 cm.
16. Pale brown surface, dark gray core. Common chaff. Diam. 32 cm.
17. Pale brown surface, dark gray core. Common chaff. Diam. 32 cm.
18. Gray burnished surface, dark gray core. Common chaff. Diam. 32 cm.
19. Pale brown surface, dark gray core. Common chaff. Diam. 30 cm.

Other Forms

20. Dark gray exterior, gray-brown interior, pale brown-dark gray core. Common chaff. Diam. 28 cm.
21. Pale red surface, dark gray core. Common chaff. Diam. 38 cm.
22. Pale red brown surface, dark gray core. Common chaff. Diam. 15 cm.
23. Red exterior, gray-brown interior, dark gray core. Common chaff. Diam. 13 cm.

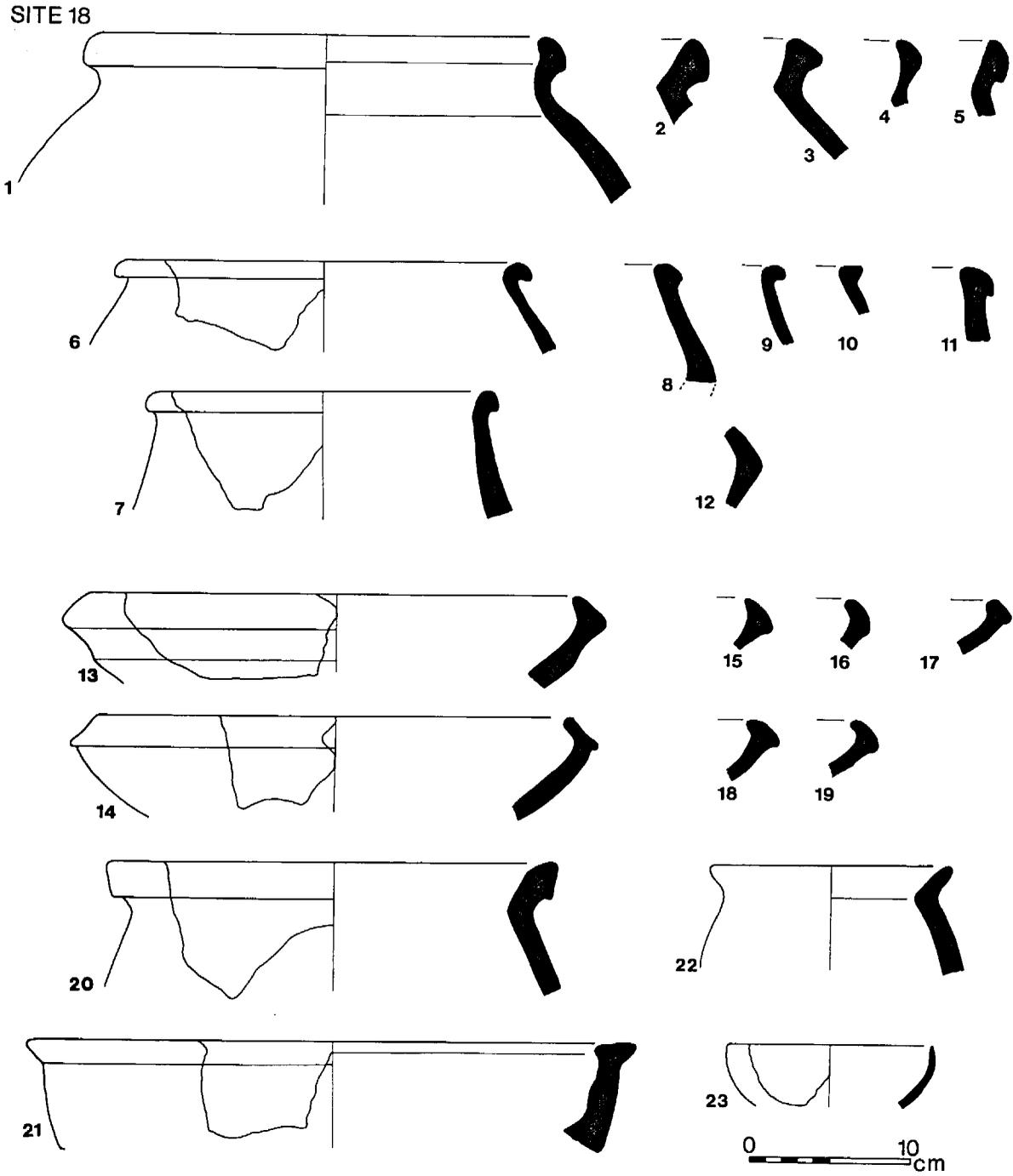


Figure B.5. Late Chalcolithic B Pottery from Site 18 (Yaslica Höyük).

SITE 15: LATE CHALCOLITHIC A

This small site, which overlooks the İncesu Deresi and is positioned roughly midway between the Şaşkan mounds and Kurban Höyük, produced a small well-defined assemblage of local Uruk-type forms. No other occupation phases were evident.

The wares are mostly wheelthrown and of a moderately hard sand tempered Plain Simple Ware. The gradual replacement of chaff by sand or grit temper is a noteworthy feature of the ceramic evolution during the Late Chalcolithic of the area and appears to be concurrent with the introduction of Uruk-related ceramic types (KH II period VI, fig. 137).

Many vessel forms from Site 15 are identical to those found in period VIA deposits at Kurban Höyük and the site is ceramically contemporaneous with the later phases of the Late Chalcolithic at Kurban Höyük. Vessels such as the band rimmed bowl (fig. B.6: 1; eleven examples found, cf. KH II period VI, bowl 9, pl. 20), bowl with incised decoration (fig. B.6: 2; cf. KH II period VI, bowl 12, pl. 21: I, K) and the undercut rim jar (fig. B.6: 6; four examples found, cf. KH II period VI, jar 11, pl. 26: C) are all characteristic forms in the later phases of period VI and are all ultimately of southern Mesopotamian derivation (KH II period VI, notes 6, 8, and 18 respectively). The beveled rim bowls (fig. B.6: 10 and 11), roughly made in a mold, are the only obvious chaff tempered ware present on the site and are also ultimately of Mesopotamian derivation. Similarly, the broad strap handle (fig. B.6: 18; two examples found), is also characteristic of the southern Mesopotamian Uruk assemblage (Wright in Adams 1981, Appendix, fig. 3.1).

Other forms which occur at both Site 15 and Kurban Höyük are the jar (fig. B.6: 4), the sharply everted rim jar or bowl (fig. B.6: 5; four examples found; KH II period VI, bowl 11, pl. 21: H). The last vessel is also comparable to examples from the 'Amuq phase G (Braidwood and Braidwood 1960, fig. 205: 6).

The bow-rimmed bowl (fig. B.6: 7) although similar to examples from various Chalcolithic contexts in the Levant, was a rare find at Kurban Höyük which yielded only a single example. This was contained in a mid-late EB context.

The necked jar (six examples), cooking pot, and holemouth jar (fig. B.6: 8, 9, and 13) although found in Late Chalcolithic levels at Kurban Höyük, exhibited an extended chronological range, continuing well into the third millennium B.C. In view of the absence of diagnostic EB ceramics from Site 15, an Uruk period date for these jars seems most likely. The only non-ceramic artifacts of note from the site were several chert sickle blades, one of which is illustrated (fig. B.6: 19).

The vessels illustrated form a small but distinctive assemblage which corresponds chronologically to the inclusion of the area into the Uruk economic sphere of influence during the second half of the fourth millennium B.C. Several characteristic Uruk-related forms, such as conical or drooping spouts are absent but were found at Site 39, 4 km up the İncesu Deresi (see below, Multiperiod Sites). The small pottery assemblage which was present on these two sites makes it impossible to draw conclusions on the basis of the presence and/or absence of specific forms however.

SITE 15 POTTERY AND FLINT CATALOG (fig. B.6)

All pottery is wheel thrown unless specified otherwise.

1. Pale red-brown surface; red-brown body with gray core. Common medium sand. PSW. Diam. 24 cm.
2. Pale brown PSW. Diagonal incised decoration on rim. Diam. 24 cm.

3. Pale red PSW. Lightly incised decoration on rim top.
4. Very pale brown PSW. Diam. 20 cm.
5. Pinkish-brown with gray core; PSW. Diam. 20 cm.
6. Pale greenish-brown PSW. Diam. 26 cm.
7. Pale pinkish brown PSW. Diam. 14 cm.
8. Pale greenish brown PSW. Diam. 16 cm.
9. Cooking pot ware: blackish red exterior, red-brown interior, black core. Common sand, grit, and chaff. Diam. 14.50 cm.
10. Beveled rim bowl. Pale brown body, slightly reddened to exterior. Common voids from burned out chaff, rare coarse grits. Moderately soft and handmade.
11. Beveled rim bowl. Pale brown. Fine voids from burned out chaff; also fine sand. Diam. 16 cm.
12. Pale brown PSW. Diam. 16 cm.
13. Pale brown PSW.
14. Pale brown surface, gray-brown core; PSW.
15. Pale red-brown surface, gray core. Common fine sand.
16. Gray throughout, occasional medium sand.
17. Pot lid(?) Red-brown surfaces, gray-brown core. Abundant fine sand. Pierced hole ca. 1.5 cm diam. Diam. 12 cm.
18. Strap handle. Pale brown PSW.
19. Broken sickle blade in pale gray brown chert.

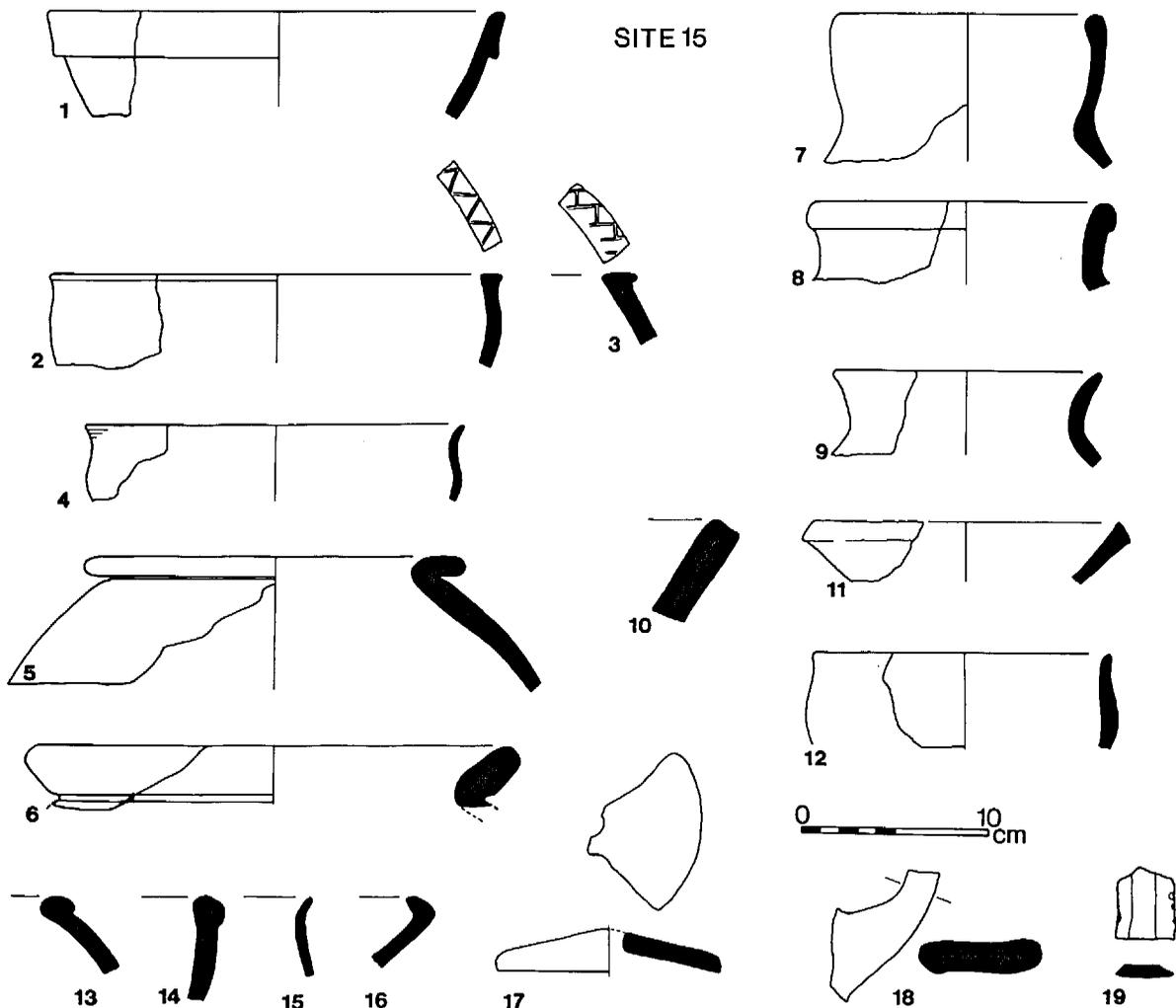


Figure B.6. Late Chalcolithic A Pottery and Flint from Site 15.

SITE 24: EARLY EB

Although situated within only 200 m of the late third millennium (EB-MB transition) Site 16, this small site produced a virtually pure assemblage of early EB ceramics. These were readily comparable in both ware and form to those excavated from the period V (A and B) deposits in sounding C01 at Kurban Höyük.

With the exception of cooking pots manufactured in a moderately soft, sand tempered, sometimes burnished ware (fig. B.7: 33–35 and 41), the predominant wares are subtypes of Plain Simple Ware (see previous section).

The most conspicuous and diagnostic vessel, the cyma-recta cup, (fig. B.7: 1, 2; cf. KH II period V, bowl 4a, pl. 43: F, J-O) was manufactured in a hard, fine, smooth, greenish type of Plain Simple Ware. Judging by wasters found on site, these were actually manufactured in the vicinity, a common trait at this time (KH II period V, p. 299 and note 37). The associated small ring bases (fig. B.7: 15–17) came in a variety of forms ranging from those with a low body angle (fig. B.7: 16) to higher-angled subtypes. A more detailed analysis and complete forms are given by Algaze in KH II period V.

The small quantity of cyma-recta cups did not allow them to be used to provide a more detailed chronological sub-division of Site 24, but a descendent of the band-rimmed bowl, KH II period V, bowl 12b does suggest the presence of an earlier occupation. Figure B.7: 25 (and possibly also 26 and 27) are related to the Uruk band-rimmed bowls (see Site 15, fig. B.6: 1) but continue into the Late Chalcolithic-early EB (Phase VB) at Kurban Höyük. Also possibly of this transitional phase are the small cups (fig. B.7: 6; KH II period V, bowl 5a, pl. 44: A, B, and H).

In addition to cyma-recta ring bases, bases were also either flat (fig. B.7: 18 and 19) or pedestaled (fig. B.7: 20–23). These are again characteristic of Kurban Höyük phase V.

The small holemouth jars (fig. B.7: 29–31; KH II period V, bowl 6b, pl. 44: S, T) were manufactured virtually throughout the third millennium B.C. and may even have developed from Uruk predecessors (see Site 15, fig. B.6: 13). Consequently their use as a chronological indicator is limited.

Although larger vessels are less common than on sites of the late third millennium, necked jars (fig. B.7: 12–14, 38–39) and large storage jars (fig. B.7: 37, 40, and 42) were present and again could be related to forms from Kurban Höyük period V.

Additional wares of note included the incised gray ware sherd (fig. B.7: 43) which is possibly related to incised wares of 'Amuq phase G (Braidwood and Braidwood 1960, fig. 221), and three body sherds of diagonal reserved slip (not illustrated).

The assemblage collected, especially significant diagnostics (see table B.1) such as the cyma-recta cups, has affinities with both phases G and H in the 'Amuq sequence and early third millennium assemblages from numerous other sites within the northern and western border region of Syro-Mesopotamia (KH II period V, p. 298 and note 29). Diagnostic forms uniquely attributed to the preceding Late Chalcolithic (Uruk) and following mid-late EB phases are absent from Site 24, although, as described above, certain fairly long-lived forms are present. It would seem that Site 24 was occupied during the ceramic phase that followed the Uruk period occupation of Site 15, but the length of the hiatus that separated the two occupations is unclear. The presence of a small number of Late Chalcolithic-early EB sherds at Site 24, seem to indicate that the hiatus was either short or even non-existent.

Table B.1. Counts of Diagnostic Vessel Types from Site 24.*

<i>Vessel type</i>	<i>Period V Type Number</i>	<i>Illustrated Examples (App. B)</i>	<i>Total Count</i>
Cyma-recta cup	B4	B.7: 1, 2	10
Bases (cyma-recta cup)	B4	B.7: 15–17	ca. 30
Globular cups	B5a	B.7: 3–5	10
Small cups	B5a	B.7: 6	2
Pedestal bases	—	B.7: 20–23	17
Cooking pots	J19	B.7: 33–35	3
Storage vessels	J17b	B.7: 37, 41, and 42	3* *
Holemouth bowl	B6b	—	3
Diagonal reserved slip (body sherds)	—	—	3

*Period V Type Numbers are from Algaze, KH II.

* *One storage vessel in cooking pot ware.

SITE 24 POTTERY CATALOG (fig. B.7)

1. PSW. Diam. 12 cm. Area c.
2. Pale greenish-brown, smooth, PSW. Diam. 17.50 cm. Area c.
3. Same as 2. Diam. 8 cm. Area c.
4. Same as 2. Diam. 12 cm. Area b.
5. Same as 2. Diam. 16 cm.
6. Pink, smooth, PSW. Diam. 12 cm. Area d.
7. Pink, PSW. Diam. 10 cm. Area d.
8. Pale brown, PSW. Area d.
9. Very pale brown, smooth, PSW. Diam. ca. 14 cm.
10. Pale greenish brown, smooth, PSW. Area b.
11. Same as 10. Area b.
12. Pale greenish brown, PSW. Diam. 13 cm.
13. Same as 12. Diam. 16 cm.
14. Pale brown, PSW. Diam. 24 cm. Area c.
15. Very pale brown, smooth, PSW. Diam. 3 cm. Area d.
16. Hard, green, smooth, PSW. Diam. 2 cm. Area b.
17. Pink, smooth, PSW. Diam. 5 cm. Area c.
18. Very pale brown, PSW. Diam. 3 cm. Area d.
19. Pale greenish-brown, smooth, PSW. Diam. 3.50 cm. Area b.
20. Pale greenish-brown, PSW. Diam. 6 cm. Area b.
21. Very pale brown surface, pink core, PSW. Diam. 8 cm.
22. Gray, moderately smooth, PSW. Diam. 6.50 cm. Area c.
23. Pale brown, common flecks of limestone sand. Diam. 11 cm.
24. Pale brown, PSW. Diam. 5.50 cm.
25. Very pale brown, smooth, PSW. Diam. 16 cm.
26. Pale brown, smooth, PSW. Diam. 18 cm.
27. Very pale brown, PSW. Diam. 24 cm. Area b.

28. Very pale greenish-brown, PSW. Diam. 18 cm.
29. Very pale brown, PSW, common sand. Diam. 23 cm. Area d.
30. Very pale brown, smooth, PSW. Diam. 20 cm.
31. Very pale brown, smooth, PSW. Diam. 13 cm. Area d.
32. Pale greenish-brown, smooth, PSW.
33. Cooking pot ware: pale gray surface, gray core. Abundant medium coarse sand including limestone. Diam. 18.50 cm. Area c.
34. Cooking pot ware: red-black surface, black core. Moderately soft with abundant sand. Diam. 21.50 cm. Area c.
35. Cooking pot ware: red outer body, dark gray core. Moderately soft with abundant sand. Diam. 30 cm. Area b.
36. Very pale brown surface, pale brown core, PSW. Diam. 32 cm. Area d.
37. Very pale brown, PSW. Diam. 50 cm. Area d.
38. Pale greenish-brown, smooth, PSW. Some medium sand. Diam. 20 cm. Area c.
39. Pale greenish brown, smooth, PSW. Diam. 14 cm. Area b.
40. Very pale brown, PSW. Diam. ca. 32 cm.
41. Cooking pot ware: dark gray-pale red exterior, pale red-brown interior, dark gray core. Abundant medium sand.
42. Pale brown surface, pale red core. Diam. 19 cm.
43. Gray throughout. Incised crosshatched and hatched design on exterior.

SITE 24

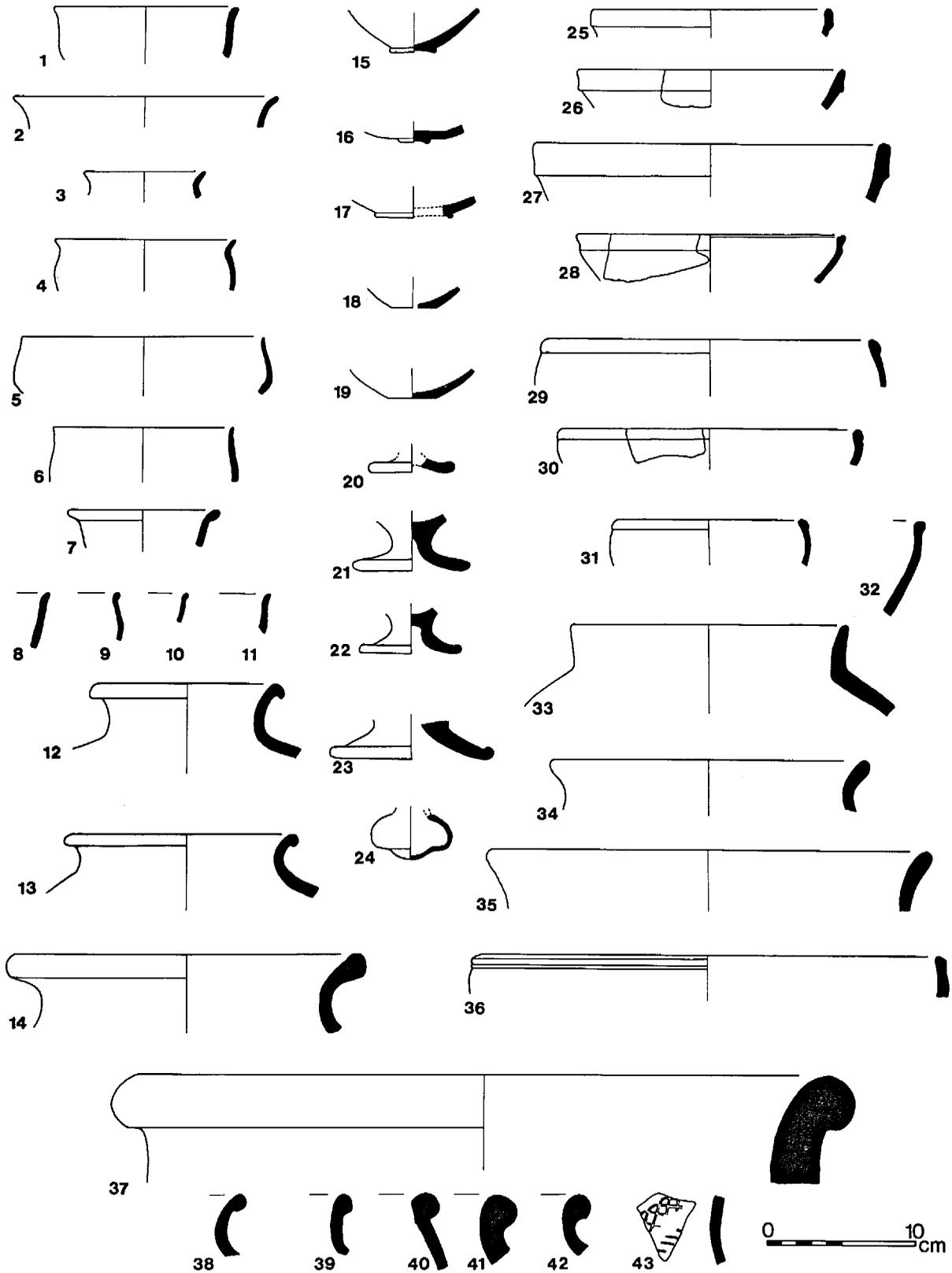


Figure B.7. Early EB Pottery from Site 24.

SITE 17 (ARIKÖK HÖYÜK): MID-LATE EB

No single phase sites of this period were found and consequently a representative ceramic group from a multiperiod site, in this case Site 17 (Arikök), has been chosen. The wares illustrated have all been dated by reference to the Kurban Höyük assemblage or by external parallels; they do not therefore comprise a stratigraphically well-defined group at Site 17. The illustrated group represents only a small sample of wares of this period and for additional forms reference should be made to Site 43 (below).

The mid-late EB pottery assemblage at Kurban Höyük differs markedly from that of the preceding early EB and includes a wider range of ceramic types and the addition of conspicuous fine wares.

The fine wares from Site 17 include conical cups in both metallic wares (fig. B.8: 1) and Plain Simple Ware (fig. B.8: 2); as well as small metallic ware bowls (fig. B.8: 3–5; KH II period IV, bowl 1 and bowl 5/6 respectively, pls. 53 and 54: S–Y). Conspicuous are the sherds of crudely painted ware: Karababa painted wares (fig. B.8: 15–19).

Although pedestal bases characteristic of the early EB still occur (fig. B.8: 13), they are less common. The Site 17 assemblage also includes straight-sided bases (e.g., fig. B.8: 14; KH II period IV, foot 1, pl. 73: J).

Burnished wares include Karaz type wares (fig. B.8: 6 and 7) and other handmade cooking pot wares (fig. B.8: 8–10). The illustrated group of Plain Simple Wares represents only a small proportion of the PSW assemblage for this period at Kurban Höyük. For example the grooved rim vessels (fig. B.8: 20 and 21) are only two examples of a wider range of vessels of this type (see Site 43, fig. B.27: 1–21, below). The bowl forms (fig. B.8: 22–26) are a common form at Kurban Höyük (KH II period IV, bowl 8) which develop in the succeeding EB-MB Transition period into a variety of bowl forms, some with incurving rims (see Site 16, fig. B.9: 1–37, below).

The mid-late EB assemblage at Site 17, like that from Kurban Höyük, has affinities with excavated assemblages ranging from the Habur basin of northern Syria to the southeast to the 'Amuq Plain and adjacent Mediterranean shore in the southwest. Closest affinities are with the Balikh headwater area, notably the Harran Plain (Prag 1970, fig. 8) as well as northern Mesopotamia. Certain wares can be paralleled in 'Amuq phase I and some burnished cooking pot wares and painted vessels suggest connections with the Anatolian Plateau and the upper Euphrates to the north.

Unfortunately, the chronological position of Kurban Höyük period IV is still poorly defined and can only be placed between the end of the first half and the last quarter of the third millennium, that is between the end of the Early Dynastic phase in Mesopotamia until well into Akkadian times (KH II period IV discussion).

SITE 17 POTTERY CATALOG (fig. B.8)

All vessels are wheelthrown, unless stated otherwise.

1. Metallic ware, gray throughout, orange painted bands on exterior. Diam. 8 cm.
2. Very pale brown, smooth, PSW. Diam. 12 cm.
3. Black metallic ware, smooth fabric. Diam. 8 cm.
4. Black metallic ware, polished exterior. Diam. 14 cm.
5. Brown, band painted exterior; gray metallic ware body. Diam. 14 cm.

6. Karaz ware: black burnished exterior, gray core, pale red burnished interior; common sand. Handmade with relief design on exterior. Diam. 28.50 cm. Area f.
7. Karaz ware: brown burnished exterior, black core, pale red interior; occasional coarse sand; handmade. Diam. 29 cm. Area f.
8. Cooking pot ware: black-red burnished exterior, red-gray core, matte red interior; grog and chaff temper; handmade. Diam. 31 cm.
9. Lid in cooking pot ware: black upper surface, gray-brown core, pale brown lower surface; abundant sand; handmade. Diam. 30 cm.
10. Cooking pot ware: pale brown, smooth surface, pale red-gray core; abundant sand; handmade. Diam. 13 cm. Area b.
11. Pale brown PSW with gray core. Diam. 32 cm. Area f.
12. Combed wash ware: red wash on pink, almost metallic body.
13. Gray surface, dark gray core; smooth, fine sand. Diam. 11 cm. Area b.
14. Cream surface, pale brown core, PSW; common fine-medium sand. Diam. 7 cm. Area f.
15. Keban painted ware: dark red paint on exterior; very pale brown, friable, core; sand temper. Area e.
16. Keban painted ware: red painted exterior; fabric, very pale brown with sand. Area f.
17. Keban painted ware: red-brown paint on cream, sand tempered body. Area f.
18. Keban painted ware: red painted exterior, pink, sand tempered body. Diam. 12–13 cm.
19. Keban painted ware: pink surface with red painted band on exterior, pale brown core; common medium sand. Diam. 34 cm. Area f.
20. Pale brown, gray core, PSW; common sand. Diam. 24 cm.
21. Cream with pale brown core, PSW. Diam. 22 cm.
22. Very pale brown, PSW, common sand. Diam. 25 cm.
23. Pink, pale brown core, PSW; common fine sand. Diam. 27 cm.
24. Pale brown, PSW; common fine sand. Diam. 22 cm. Area f.
25. Very pale brown, PSW; common medium sand. Diam. 36 cm.
26. Very pale brown exterior, pale red interior, red-brown core, PSW; common sand, slightly friable. Diam. 37 cm.

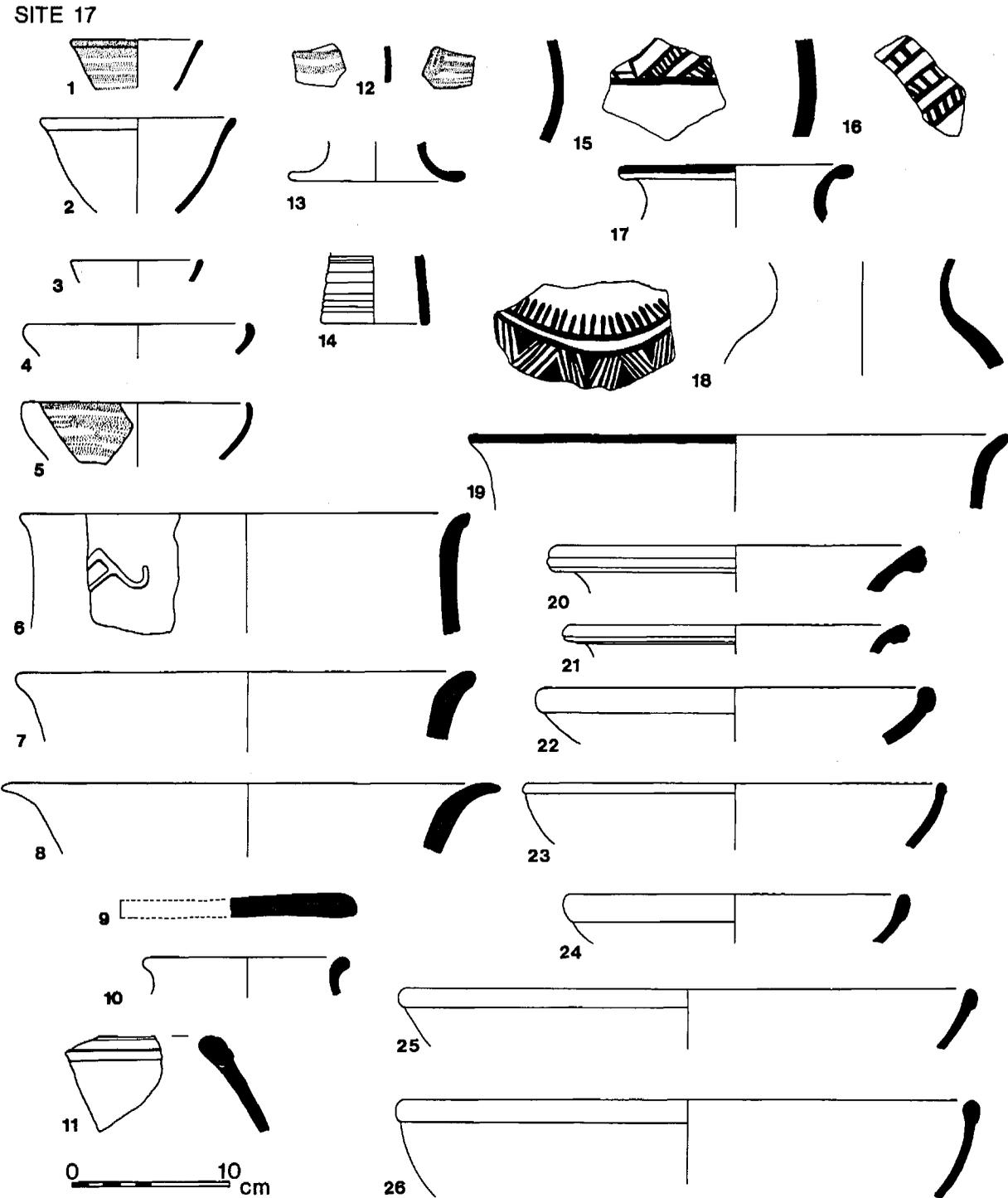


Figure B.8. Mid-Late EB Pottery from Site 17 (Arikök Höyük).

SITES 16 AND 41: FINAL EB OR EB-MB TRANSITION

Apart from a readily distinguished group of early EB diagnostic forms (fig. B.9: 28–30) which were probably related to the occupation of nearby Site 24, the pottery at Site 16 (Eskihayman Tepe) belonged to part of the final EB or possibly the transition to the MB. This phase is best characterized by the excavated assemblage from Kurban Höyük Area D. With the exception of three cooking pot wares (fig. B.9: 6, 32, and 33), all vessels were in Plain Simple Ware. The pottery could be subdivided into three general groups:

a. Those whose form had apparently evolved from mid-late EB prototypes. This group included bowls (fig. B.9: 13; KH II period III, bowl 9a) which closely resembles forms of the preceding period (cf. Site 17, fig. B.8: 22–26). At Kurban Höyük, this is a long-lived form extending from the mid-third millennium (period IV) until the end of occupation in period III. More enclosed bowls, some with inturned rims, appeared in period III (EB-MB transition) at Kurban Höyük as well as at Site 16 (fig. B.9: 14, 23–25, cf. KH II, bowl 9b). These can be roughly paralleled as far south as Tell Mardikh in Syria (Matthiae 1977, fig. 17; period IIB1). The related form (fig. B.9: 15), also occurred at Kurban Höyük (bowl 8c) and also in Mardikh IIB1 levels, dated by the excavator to 2400–2250 B.C. (Matthiae 1977, fig. 16). Even more pronounced incurved rims (fig. B.9: 16 and 17) are restricted, at Kurban Höyük, to period III.

Grooved rim jars (fig. B.9: 21, 22; both variants on KH II period III, jar 13, pl. 112) are also an evolved period IV form. At Kurban Höyük there is some evidence to suggest that the later examples (such as fig. B.9: 22, 45) exhibit deeper grooves. Similar vessels from EB IV contexts at Tell Hadidi in northern Syria testify to the use of grooved rim jars until the close of the third millennium B.C. (Dornemann 1979, fig. 18: 2).

b. Pottery which was unique to period III levels at Kurban Höyük included the following forms: the small jar (fig. B.9: 1; KH II period III, bowl 2) which is allied to the rilled cups or goblets at Hama, Phase J (Fugman 1958, figs. 74 and 85). Figure B.9: 27 (KH II period III form 58A) is apparently restricted to period III deposits at Kurban Höyük. Other bowls of Kurban Höyük period III are fig. B.9: 2 as well as fig. B.9: 11 and 26 (KH II period III, bowl 4). The last examples resemble a group from the Tell es-Sweyhat Area IV building complex (Holland 1977, fig. 2: 1–7), and a tomb group from Tell Hadidi (Dornemann 1979, fig. 12: 7, 8). Both examples would fall within the last quarter of the third millennium B.C.

c. Pottery which probably began during the final EB, and continued into the MB.

Figure B.9: 4 resembles one of a number of variants which were excavated from the period III settlement at Kurban Höyük (jar 17, pl. 114). Similar jars occurred in late third millennium contexts at Tell Hadidi (Dornemann 1979, fig. 14: 1–3) and early second millennium levels at Mardikh (Matthiae 1977, fig. 35, Mardikh IIIA).

Barrel jars (fig. B.9: 18, 20; cf. KH II period III, barrel 1b) do not occur in Kurban Höyük period IV (mid-late EB) but first appear during the late third millennium. The absence of single period mid-late EB sites in the survey area does not allow us to determine whether this form was truly absent from surface scatters of the mid-third millennium. However, only two rims were found after extensive searching at Site 16 in contrast to at least 13 from the EB-MB Site 13 (see below, Site 13, fig. B.10). Variants of the barrel jar form, although present in MB levels at, for example, Tell Mardikh, are not identical to those illustrated but demonstrate that the form continued in use well into the second millennium.

Large conical stands with exterior cordons, sometimes obliquely slashed, also appear during Kurban Höyük, period III (see also Site 13, fig. B.10: 39), and the two illustrated (fig. B.9: 36 and 37) resemble examples from Kurban Höyük.

Cooking pots continued in use, for example the burnished vessel (fig. B.9: 6) and two others (fig. B.9: 32, 33) which were paralleled in Kurban Höyük, period III levels (KH II period III, jar 30, pl. 135).

Site 41, a very small settlement, 3 km SE of Site 16, produced only a small pottery sample, but their correspondence to the types from Site 16 and Kurban Höyük period II settlements enable them to be convincingly dated to the final EB or EB-MB transition.

In conclusion, although certain characteristics of both mid-late EB and MB ceramic forms are present at Site 16, these appear to be the long-lasting elements. Diagnostic forms confined only to the mid-late EB settlement at Kurban Höyük, for example conical cups, 'Karababa painted ware' and certain MB metallic ware forms, are absent. Equally, many distinctive forms which are apparent at Site 13 are absent from Site 16. A preliminary comparison of the Site 16 assemblage with that from Kurban Höyük suggests that Site 16 (and probably 41 also) was occupied, not during the final phase of Kurban Höyük Area D, but during the preceding period IIIb (G. Algaze, personal communication). The presence of a waster of a small, vitrified jar suggests that, as at Site 24, at least some pottery was manufactured locally.

Chronologically, Site 16 appears to have been occupied towards the close of the third millennium or the very beginning of the second millennium, in other words during the final phases of the Syrian EB or during the earliest phases of the MB.

SITE 16 POTTERY CATALOG (fig. B.9: 1–37)

All vessels are wheelthrown, unless stated otherwise.

1. Very pale brown, PSW. Diam. 11 cm. Area a.
2. Pale brown surface, gray brown core, PSW. Diam. 10 cm. Area g.
3. Very pale brown, PSW. Diam. 11 cm. Area a.
4. Very pale brown, greenish brown, PSW. Diam. 10 cm. Area a.
5. Pink surface, pale brown core, PSW. Diam. 12 cm. Area g.
6. Cooking pot: burnished exterior; red-brown outer body, dark gray-brown inner body. Diam. 22 cm. Area f.
7. Pale brown exterior, pale red interior, red-gray core. Diam. 20 cm.
8. Pale brown, PSW. Diam. 22 cm. Area a.
9. Pale red exterior, gray-brown interior, gray core, PSW. Diam. 12 cm. Area g.
10. Pale brown slip on gray body with pale brown core, PSW. Diam. 14 cm. Area g.
11. Very pale red-brown, PSW. Diam. 17 cm. Area g.
12. Very pale brown, PSW. Diam. 36 cm. Area f.
13. Very pale, PSW. 23 cm. Area g.
14. Very pale greenish brown, PSW. Diam. 26 cm. Area a.
15. Pale brown and pale red-brown, PSW. Diam. 24 cm. Area a.
16. Pink, PSW. Diam. 24 cm. Area a.
17. Pink with gray core, PSW. Diam. 32 cm. Area a.
18. Very pale brown, PSW. Diam. 18 cm. Area a.
19. Pale greenish brown exterior, remainder pale brown, PSW. Diam. 32 cm.
20. Pale red, pale brown core, PSW. Diam. 31 cm. Area a.

21. Pink, and pale gray-brown, PSW. Diam. 20 cm. Area a.
22. Very pale red-brown exterior, remainder pale brown, PSW. Diam. 36 cm. Area a.
23. Pale brown, pale gray-brown core, PSW. Area g.
24. Pale red, gray-brown core, PSW. Diam. 30 cm.
25. Pale greenish gray, PSW. Diam. ca. 40 cm.
26. Pale brown, PSW. Area a.
27. Gray, moderately soft, common medium sand. Area f.
28. Pale green, PSW. Area f.
29. Very pale green, PSW.
30. Gray, red-brown core, PSW. Diam. 14 cm.
31. Gray, PSW. Area f.
32. Cooking pot: very pale red-brown, gray interior. Diam. 34 cm. Area g.
33. Cooking pot: pale red, moderately soft, abundant sand. Diam. 28 cm.
34. Pale brown, pale gray-brown core. Diam. 28 cm. Area g.
35. Pale pink exterior, pale gray-brown interior, pale brown core. Diam. ca. 50 cm. Area a.
36. Pale brown outer body pale red-brown inner body, PSW. Linear combed incision between exterior cordons.
37. Cooking pot: very dark gray, moderately soft, abundant sand.

SITE 41 POTTERY CATALOG (fig. B.9: 38–46)

38. Pink exterior, remainder pale brown, PSW. Diam. 14 cm.
39. Very pale brown to red-brown, PSW. Diam. 14 cm.
40. Very pale brown, pale red-brown core, PSW. Diam. 28 cm.
41. Pale red-brown, PSW. Diam. 28 cm.
42. Pale red-gray, gray core, PSW. Diam. 22 cm.
43. Pale brown, PSW.
44. Very pale brown, PSW. Diam. ca. 22 cm.
45. Very pale brown, PSW. Diam. ca. 24 cm.
46. Very pale brown, PSW. Diam. 4 cm.

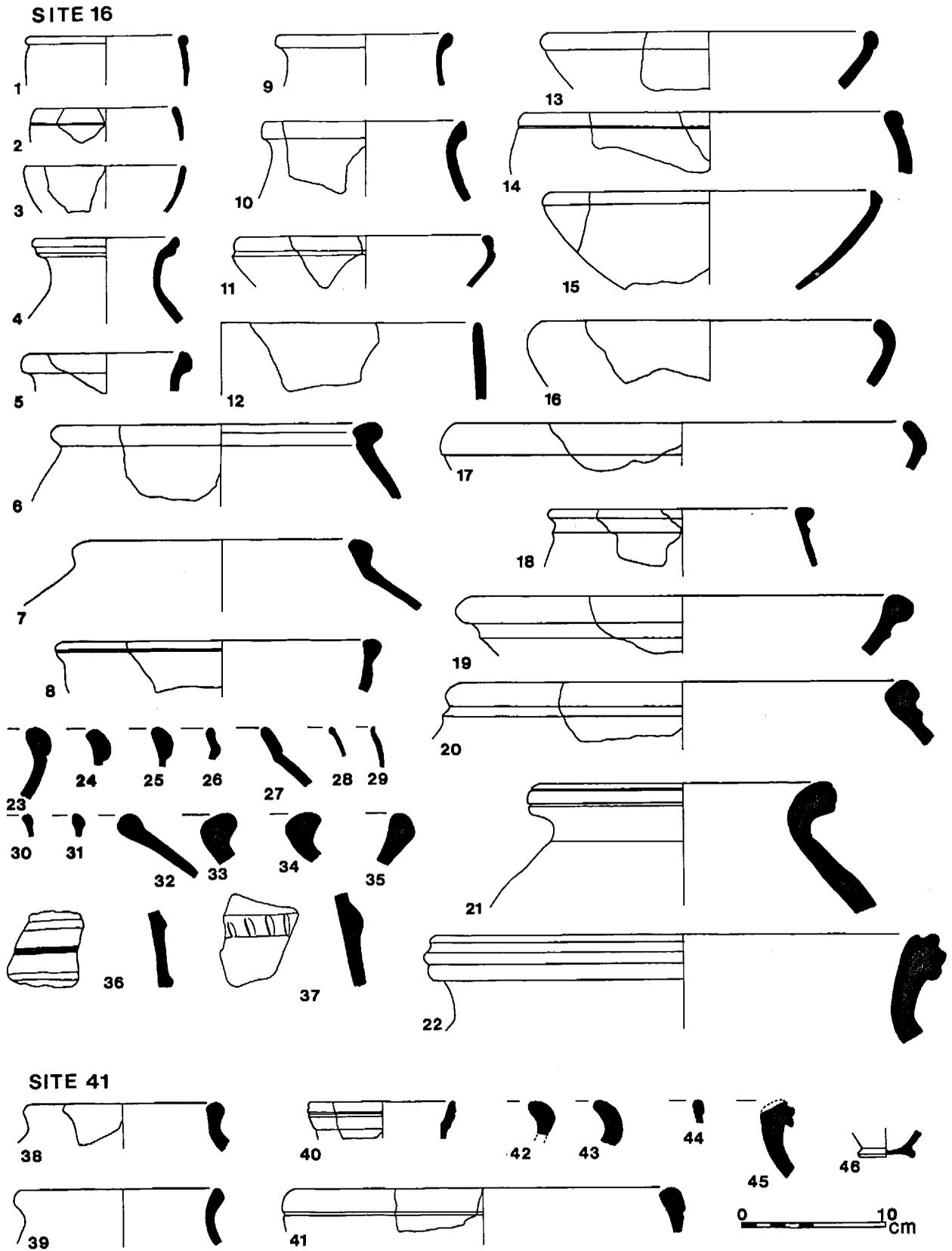


Figure B.9. EB-MB Transition Pottery from Sites 16 (Eskihayman Tepe) and 41.

SITE 13 (KUŞTEPE): EB-MB TRANSITION AND EARLY MB

This hill top settlement possessed a pottery scatter which both overlapped with and extended the assemblages from Site 16 (above) and Kurban Höyük period III.

Forms included simple jars (fig. B.10: 1–6), as well as other forms (for example, fig. B.10: 10–13), not paralleled exactly at Kurban Höyük. The bowls (fig. B.10: 18–21) overlap with those recorded from the second half of the third millennium at Kurban Höyük (fig. B.10: 18; cf. KH II period III bowl 9b, pl. 100: G-M).

The barrel jars are again familiar and were more numerous than at Site 16, equated with Kurban Höyük period III. Many of the jars differ in detail, however, from those excavated from Kurban Höyük although certain examples (e.g., fig. B.10: 30) occurred in period IIIa levels. Forms not exactly paralleled at Kurban Höyük may therefore be of the Middle Bronze Age, as barrel jars continue, with some changes, well into the second millennium at Halawa, Hadidi, and Mardikh.

Probably the most distinctive forms are fig. B.10: 36, 37, and 40–42, none of which can be paralleled at Kurban Höyük. Although exact parallels seem to be lacking from elsewhere in Syro-Mesopotamia, this group shows more affinities with MB forms than with those of the preceding EB. For example, no. 37 resembles MB examples from Halawa (Orthmann 1981, tafel 45: 13) and Tell Hadidi (Dornemann 1979, fig. 22: 22; MB II). Number 38, although similar to MB examples from Mardikh IIIB (Matthiae 1977, figs. 40 and 41), is also present in Kurban Höyük period III levels. Finally, fig. B.10: 40–42 can be grouped with jar 23 of Kurban Höyük period III (KH II, pl. 125: D–F) but may also be likened to Mardikh IIIa forms in use during the first quarter of the second millennium (fig. B.10: 41, cf. Matthiae 1977, fig. 36; fig. B.10: 42, cf. Matthiae 1977, fig. 37).

It seems unlikely that such a small, isolated hill top was occupied for an extended period and the balance of the ceramic evidence suggests that settlement overlapped with period III at Kurban Höyük and continued for a short time thereafter into the Middle Bronze Age. The presence of MB ceramics which were rare or absent within the very large sample from Kurban Höyük period III suggests that a settlement continued at Site 13 after the abandonment of Kurban Höyük. Furthermore, the greater number of barrel jars and possible MB forms implies that Site 13 also post dates the occupation of nearby Site 16. The significance of a related assemblage including probable MB forms, from Şaşkan Büyüktepe, is assessed below (Site 8).

SITE 13 POTTERY AND SMALL FIND CATALOG (fig. B.10)

All pottery vessels are wheelthrown.

1. Pale brown, brown core, PSW. Diam. 10 cm.
2. Very pale brown, gray brown core, PSW. Diam. 12 cm.
3. Very pale brown, brown core, PSW. Diam. 12 cm.
4. Pale greenish gray, PSW. Diam. 14 cm.
5. Pale brown, PSW. Diam. 12 cm.
6. Pale brown, brown core, PSW. Diam. 18 cm.
7. Pale brown, PSW. Diam. 23 cm.
8. Pale brown, brown core. Diam. 26 cm.
9. Pale greenish gray, PSW. Diam. 13 cm.

10. Cream surface, pale green core, PSW. Diam. 14 cm.
11. Pale greenish gray, PSW. Diam. 16 cm.
12. Pale brown, pale gray-brown core, PSW. Diam. 21 cm.
13. Pale brown, PSW. Diam. 20 cm.
14. Cooking pot ware: pale red-brown surface, dark gray core; abundant coarse sand. Diam. 20 cm.
15. Pale greenish-gray, PSW. Diam. 18 cm.
16. Pale greenish-gray, PSW. Diam. 40 cm.
17. Pale brown, PSW. Diam. 34 cm.
18. Pale red outer body, gray-brown inner body, PSW. Diam. 24 cm.
19. Pale greenish gray, PSW. Diam. 28 cm.
20. Pale brown, PSW. Diam. 34 cm.
21. Pale brown, PSW. Diam. 26 cm.
22. Pale greenish-gray, PSW. Diam 30 cm.
23. Pale red exterior, pale gray-brown interior, dark gray core. Diam. 30 cm.
24. Pale brown, PSW. Diam. 28 cm.
25. Gray, PSW. Diam. 24 cm.
26. Very pale brown, PSW. Diam. 30 cm.
27. Greenish-gray outer body, pale red-brown inner body, PSW. Diam. 36 cm.
28. Pale greenish-gray surface, pale red-brown core, PSW. Diam. 36 cm.
29. Pale greenish-gray outer body, pink inner body, PSW. Diam. 38 cm.
30. Pale greenish gray surface, brown core, PSW. Diam. 40 cm.
31. Very pale brown, PSW. Diam. 37 cm.
32. Pale brown exterior, pink interior and core, PSW. Diam. 34 cm.
33. Pale red-brown outer body, pale brown inner body, PSW. 28 cm.
34. Gray brown, PSW. Diam. 32 cm.
35. Gray, PSW. Diam. 26 cm.
36. Red exterior, gray-brown interior and core, PSW. Diam. 27 cm.
37. Cream, PSW. Diam. 33 cm.
38. Pale brown, PSW.
39. Pale brown, brown core, PSW. Diam. 23 cm.
40. Pale brown, PSW. Diam. 55 cm.
41. Brown, PSW. Diam. 58 cm.
42. Pale greenish-gray exterior, pale brown interior and core, PSW. Diam. 52 cm.
43. Figurine fragment in pale brown, PSW. Remaining height 6.50 cm.

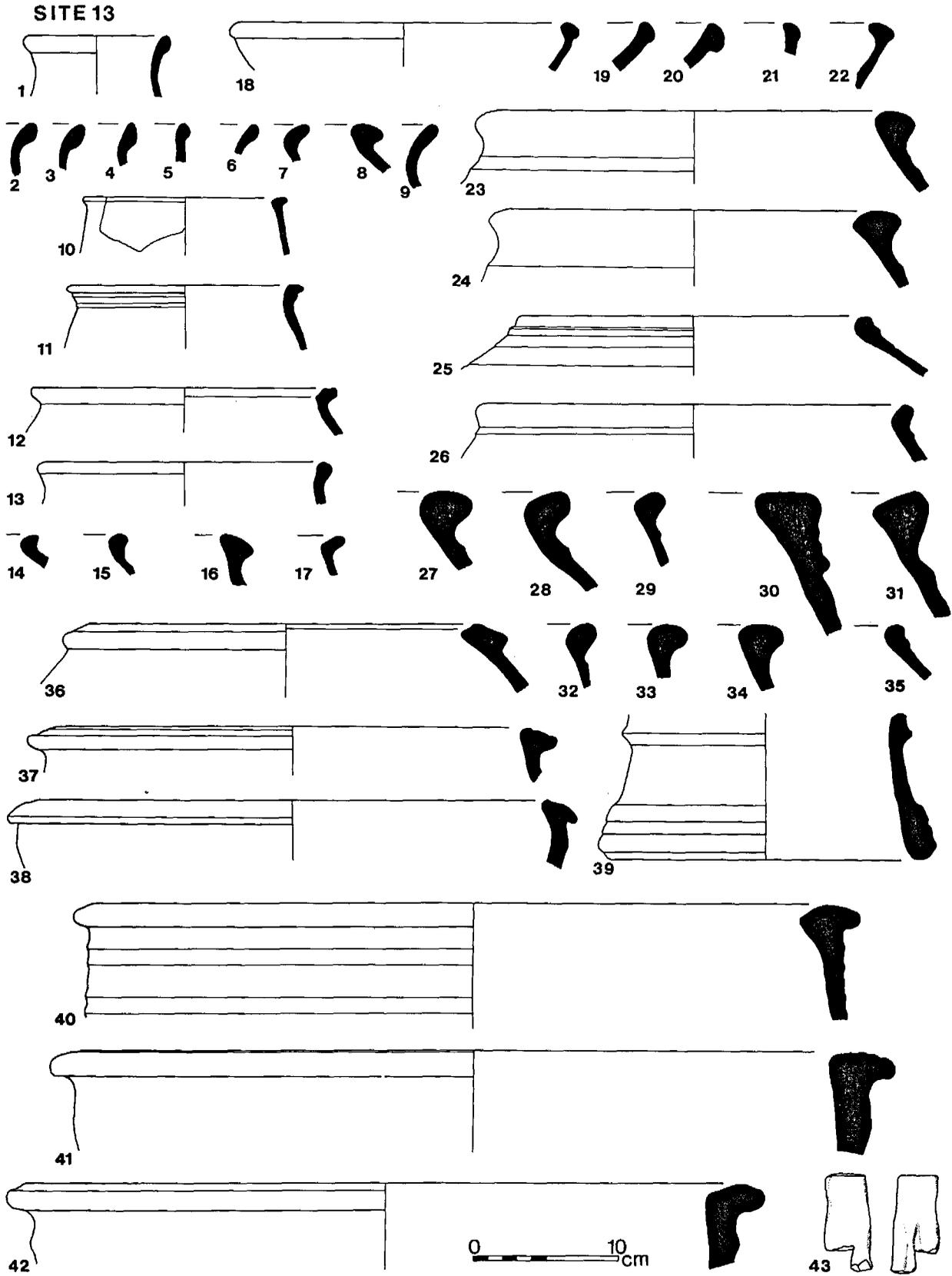


Figure B.10. EB-MB Transition and MB Pottery and Small Find from Site 13 (Kuştepe).

SITES 5 (KULLUK TEPE), 31, 40, AND 47: LATE SECOND AND EARLY FIRST MILLENNIA B.C.

At the time of writing, the pottery assemblages characteristic of the period between the mid-second millennium B.C. and the adoption of Hellenistic forms around the fourth century B.C. are poorly understood for the area of the Atatürk dam. The pottery from the four sites did exhibit parallels with MB, LB, and Iron Age forms from outside the dam area, but no assemblage provided sufficient parallels to give an unequivocal date for the occupation in question. In fact, the very elusiveness of such parallels makes it impossible to prove that these sites were 'single period sites'. Here the sites are described in the order 31, 40, 5, and 47, and then their common characteristics and certain distinctions are summarized to suggest an approximate time range for their occupation.

SITE 31

Pottery from Site 31 was predominantly sand tempered (85 percent), the remainder (some 15 percent) being of chaff or chaff and sand tempered. The wares, like those of Sites 5, 40, and 47, were moderately soft and less evenly fired than the EB and MB Plain Simple Wares. Noteworthy forms included:

Jars with internally beaded rims (fig. B.11: 9, 15); in these examples the beads are much less pronounced than on those examples from Site 5 and the Hellenistic sites.

Jug handles were also present (seven examples) and were of roughly oval section. No full profiles were recovered. Large storage jars, comparable to the common examples from Sites 5 and 27 were absent, however, despite a careful search of the site.

Several forms show some general LB parallels: fig. B.11: 4 compares with LB I bowls from Tell Hadidi (Dornemann 1979, fig. 20: 43); fig. B.11: 6 again with Tell Hadidi LB I (fig. 20: 41) although a seventh century parallel at Sultantepe may be closer in form (Lloyd and Gokçe 1953, fig. 7: 23, 24; see also Site 7, fig. B.20: 27). Figure B.11: 7, a bowl with internally thickened rim, resembles an example from Site 5 (fig. B.12: 25) and was also present in LB I levels at Hadidi (fig. 20: 12–21). Again similar to examples from Tell Hadidi were the fine ring bases, fig. B.11: 11, 12 (Dornemann 1979, fig. 20: 29).

Possibly slightly earlier was the jar (fig. B.11: 8) which resembles an MB form from Halawa (Orthmann 1981, tafel 44 no. 11) and an MB II form from Hadidi (fig. 23: 2).

Certain forms, for example some rims (fig. B.11: 20, 27, 28, 30, and 31), occur in the Site 7 assemblage (see below), but because that site is a multiperiod site the pottery cannot be used to date those from Site 31.

Although parallels are not exact, the Site 31 assemblage may belong to the LB, or the early first millennium B.C.

SITE 40

The assemblage from this site has a proportion of chaff tempered wares intermediate between those of Sites 31 and 5: forty percent chaff or chaff and sand temper; sixty percent sand temper. Coarse storage jars similar to those from Site 5 and the Hellenistic sites, especially Site 27, are present in chaff and sand tempered wares. Raised bands ornamented

with oblique slashed or finger impressions occur on body sherds of the same ware type and again these occur at Sites 5 and 27A.

Parallels with other assemblages are few and uncertain. Figure B.11: 38 resembles a form from Tell Hadidi (fig. 21: 1) and fig. B.11: 47 might be an example of an usual LB base from the same site (fig. 20: 20, 23). The blackened ends of the stubs imply that the stand was actually placed in the fire or embers.

A handle (fig. B.11: 37) which sprung from the rim top and was manufactured in chaff tempered ware, can be compared to those from Site 5.

Other forms included square jar rims (fig. B.11: 49) and distinctive but as yet undated open bowls (fig. B.11: 41, 44).

SITE 5

The pottery from Site 5 was again moderately soft. It was unevenly fired with reddened surfaces and usually a gray core; at least 62 percent was of chaff or mixed chaff and grit temper.

Handles were common, usually joining the vessel at the rim, and were of a flattened oval cross section (eight examples, illustrated examples: fig. B.12: 14, 15). The form continues, in different wares, at sites dated independently to the Seleucid-Hellenistic period.

Large storage jars in similar chaff or mixed tempered wares were also common (five examples, all illustrated: fig. B.12: 9, 10, and 29–31). These appear to have been decorated with raised bands with oblique impressions (fig. B.12: 28) or with finger impressions (not illustrated, but see Site 47, fig. B.12: 35). The vessel rims resemble large storage jars from Seleucid-Hellenistic sites within the survey and also examples from Nimrud and Tell es-Sweyhat (see Site 19, fig. B.14 and Site 27A, fig. B.13, below).

Jar rims included a simple, almost square form (fig. B.12: 3, 22) which resembles a more abruptly squared example from Hellenistic sites (Site 19, fig. B.12: 15, 16). The distinctive square rim with internal beading is again found on Hellenistic sites in the area (fig. B.14: 39).

Bowls with internally thickened rims (fig. B.12: 19, 25) compare, very approximately with LB bowls from Tell Hadidi (fig. 20: 12–21). Similar vessels do however occur in Hellenistic levels at Tell es-Sweyhat (Holland 1976, fig. 6: 3) and would seem to have an extended chronological range.

Overhanging rim bowls (Site 5, fig. B.12: 7 and Site 47, fig. B.12: 32) are similar to forms excavated from Gritille Höyük (Operation 28; G. Stein, personal communication), provisionally dated to the late Iron Age or early Hellenistic periods.

The chaff tempered jar (fig. B.12: 4), is similar to MB forms from Tell Hadidi (fig. 21: 5, 30) and Halawa (Orthmann 1981, tafel 46: 9, 12, 15, and 18).

On first impression, the chaff tempered fabrics suggest a Late Chalcolithic date, but with the exception of fig. B.12: 20 and 21, originally suggested to have 'Amuq F parallels, the forms do not support this early date. General parallels range from MB until Hellenistic. Hellenistic fine wares are absent however as are Plain Simple Wares of the early second millennium (cf. those from Site 13, fig. B.10 above, and Site 8, figs. B.23–25, below). Although the site was certainly occupied during the late second or early first millennia B.C., the later part of this range up until the introduction of Hellenistic wares appears most likely.

SITE 47

With its very sparse surface scatter, this site cannot be dated with any confidence but it again probably falls within the time range late second millennium-early first millennium B.C.

It is possible that aseriation might eventually enable the three main site assemblages to be divided into three chronological groups: an earlier group comprising mainly LB forms and made in sand tempered ware (Site 31); an intermediate group with occasional coarse storage jars and vessels with handles springing from the rim top and manufactured from both sand and chaff tempered clay (Site 40); finally, a predominantly chaff tempered group in which the coarse storage jars are even more common along with numerous handle jars (Site 5). External parallels do, however, suggest a blurring of chronological phases with Site 31 showing both LB and Iron Age (seventh century B.C.) parallels and Sites 5 and 40 exhibiting MB-LB characteristics as well as some that continue into Hellenistic times. Unfortunately, one of the most conspicuous indicators of late second and early first millennia pottery assemblages in parts of eastern Turkey, handmade corrugated bowls (see Site 7, fig. B.20: 4–8, below), are absent from the four sites under discussion. In the light of contradictory evidence provided by external parallels these sites are allocated to the broad time span between the mid second millennium and fifth-fourth centuries B.C. At least some of this occupation must have been contemporaneous with the major occupation at Site 7.

SITE 31 POTTERY CATALOG (fig. B.11: 1–34)

1. Very pale greenish brown, abundant fine sand. Diam. 20 cm.
2. Pink surface, pale brown core. Medium sand. Diam. 24 cm.
3. Pink surface, pale brown core. Moderately soft; abundant coarse sand. Diam. 21 cm.
4. Very pale gray-brown. Occasional sand. Diam. 26 cm.
5. Pale red surface, pale brown core. Abundant coarse sand with calcite. Diam. 22 cm.
6. Pink exterior, pink and gray interior, gray core. Fine chaff. Diam. 24 cm.
7. Pale brown exterior, pink interior, pale gray-brown core. Common sand. Diam. 26 cm.
8. Pale brown. Common medium sand. Diam. 24 cm.
9. Pale red. Common medium sand. Diam. 8 cm.
10. Pale pinkish-brown. Common medium sand. Diam. 10 cm.
11. Red surface, pale brown core. Fine fabric. Diam. 10 cm.
12. Red surface, pale brown core. Fine fabric. Diam. 8 cm.
13. Pink surface, pale brown core. Occasional sand. Cut grooves on exterior.
14. Very pale greenish-brown. Abundant fine sand. Diam. 26 cm.
15. Pale brown. Common sand and planar voids. Diam. 25 cm.
16. Pale red. Abundant medium sand. Diam. 25 cm.
17. Smooth, pale brown slipped surface. Pale brown core. Occasional sand and irregular voids. Diam. 26 cm.
18. Very pale brown. Common fine sand. Diam. 30 cm.
19. Very pale red-brown. Fine sand. Diam. 30 cm.
20. Pale brown. Sand and chaff.
21. Pink, pale brown core. Some sand and voids.
22. Pink. Common sand temper.
23. Pale red exterior, gray interior, pale brown core. Moderately soft, occasional white sand.
24. Pale brown. Occasional medium sand.
25. Pale brown exterior, pale gray-brown interior, pale brown core. Some coarse sand. Diam. 12 cm.

26. Pink surface, dark gray core. Sand and common chaff.
27. Pale pink surface, pale brown core. Occasional sand. Diam. 24 cm.
28. Smooth, lightly polished pale brown surface, pale brown core. Occasional sand. Diam. ca. 28 cm.
29. Pale brownish-gray surface, black core. Compact fabric, occasional voids, possibly from chaff.
30. Cream surface, pale brown-pale gray-pale brown core. Common fine chaff.
31. Pink surface, traces of red slip, pale gray-brown core. Moderately soft, common sand.
32. Pink surface, gray-brown core. Common medium sand and voids. Diam. 17 cm.
33. Very pale gray-brown surface, dark gray-pale brown core.
34. Pale red. Common medium sand, some limestone-calcite. Diam. 10 cm.

SITE 40 POTTERY CATALOG (fig. B.11: 35–55)

35. Pinkish-gray exterior, gray elsewhere. Common coarse sand. Diam. 13 cm.
36. Greenish-cream. Common fine sand. Diam. 18 cm.
37. Pale brown surface, pale gray-brown core. Common fine sand and chaff. Diam. 16 cm.
38. Dark gray-brown. Common coarse sand, some white. Diam. 16 cm.
39. Pink surface, pinkish-gray core. Occasional fine sand and chaff. Diam. 22 cm.
40. Pale red surface, pale brown core. Abundant sand. Diam. 26 cm.
41. Cream surface, very pale brown core. Common fine sand. Diam. 24 cm.
42. Pink surface, pale brown core. Occasional sand. Diam. 26 cm.
43. Very pale brown. Abundant medium sand. Diam. 28 cm.
44. Pale brown with gray core. Common fine chaff. Diam. 35 cm.
45. Pale red-brown. Common fine sand. Diam. 11 cm.
46. Pink surface, pale brown core. Fine ware, abundant fine, white sand. Diam. 10 cm.
47. Very pale brown. Moderately smooth fabric, some fine sand. Black stubs suggest this was a stand.
48. Very pale brown surface, pale gray-brown core. Common sand. Diam. 30 cm.
49. Pink surface, pale brown core. Abundant fine sand. Diam. 26 cm.
50. Cream. Common medium sand. Occasional fine chaff. Diam. 20 cm.
51. Pale brown exterior and core, dark gray interior. Occasional sand and chaff. Diam. 26 cm.
52. Pale red-brown surface, gray core. Occasional fine sand, common fine chaff. Diam. 38 cm.
53. Pale brown surface, gray core. Fine sand and chaff. Oblique slashes on raised band. Diam. 64 cm.
54. Pale red exterior, pale brown interior, dark gray core. Fine sand and chaff. Finger-impressed band. Diam. 50 cm.
55. Pale brown surface, gray core. Fine sand and chaff. Diam. 47 cm.

SITE 5 POTTERY CATALOG (fig. B.12: 1–31)

1. Red-brown surface, gray core. Chaff and coarse sand. Diam. 10 cm. Area c.
2. Red slip on exterior and interior rim, elsewhere red-brown; pale brown core. Sand. Diam. 8 cm.
3. Light brown. Chaff and coarse sand. Diam. 12 cm. Area c.
4. Light brown surface, gray core. Chaff and medium-coarse limestone. Diam. 26 cm. Area b.
5. Very pale brown sand. Diam. 26 cm. Area b.
6. Pink exterior, light brown interior, red-brown-light brown core. Coarse sand. Diam. 28 cm. Area c.
7. Gray-brown surface, greenish-gray core. Chaff, with some sand. Diam. 34 cm.
8. Light brown surface, red-brown core. Chaff and coarse limestone temper. Diam. 38 cm. Area d.
9. Gray brown surface, gray core. Chaff and coarse limestone. Diam. 36 cm. Area d.
10. Reddish yellow surface, gray core. Chaff and coarse limestone. Diam. 38 cm. Area a.
11. Red slip on rim exterior, elsewhere red-brown surface, brown and gray core. Chaff and coarse sand. Diam. 18 cm. Area a.

12. Reddish yellow surface, brown and gray core. Chaff and coarse sand. Diam. 20 cm.
13. Pink surface, red-brown and gray core. Coarse sand. Diam. ca. 22 cm.
14. Red-brown. Sand. Diam. 14 cm.
15. Red-brown exterior, dark gray interior and core. Chaff and coarse limestone. Diam. 16 cm. Area c.
16. Pale orange surface, gray core. Chaff and some coarse limestone. Area b.
17. Pink surface, pale brown core. Sand and chaff. Diam. 18 cm. Area c.
18. Pale brown. Sand. Diam. 23 cm. area a.
19. Pale brown surface, dark gray-brown core. Sand.
20. Pale red surface, dark gray core. Sand and some chaff. Diam. 30 cm. Area c.
21. Red-brown surface, dark gray core. Chaff. Diam. ca. 26 cm.
22. Very pale red-brown. Sand with some limestone. Area a.
23. Pale brown, slightly reddened inner core. Sand. Diam. 17.50 cm. Area b.
24. Red-brown surface, dark gray core. Chaff. Diam. ca. 22 cm. Area c.
25. Pale red surface, black core. Chaff. Diam. 28 cm. Area c.
26. Red-brown exterior, dark gray-brown interior and core. Chaff and occasional coarse limestone. Diam. 12 cm.
27. Red-brown surface, brown core. Coarse sand. Diam. 13 cm. Area c.
28. Light red-brown surface, gray and light brown core. Chaff and coarse sand. Thickened band on body has diagonal tool-impressed decoration. Area a.
29. Pink surface, gray-brown core. Abundant limestone. Area d.
30. Light brown surface, dark gray core. Chaff and coarse limestone. Diam. 43 cm.
31. Reddish yellow surface, brown core. Chaff and coarse sand. Diam. 34 cm. Area a.

SITE 47 POTTERY CATALOG (fig. B.12: 32–35)

32. Pale red-brown surface and outer core, pale brown core. Sand, occasional voids. Diam. 32 cm.
33. Pale red and pale brown surface, pale brown core. Common sand. Shallow groove incised around rim exterior. Diam. 20 cm.
34. Pale brown surface and outer core, pink core. Common sand. Diam. 10 cm.
35. Pale brown surface, pale gray-brown core. Sand. Finger-impressed cordon on exterior.

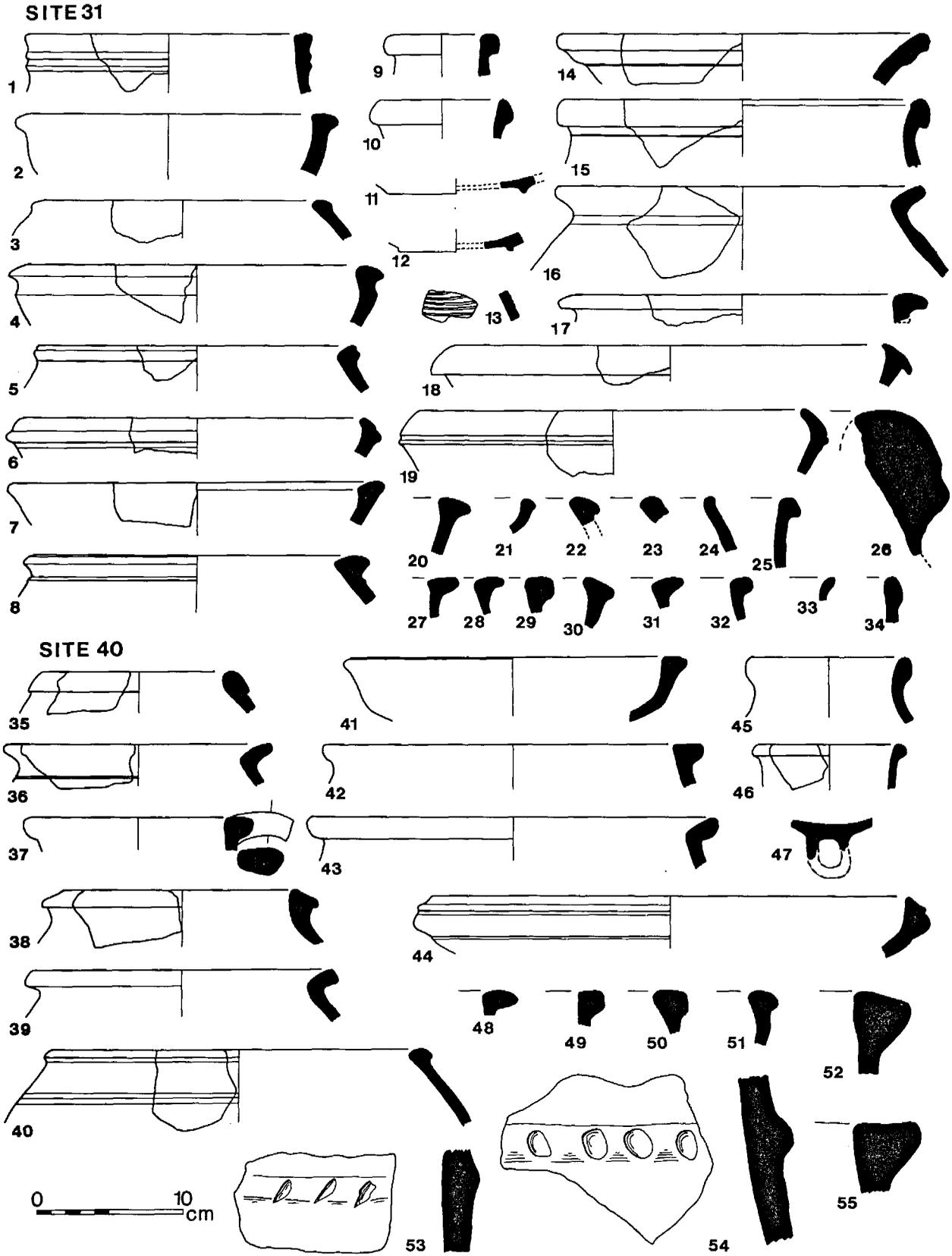


Figure B.11. Late Second and Early First Millennium B.C. Pottery from Sites 31 and 40.

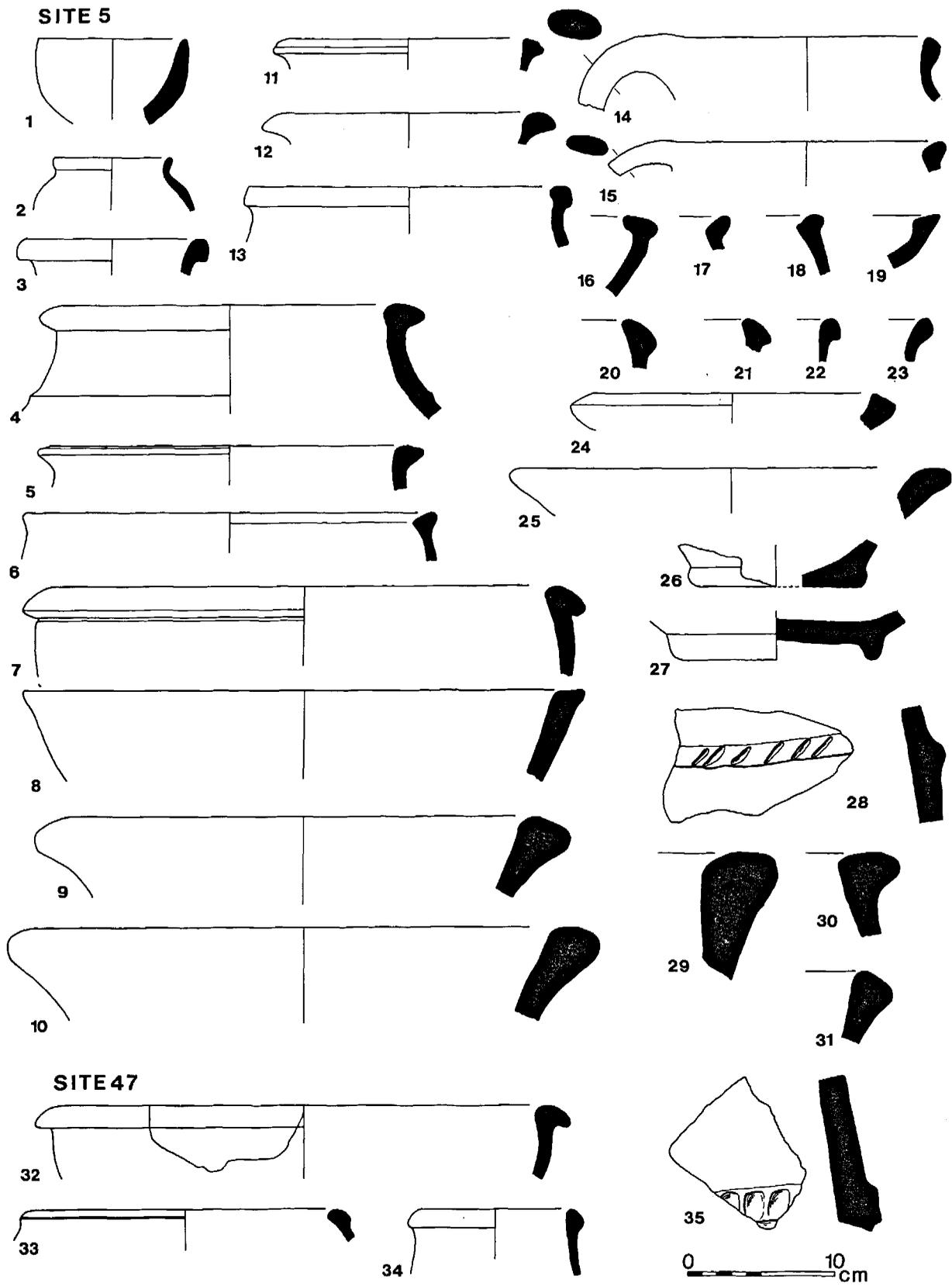


Figure B.12. Late Second and Early First Millennium B.C. Pottery from Sites 5 (Kulluk Tepe) and 47.

SITE 27A (CÜMCÜME KÖY): SELEUCIDHELLENISTIC

This pottery, which formed a surface scatter on ground overlooking the southeastern corner of Cümcüme village, appeared to belong to a single phase of occupation. Almost two-thirds (63 percent) of the pottery was sand tempered or sand and limestone-calcite tempered, compared to the predominantly (62 percent) chaff- or chaff and sand tempered pottery at Site 5.

Forms such as handles flush with vessel rims (eight examples, fig. B.13: 13 and 14 are illustrated) and large storage jars (fig. B.13: 6, 7, and 23–27) were already familiar in the preceding poorly dated phase of Site 5 (late second-early first millennia B.C.). Fabrics were different, however, the earlier forms were of predominantly chaff temper, whereas those from Site 27A, which were associated with later forms and wares, were of sand and limestone temper. The presence of sand and gravel of distinctly Euphrates provenance as temper in the Site 27A pottery produced, when fired, a distinctive ware with burnt gravel inclusions. This ‘chocolate chip ware’, when found at other sites in the area, was always found with Hellenistic type pottery. Similar storage jars, decorated with thumb impressed ridges (e.g., fig. B.13: 7) and with flat topped rims, have been found in Hellenistic contexts at Nimrud, Tell es-Sweyhat, and Aşvan (Oates and Oates 1958, pl. XXVII: 14; Holland 1976, fig. 6: 29; Mitchell 1980, figs. 39 and 40). The flat and button bases (fig. B.13: 26, 27) belong to the storage jars illustrated and again have been recorded from other Hellenistic surface collections made in the area.

Jars, frequently with roughly squared rims (fig. B.13: 4, 12), have also been found within surface collections of relatively pure Hellenistic wares (cf. Site 19, fig. B.14: 15, 16). A variant with a distinctive internal bead (fig. B.13: 20) was also found at Sites 5 and 31 (fig. B.12: 13 and fig. B.11:15, respectively) and also continued well into the Hellenistic period (Sites 9, 10, 19, and 36, fig. B.14, below).

A bowl (fig. B.13: 18) appears to belong to a class which first appeared in the late second-early first millennia B.C. (cf. the undated, but probably earlier version from Site 31, fig. B.11: 4). The form apparently continued into Hellenistic times as is illustrated by examples from Hellenistic levels at Tell es-Sweyhat and Nimrud, although these are by no means identical (Holland 1976, fig. 6: 19; Oates 1968 fig. 15: 13).

Hellenistic fine wares, although present, were rare and only two examples of the Hellenistic fine ware bowls, one with the characteristic incurved rim, were found (fig. B.13: 2, 22). These are discussed further for Sites 9, 10, 19, and 36 (fig. B.14), below.

The Site 27A assemblage shares characteristics with both late second-early first millennia pottery from Sites 5, 31, 40, and 47 (figs. B.11, 12), and those from Hellenistic assemblages (see Site 19, fig. B.14, below). If the occupation was of relatively short duration, this implies that it belonged to the mid-first millennium but did not continue much beyond the third century B.C., by which time incurved rim bowls and other fine ware forms had become common (see Site 19, fig. B.14, below).

SITE 27A POTTERY CATALOG (fig. B.13)

1. Pale brown exterior, pale red interior and core. Sand including limestone. Diam. 10 cm.
2. Dark gray slipped exterior, gray interior, pale brown core. Smooth paste; fine sand. Diam. 12 cm.
3. Dark red-brown exterior, pale brown interior, brown core. Abundant medium sand. Diam. 6 cm.
4. Pale brown surface, gray-brown core. White grit. Diam. 12 cm.

5. Pale red-brown exterior, gray-brown interior, dark gray-brown core. Common medium sand. Diam. 19 cm.
6. Pale red surface, red-brown core. Abundant sand-gravel. Diam. 34 cm.
7. Gray-brown exterior and core, red-brown interior. Fine sand. Finger-impressed strip on exterior.
8. Pale gray-brown surface, gray-brown core. Common sand. Diam. 25 cm.
9. Pale red-brown surface, brown core. Abundant sand. Diam. 23 cm.
10. Pale red-brown. White limestone-calcite grits. Diam. 28 cm.
11. Pale brown surface merging to red-brown with gray-brown core. Abundant sand. Diam. 20 cm.
12. Pale and red-brown surface, pale brown core. Abundant sand. Folded rim. Diam. 21 cm.
13. Pale red-brown surface, gray-brown core. Common sand and possibly burnt chaff.
14. Pale red surface, red-brown core. Common sand.
15. Pale red exterior, gray-brown interior and core. Abundant medium sand; gray, burnt chaff inclusions.
16. Red-brown surface, gray-brown core. Sand. Two rows of circular holes ca. 1 mm diam. on exterior.
17. Pale red-brown. Abundant fine white sand.
18. Pale red-brown surface, red-brown core. Abundant medium sand. Diam. ca. 43 cm.
19. Gray-brown surface, dark gray-brown core. Common sand.
20. Pink. Abundant sand.
21. Gray. Fine sand and occasional white grit.
22. Dark gray slipped exterior, red-brown interior, pale brown core. Smooth, fine sand.
23. Pale red surface, red-brown core. Abundant sand-gravel. Diam. 42 cm.
24. Pale red-brown surface, dark gray-brown core. Abundant sand.
25. Pale red surface, dark gray-brown core. Abundant sand-gravel. Diam. 40 cm.
26. Pale brown surface, red-brown/gray-brown core. Common white sand. Diam. 16 cm.
27. Gray-brown surface becoming gray within core. Abundant sand. Diam. 9.50 cm.

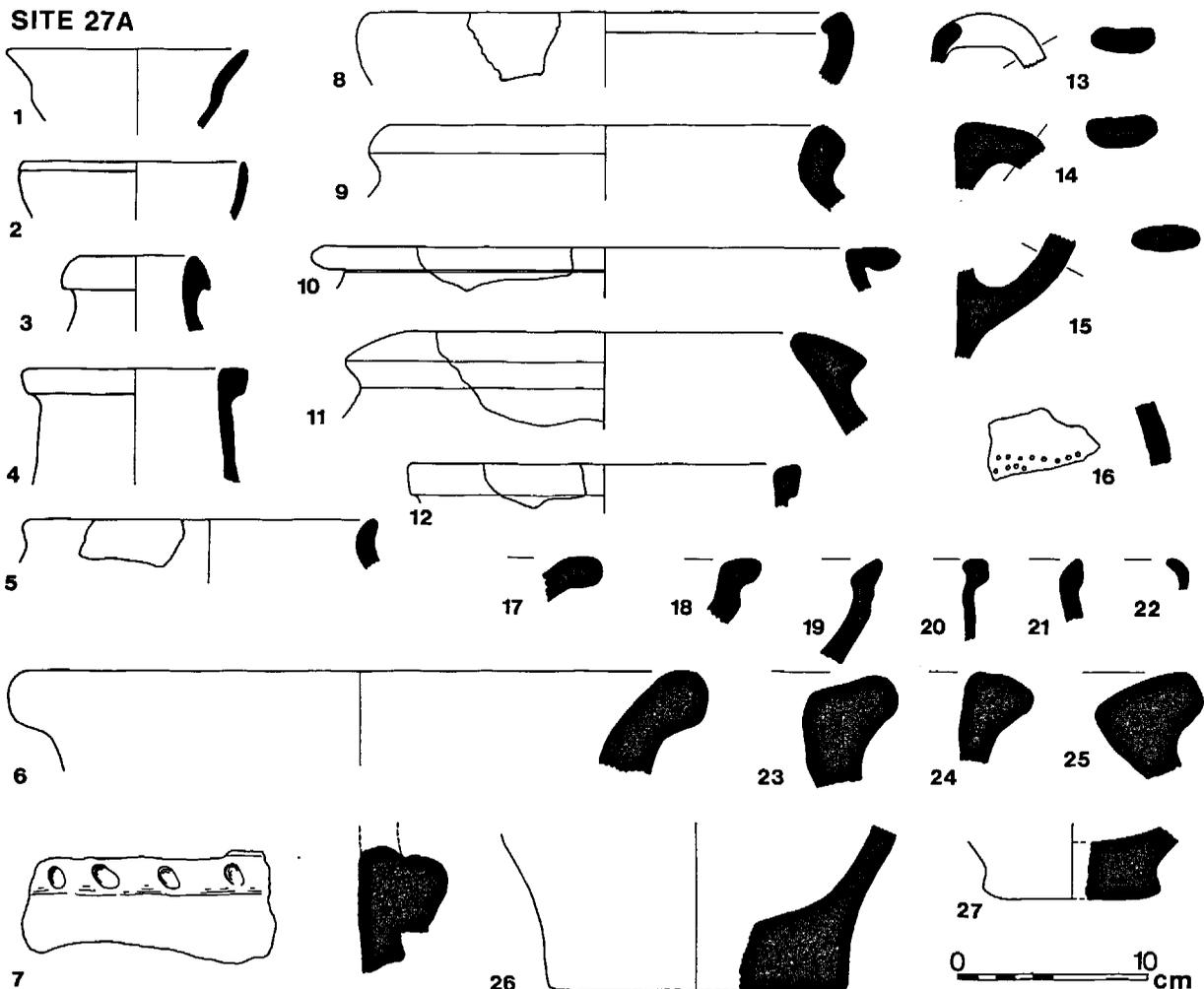


Figure B.13. Seleucid-Hellenistic Pottery from Site 27A (Cümcüme Köy).

SITES 9, 10, 19 (KAYA TEPE), AND 36: SELEUCID-HELLENISTIC

With the exception of two possible third millennium B.C. forms (fig. B.14: 17, 34), the above sites produced apparently pure assemblages of pottery dating to the last 300–400 years of the first millennium B.C.

Hellenistic fine wares were more abundant than at Site 27A, which is tentatively assigned to the fifth to second-third centuries B.C. Bowls with incurved rims were the most common fine ware form (fig. B.14: 1–7, 36, 46, 49, and 52). This widespread type is known from much of the Middle East, ranging from Pasargadae in Iran (Stronach 1978) to the shores of the eastern Mediterranean. Vessels of this form were in use from the fourth century until the second century B.C. and a less curved variety (e.g., fig. B.14: 35) appears to be slightly later (Hannestad 1983, p. 16). Variants of the ‘fishplate’ form were also present (fig. B.14: 20, 21, and 24) and, like the bowls, were in a fine, smooth, well-levigated paste. The sand tempered dish (fig. B.14: 22), although similar, seems to relate more to early first millennium antecedents. Fishplates overlap in time with incurved rim bowls (Hannestad 1983, 38–32) and among the limited range of forms present was fig. B.14: 21, which can be compared with examples from Nimrud (Oates 1968, fig. 15: 2) and Tell es-Sweyhat (Holland 1976, fig. 6: 6). Another example (not illustrated) was similar to sherds excavated from late first millennium levels at Gritille Höyük (G. Stein, personal communication). The high, fine ware bases (fig. B.14: 18, 19) probably belong to fishplates or related forms.

Of the single period sites, only Site 9 yielded a good example of Eastern Sigillata ware (the base: fig. B.14: 41), although a rim and two body sherds from Site 19 were in a red polished Sigillata-like ware. The best groups of Eastern Sigillata and related Roman wares came from multiperiod sites and these are illustrated with the overall site assemblages (see, for example, Site 7, figs. B.20–22 and Site 8, figs. B.23–25, below).

Jars included those with squared rims (fig. B.14: 15, 16); triangular rims (14, 40); and internally beaded rims (32, 39). All three forms appear to be characteristic of Hellenistic assemblages from multiperiod sites in the area, although such assemblages, being mixed with wares of other periods are less reliable than those from the apparently single-period sites. An example of the internally beaded form also occurred at Site 27A (fig. B.13: 20).

Coarse storage jars in sand or sand and gravel tempered clay (‘chocolate chip ware’) continued in use but in diminished amounts compared to at Site 27A and were probably out of use by late Roman times (see Sites 12 and 14, fig. B.15, below).

Handles, frequently flush with the vessel rim and of flattened oval cross section, were quite common at Site 19 (five examples) and Site 9 (three examples) and appear to continue a tradition dating from at least the early first millennium (Site 5, fig. B.12, and Site 27A, fig. B.13).

In general, the external parallels suggest that occupation at Site 19 continued from the fourth-third centuries B.C. possibly as late as the first centuries B.C.-A.D. Sites 9 and 10, with their much smaller assemblages, are difficult to allocate to subperiods, but 9 appears to have been slightly later than Site 10, and probably continued in use into the first centuries A.D. Although tiny, the sample from Site 36, was consistent with that from Sites 9, 10, and 19 and included an incurved rim bowl (fig. B.14: 52) and fragments of a coarse storage jar in ‘chocolate chip ware’ (not illustrated).

SITE 19 HELLENISTIC POTTERY CATALOG (fig. B.14: 1–33)

1. Dark red-gray slip on exterior, red-brown slip on interior, light brown paste. Smooth, fine sand. Diam. 10 cm. Area a.
2. Red to weak red slipped surface, light red-brown paste. Smooth, fine sand. Diam. 14 cm. Area b.
3. Red slipped surface, red-yellow paste. Smooth, fine sand. Diam. 14 cm. Area a.
4. Dark gray slip on exterior, dark red-gray slip on interior, light olive brown paste. Smooth, fine sand. Diam. 14 cm. Area d.
5. Dark gray slipped exterior, red slipped interior, light red-brown paste. Smooth, fine sand. Diam. 14 cm.
6. Red-yellow slipped surface, pale yellow-red, smooth paste. Diam. 16 cm. Area d.
7. Dark gray slipped exterior, red-gray slipped interior. Very pale brown, smooth paste. Fine sand. Diam. 18 cm. Area d.
8. Pink surface, dark gray core. Sand and some chaff. Slight groove on inside lip. Diam. 16 cm. Area b.
9. Pale red surface merging to gray-brown core. Vestigial slip in exterior. Coarse sand. Diam. 14 cm. Area a.
10. Red-brown surface merging to gray-brown core. Sand with some chaff. Diam. 20 cm.
11. Pale red slipped exterior, red-brown slipped interior, smooth, pale red-brown core. Diam. 10 cm. Area d.
12. Very pale brown. Sand and white grit. Diam. 13 cm. Area e.
13. Light brown surface, gray-brown core. Sand. Shallow groove below rim on exterior. Diam. 14 cm. Area b.
14. Red-brown surface merging to light brown core. Sand. Diam. 13 cm. Area b.
15. Pink exterior and core, pale pink interior. Moderately hard with sand. Diam. 13 cm. area a.
16. Dark olive gray surface, dark gray core. Sand with rare white grits. Diam. 12 cm. Area a.
17. Light red-brown surface, gray-brown core. Fine sand; PSW. Diam. 14 cm. Area b.
18. Red-black slipped interior, pale gray-brown, smooth core. Diam. 7 cm. Area d.
19. Traces of orange-red slip on exterior of base, pink paste. Common sand. Diam. 7 cm.
20. Red-gray slip, red-brown smooth core with fine sand. Diam. 18 cm. area a.
21. Mottled red-gray-red slipped exterior, red-gray slipped interior, red-yellow paste. Smooth, fine sand. Diam. 22 cm.
22. Red-brown matte surface, red-brown core. Sand. Diam. 20 cm. Area e.
23. Pale red slip becoming red-black towards top of rim exterior. Smooth, pink paste. Diam. 24 cm.
24. Dark gray slip, gray, smooth core. Diam. 22 cm. Area d.
25. Pale brown with smooth slip on exterior. Occasional medium sand and pores. Diam. 23 cm. Area c.
26. Red-brown surface, gray-brown core. Sand and chaff. Diam. 24 cm. Area c.
27. Red-brown. Sand and chaff. Diam. 24 cm. Area d.
28. Pale red glossy slipped surface, pale red-brown core. Fine porous fabric. Area a.
29. Pale red slipped exterior, dark red-brown core. Common white grits, chaff impressed interior. Diam. 26 cm.
30. Pink. Hard with abundant sand. Area a.
31. Pale red. Common coarse sand; rim overturned. Area a.
32. Pale red with pale brown core. Moderately hard with medium-coarse white grits. Area b.
33. Pale red surface, gray-brown core. Sand. Diam. 38 cm. Area d.

SITE 9 HELLENISTIC POTTERY CATALOG (fig. B.14: 34–45)

34. Pale olive brown. Fine sand temper. PSW. Diam. 9 cm.
35. Red slipped exterior, pale red slipped interior, pink smooth fabric. Diam. 15 cm.

36. Very dark gray-brown slipped exterior, pale red slipped interior, smooth, pink core. Diam. 22 cm.
37. Pink surface, pale red core. Roughly made with occasional coarse sand. Diam. 12 cm.
38. Very pale red-brown. Abundant fine sand, occasional coarse grits. Folded rim. Diam. 12 cm.
39. Pink. Hard, common fine sand. Folded rim. Diam. 12 cm.
40. Pale red throughout. Common fine sand. Diam. 14 cm.
41. Eastern Sigillata base. Red glossy slipped surface. Very pale red-brown smooth core, 1 or 2 voids. Diam. 12 cm.
42. Pale red surfaces, brown core. Chaff and sand. Diam. 10 cm.
43. Very pale red-brown. Occasional sand.
44. Very pale brown. Occasional sand. Diam. 14 cm.
45. Very pale gray-brown, slightly polished exterior. Sand. Diam. 20 cm.

SITE 10 POTTERY CATALOG (fig. B.14: 46–51)

46. Pale red matte surface becoming red towards rim on exterior. Pink smooth core. Diam. 20 cm.
47. Vestigial pale red slip on top of rim. Pale red smooth paste. Fine sand. Diam. 25 cm.
48. Pale red. Common sand. Diam. 12 cm.
49. Dark gray-brown slipped exterior, pale red slipped interior becoming dark red to top. Smooth, pink paste.
50. Pale red. Common coarse sand. Handmade. Diam. 20 cm.
51. Pale red-brown surface, brown core. Abundant Euphrates sand and gravel. Diam. 45 cm.

SITE 36 POTTERY CATALOG (fig. B.14: 52–53)

52. Brown matte slip on interior, fine pale brown paste. Diam. 14 cm.
53. Pale red surface, pale brown core. Dense fabric, occasional sand.

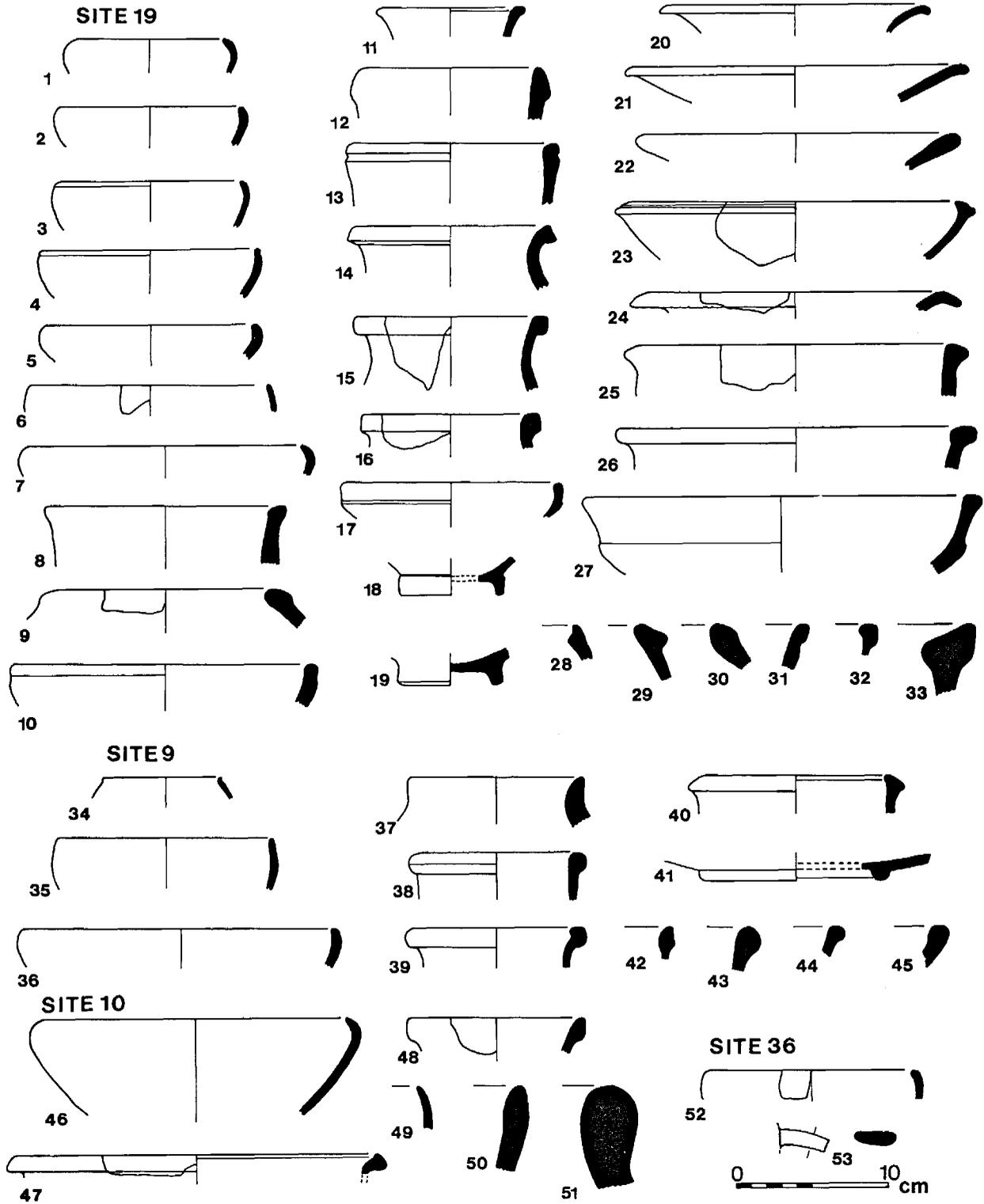


Figure B.14. Seleucid-Hellenistic Pottery from Sites 19 (Kaya Tepe), 9, 10, and 36.

SITES 12 AND 14: LATE ROMAN-EARLY BYZANTINE

These two short-lived settlements provide the type ceramic assemblage for the period third-sixth centuries A.D. All diagnostic forms described fall within this time range; pre-third century Roman-Hellenistic wares were absent, as were early Islamic wares. To avoid excessive duplication, the assemblages from both sites have been considered together and only the best, most representative forms, are illustrated.

The plain wares, which are described first, were all manufactured in a very pale brown, cream or, less frequently, pink or pale brown, evenly fired, hard clay body, tempered with fine-medium sand. Body sherds are virtually indistinguishable from EB Plain Simple Wares.

Amphora rims, handles, and carinations in plain ware were the most common finds on sites of this period, and their surrounding fields. Figure B.15: 1, 2, 8, 9, and 24, with their characteristic grooved or ridged rims, can be compared with amphorae excavated from fourth-sixth century A.D. deposits at Dibsi Faraj, Syria (Harper 1980, fig. E: 69–71). The complete vessel comprised a neck with grooved or ridged rim, two handles, a carination decorated with a running scroll or loops in brown paint (fig. B.15: 4, 26, and 28), and a plain, rounded base. The base was almost impossible to identify within the small sherds of most site scatters, but examples were recorded from Site 8 (fig. B.25: 28). Variations on the scroll painted design are illustrated (fig. B.15: 27 and 29), and in some cases designs were executed in red or black paint. The Dibsi Faraj amphorae, which are identical to those from Sites 12 and 14 (Dokuzköy Harabesi), have been dated by reference to inscriptions also found on vessels from Romania (Harper 1980, p. 337), but jars with similar rim forms were also present at 'Ain Sinu in early third century contexts (Oates 1968, fig. 24: 99–101).

Plain rimmed jars (fig. B.15: 3, 12, and 17) were also common, but these have a longer chronological range than amphorae with grooved rims. The lid (fig. B.15: 11), also in plain ware, was another common form (cf. Site 37, fig. B.16: 35) and was probably intended to fit an amphora or plain rimmed jar.

Broad open bowls in plain ware (fig. B.15: 13, 14) were common and were also found at Site 37 (fig. B.16: 41, 42) and, of a possibly later date, at Site 6 (fig. B.17, see below). Similar bowls came from early Byzantine contexts at Dibsi Faraj (Harper 1980, fig. E: 68) and from third century contexts at 'Ain Sinu (Oates 1968, fig. 24: 90). A broad range of large bowl forms were in use from Roman until early Islamic times and a detailed typological-chronological breakdown is not attempted here.

'Brittle cooking pot wares' were common at both sites, but owing to the small size of the remaining sherds they are easily overlooked during survey. The ware, hard-fired and thin-walled, was usually tempered with fine sand. Sherds were either plain or exhibited a corrugated exterior; surfaces ranged from red, reddish-brown to black and cores were frequently oxidized to bright orange. The fragility of these wares and the resultant small sherd size meant that fragments large enough to provide diagnostic forms were rare.

Brittle wares illustrated were as follows: fig. B.15: 5 and 6 (from Site 12) and fig. B.15: 30–35 (from Site 14). The following comparative observations are based on information kindly supplied by Richard Harper and Alastair Northedge. The everted rim (fig. B.15: 6) can only be closely dated when a rim is present, therefore the illustrated example can only be assigned to the first-sixth centuries A.D. Figure B.15: 30 is an early Byzantine cup and the ridge strap handle (fig. B.15: 33) is characteristic of early Byzantine jugs. Figure B.15:

34 and 35 are probably early Islamic and similar examples are known from sites found during the Qoueiq survey in northern Syria and from early Abbasid (Samarran) contexts at Qal'at 'Ana in western Iraq (Northedge 1981, fig. 4.12; Northedge 1988, fig. 27: 9–11). Figure B.15: 38 appears to belong to a third century A.D. cooking pot which is characterized by a handle attached flush with the vessel rim.

The most precise chronological indicator found at the late Roman-Byzantine sites was Late Roman C pottery. In the Near East and eastern Mediterranean this formed a fairly common fine ware in use between the fifth and seventh centuries A.D. (Hayes 1972). The vessels illustrated were made of a fine reddish-brown, evenly-fired clay body, tempered with fine sand and some fine limestone-calcite inclusions. The body was indistinguishable from the slip which merely formed a fine surface film of almost identical color.

Examples of the forms illustrated (fig. B.15: 36, 37) have come from Tarsus, Gözlu Kali (rouletted keel rims, Goldman 1950, fig. 208P), Diksi Faraj (Harper 1980, fig. B: 24 and 25; sixth century A.D.) and from a mid-sixth century A.D. deposit in the Agora, Athens (Hayes 1972, form 3F, fig. 69: 23 and p. 334).

Other late Roman-Byzantine fine wares were rare, but two small sherds of Terra Sigillata-like pottery and one of 'imitation sigillata', possibly African Red Slip (first-seventh centuries A.D.), were found at Site 14.

The ceramics from the two sites showed considerable overlap, but Site 14 yielded a greater variety of forms and fine wares than Site 12. This, in part, results from the larger sample collected from Site 14 but may also reflect a slightly longer span of occupation at that site.

Of the illustrated pottery, the carinated scroll painted amphorae are taken as being diagnostic of occupation between the fourth and sixth centuries A.D. The brittle ware forms provided poor dating evidence and can only be used to suggest a late Roman-early Byzantine date, with occupation continuing into the eighth century at Site 14. The Late Roman C form 3F (fig. B.15: 36, 37) indicates occupation during the sixth century, that is probably during the reign of Justinian I. The presence of a third century form (fig. B.15: 38), as well as the possibility of a more extended chronological range of certain grooved rims, indicates that occupation might have occurred as early as the third century A.D. The few scraps of glazed ware sherds found may equally have been Byzantine or Islamic but none matched the distinctive early Islamic wares of Site 6 or Kurban Höyük (see Site 6, below). Sites 12 and 14 were probably therefore abandoned by the ninth century, if not earlier.

SITE 12 POTTERY CATALOG (fig. B.15: 1–14)

1. White surface, very pale brown ware. Common sand. Diam. 12 cm.
2. Very pale brown ware. Sand. Diam. 8 cm.
3. Very pale brown. Sand. Diam. 14 cm.
4. Dark brown painted scroll above horizontal band on carination, pale brown ware; pink core. Sand.
5. 'Brittle ware'; red, moderately smooth, hard. Diam. 19 cm.
6. 'Brittle ware'; red to red-brown surface, gray core. Fine sand. Diam. 22 cm.
7. Brown. Sand temper with occasional limestone inclusions. Diam. 14 cm.
8. Pink. Sand. Diam. 8 cm.
9. Very pale brown surface, pink core. Sand with occasional limestone inclusions. Diam. 10 cm.
10. Very pale brown surface, gray core. Sand. Diam. 10 cm.
11. Very pale brown. Sand. Diam. 15 cm.

12. Very pale brown. Sand. Diam. 12 cm.
13. Very pale brown with pink-very pale brown core. Sand. Diam. 32 cm.
14. Very pale brown with pink-very pale brown body and core. Sand. Diam. 39 cm.

SITE 14 POTTERY CATALOG (fig. B.15: 15–44)

15. Pink exterior, pale brown interior, dark gray-pink core. Sand. Diam. 14 cm.
16. Very pale brown exterior, pink interior, dark gray-brown core. Diam. 12 cm.
17. Pale brown surface, pink core. Sand with some limestone inclusions. Diam. 9 cm.
18. Very pale brown surface, pink core. Sand. Diam. 7 cm.
19. Very pale brown. Sand. Diam. 10 cm.
20. Very pale brown. Sand. Three horizontal grooves incised into neck. Diam. 14 cm.
21. Very pale brown. Sand. Diam. 14 cm.
22. Pink exterior, pale brown interior, gray core. Medium and coarse sand. Diam. 8 cm.
23. Pale brown surface, gray-brown core. Sand. Diam. 12 cm.
24. Very pale brown. Sand. Diam. 11 cm.
25. Very pale brown. Medium and coarse sand. Diam. 12 cm.
26. Dark brown painted scroll design, probably above carination; very pale brown core with pink-very pale brown surface. Sand.
27. Dark brown painted design just below neck; very pale brown surface, pink core. Sand with fine limestone inclusions.
28. Dark brown painted scroll design, probably above carination; very pale brown surface, pink core.
29. Brown painted spiral design on exterior; very pale brown ware. Sand.
30. 'Brittle ware'; black exterior, otherwise evenly fired red body. Very fine sand. Ridges and grooved exterior. Diam. 14 cm.
31. 'Brittle ware'; black slipped surface, dark orange body. Medium-coarse sand. Diam. 10 cm.
32. 'Brittle ware'; black exterior, red interior, dark orange body. Diam. 10 cm.
33. 'Brittle ware'; brownish-red surface, gray-brown core. Fine sand with some coarser inclusions. Diam. 16 cm.
34. 'Brittle ware'; dark red surfaces, dark orange body. Fine sand.
35. 'Brittle ware'; dark red surface, dark orange body. Fine sand. Diam. 24 cm.
36. 'Late Roman C'; plain matte surface, body evenly fired red-brown. Fine sand, some fine limestone inclusions. Rouletted design impressed on rim exterior. Diam. 22 cm.
37. 'Late Roman C'; plain, smooth matte surface, evenly fired red-brown paste. Fine sand, some fine limestone inclusions and fine vesicles. Diam. 24 cm.
38. Black-red exterior, red-brown interior, dark brown core. Sand with occasional limestone inclusions. Diam. 22 cm.
39. Very pale brown surface, gray-brown core. Sand. Diam. 15 cm.
40. Very pale brown surface, brown core. Sand. Diam. 8 cm.
41. Very pale brown. Sand. Diam. 8 cm.
42. Very pale brown. Sand. Diam. 10 cm.
43. Very pale brown surface, pink core. Sand. Diam. 16 cm.
44. Pink surface, gray core becoming brown towards surface. Chaff. Diam. 11 cm.

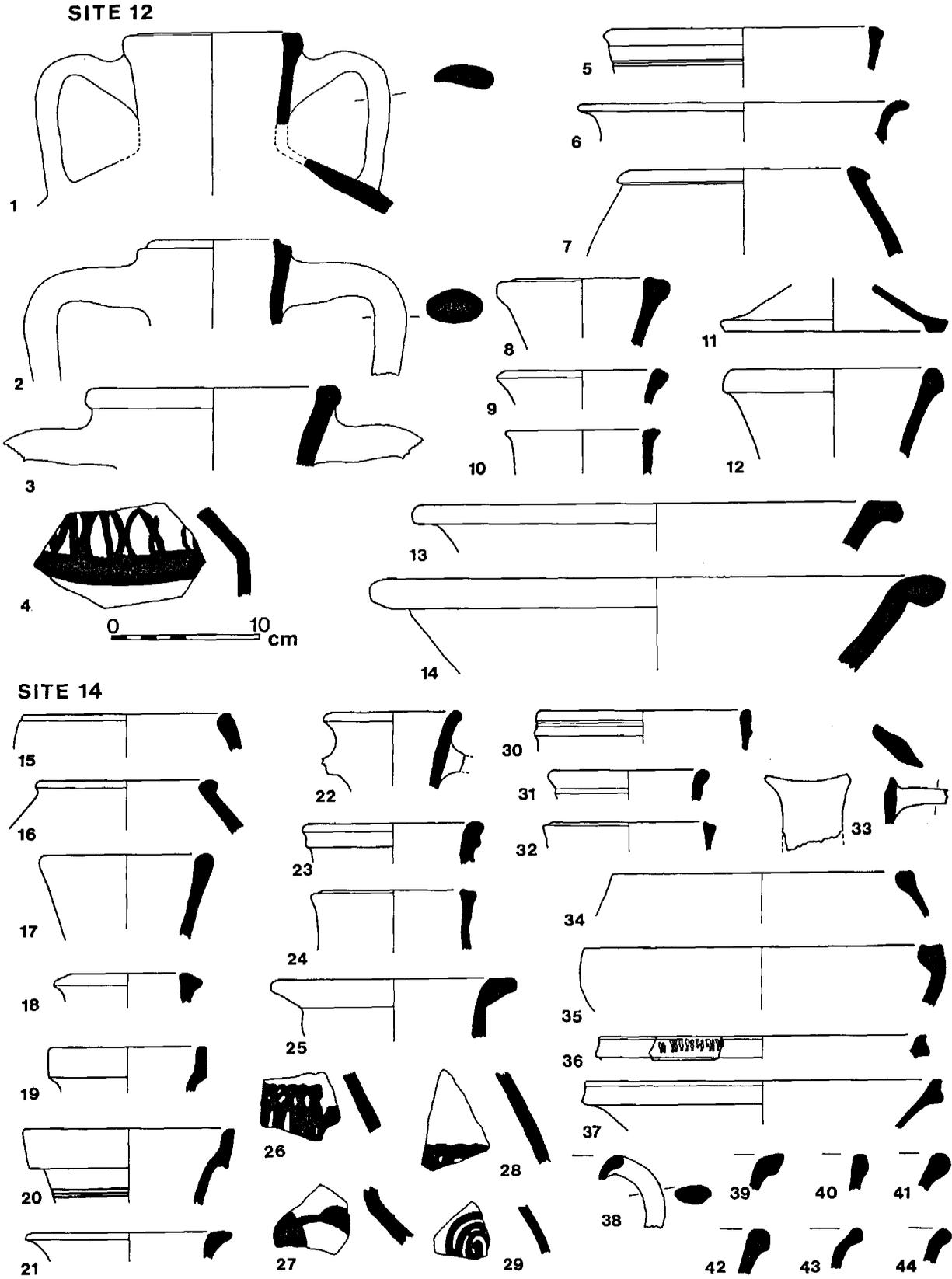


Figure B.15. Late Roman-Early Byzantine Pottery from Sites 12 and 14 (Dokuzköy Harabesi).

SITES 3, 26, 32, AND 37: LATE ROMAN-EARLY BYZANTINE

Sites 3 and 26 were both very small, but both yielded sufficient pottery to date them confidently to within the late Roman-Byzantine period. Sites 32 and 37 (Akpınar Köy) were both larger and provided a wider range of ceramic types which included, at Site 37, at least two EB and two post-Medieval artifacts. Although these wares were readily isolated, the possible presence of wares of other periods cannot be excluded, therefore the Site 37 assemblage cannot be considered as 'pure' as those from Sites 12 and 14, above.

All four sites produced fragments of carinated, scroll painted amphorae (e.g., fig. B.16: 9, 10, 28, and 29); scroll painted carinations (fig. B.16: 7, 14, and 15); as well as a variety of amphorae, jar or jug handles (fig. B.16: 4, 21–27, 33, 34, and 36). Also present was the lid (fig. B.16: 35) which was paralleled at Site 12 (fig. B.15: 11).

Broad open bowls, as at Sites 12 and 14, can only be assigned to a broad chronological range, but fig. B.16: 41 resembles an example from 'Ain Sinu (Oates 1968, fig. 24: 90, early third century A.D.). Smaller open bowls such as fig. B.16: 1 and 12 were found on other late Roman-Byzantine sites in the area including several surveyed by Özdoğan (e.g., four examples from Incirlihtepe, Özdoğan 1977, fig. 97: 2, 7, 10 and 11).

Fragments of brittle ware cooking pots and their handles were found at all four sites as follows: Site 3, four strap handles; Site 26, one strap handle; Site 32, three body sherds, three rim sherds, and two strap handles; Site 37, twenty-two body sherds, five rims, and six handles. Illustrated examples comprise fig. B.16: 5, 19, 20, 26, 31, 37, and 38. Only fig. B.16: 31, with an early Byzantine parallel from Dibsī Faraj (Harper 1980, fig. D: 64) could be assigned to a specific period.

As at Sites 12 and 14, fine wares were scarce, but fig. B.16: 46 from Site 37 resembled Late Roman C ware but the form is uncertain. The red slipped base (fig. B.16: 39) may be a variety of African Red Slip. In general, the fine wares were too small and too few in number (Site 32: two sherds; Site 37: six sherds) to provide chronological information.

Tile fragments, such as fig. B.16: 8 from Site 26, were present on all late Roman-Byzantine sites in the area and, judging from the presence of vitrified wasters at, for example, Site 2, were of local manufacture.

Although occupation at Site 37 was apparently restricted to one main period, the site did produce a mid or late EB grooved rim (fig. B.16: 49) as well as a probably Ottoman glazed jar rim (fig. B.16: 50) and the bowl of an Ottoman pipe (fig. B.16: 52).

SITE 3 POTTERY CATALOG (fig. B.16: 1–3)

1. Pink, hard with moderately smooth fabric. Incised design on upper face of everted rim. Diam. 18 cm.
2. Very pale brown surface, pale red-brown core. Slightly friable, common sand. Diam. 16 cm.
3. Very pale brown. Sand. Diam. 26 cm.

SITE 26 POTTERY CATALOG (fig. B.16: 4–8)

4. Cream, pink core. Sand. Diam. 11 cm.
5. 'Brittle ware'; red. Rare fine-medium sand.
6. Very pale brown. Radiating pattern of low relief incisions.
7. Dark gray-brown paint on very pale brown body. Sand.
8. Tile. Pink. Abundant white inclusions (limestone-calcite) give a granular appearance.

SITE 32 POTTERY CATALOG (fig. B.16: 9–27)

9. Pink, vestigial red paint on top of rim. Sand. Diam. 18 cm.
10. Very pale brown. Sand. Diam. 14 cm.
11. Red surface, pale brown core. Common sand. Diam. 14 cm.
12. Very pale brown with smooth paste. Diam. 14 cm.
13. Pink-pale brown with patches of red paint on top of rim and exterior. Sand. Diam. 8 cm.
14. Red-brown painted scroll design on exterior. Light gray, sand tempered body.
15. Vestigial red painted scroll design on very pale brown body. Sand.
16. Pale brown surface, red-brown core. Sand.
17. Very pale brown. Sand.
18. Cooking pot ware; dark red. Common sand.
19. 'Brittle ware'; blackish-red exterior half of body, red interior half. Common fine sand.
20. 'Brittle ware'; dark red surface, bright red-brown core. Common fine white sand.
21. Red-brown glossy surface, brown body with gray core. Abundant sand.
22. Pink surface, pale pinkish-brown core. Sand.
23. White. Sand.
24. Pale brown. Sand.
25. White. Sand.
26. 'Brittle ware'; black. Common fine-medium sand.
27. Pink. Sand.

SITE 37 POTTERY CATALOG (fig. B.16: 28–52)

28. Cream with vestigial dark paint on rim top. Diam. 11 cm.
29. Very pale brown. Sand. Diam. 12 cm.
30. Off white. Abundant fine sand. Diam. 12 cm.
31. 'Brittle ware'; dark red-brown exterior, dark red interior, red-brown core. Common fine, white sand. Diam. 13 cm.
32. Pale gray. Fine sand. Diam. 14 cm.
33. Off white. Sand.
34. Vestigial red slip; pale brown body. Common coarse sand to 4 mm. Shallow groove around rim top. Diam. 11 cm.
35. Off white. Sand. Diam. 13 cm.
36. White exterior, pale brown interior and core. Sand. Diam. 12 cm.
37. 'Brittle ware'; black exterior, red-dark red-brown core and interior. Occasional sand. Diam. 14 cm.
38. 'Brittle ware'; dark red-brown exterior, red interior, orange core. Fine-medium sand. Diam. 9 cm.
39. Red slipped surface, pink moderately smooth core. Occasional fine sand. Diam. 5 cm.
40. Gray, brown, and red painted bands on exterior, pale brown interior, brown core. Common sand. Diam. 23 cm.
41. Pale brown surface, pale brown-gray-brown-pink core. Common sand. Diam. ca. 30 cm.
42. Pale brown. Sand.
43. Pink surface, pale brown core. Medium sand. Diam. ca. 40 cm.
44. White surface, off white core. Sand and calcite-limestone.
45. Pale red surface, brown core. Moderately soft with irregular voids and sand.
46. Pale red-brown exterior, red-brown interior and core. Rare sand.
47. 'Brittle ware'; dark red exterior, red interior and core. Abundant fine, white sand.
48. 'Brittle ware'; dark red body.
49. Late third millennium grooved rim. Pink outer core, pale brown inner core; PSW. Fine-medium sand. Diam. 26 cm.

50. Thick bright green glazed surface. Pale red, sand tempered body. Diam. 10 cm.

51. Lamp fragment. Very pale brown. Abundant medium-coarse sand.

52. Ottoman pipe bowl. Dark red surface, gray interior, gray core. Trellised pattern in low relief with rouletting above and below on exterior. Smooth fabric. Diam. 1.7 cm.

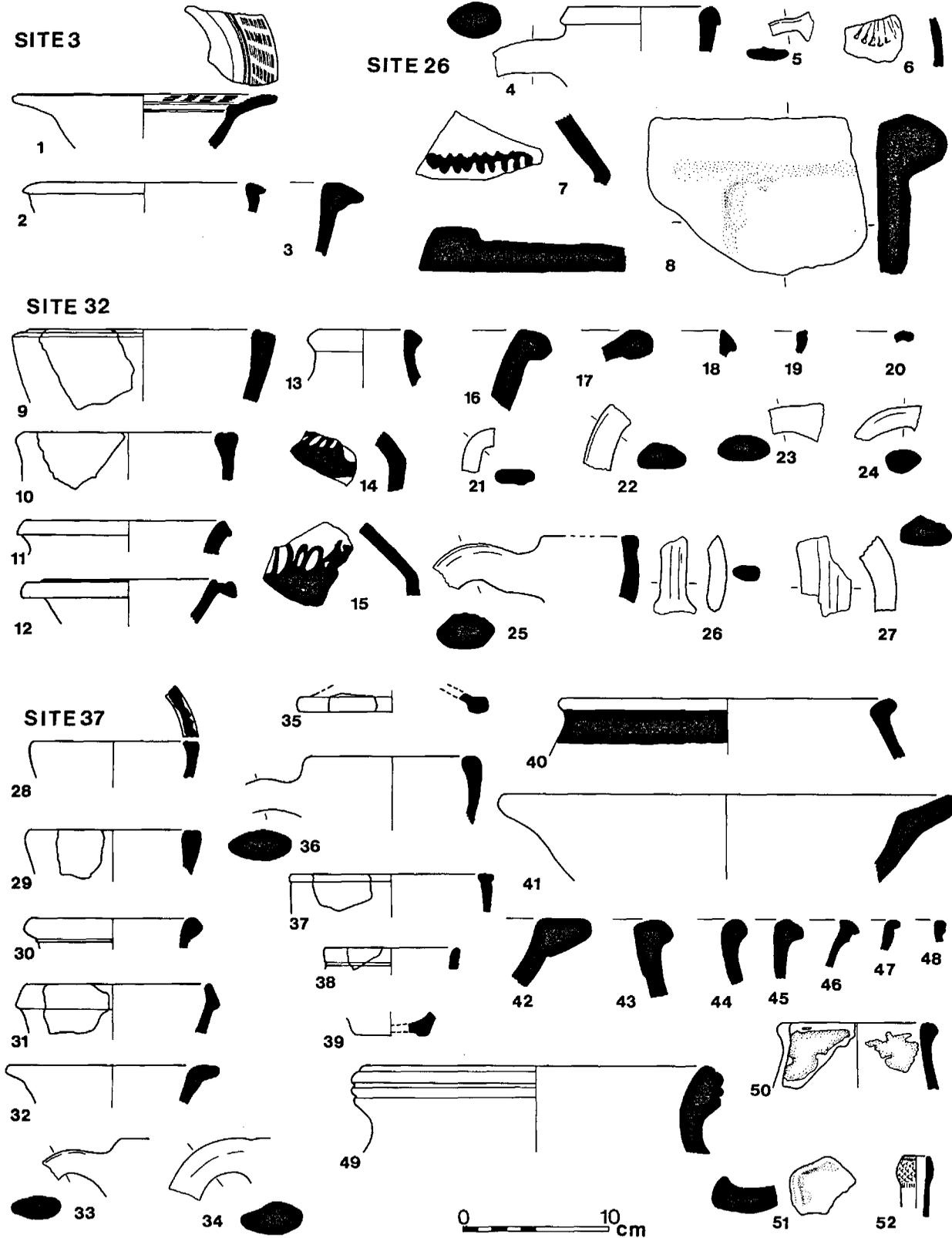


Figure B.16. Late Roman-Early Byzantine Pottery from Sites 3, 26, 32, and 37 (Akpınar Köy).

SITE 6 (DEĞİRMEN HARABESİ): LATE ROMAN-EARLY BYZANTINE AND EARLY ISLAMIC

The small site of Değirmen Harabesi was the only briefly occupied site surveyed, which produced a significant quantity of early Islamic ceramics. The presence of a small but significant quantity of wares and forms comparable to those found at the late Roman-Byzantine Sites 12 and 14 (see above) suggests that habitation commenced during the fourth to sixth centuries A.D. Finally, a small number of late third millennium B.C. ring bases and rim sherds (total of nine) implies the presence of a settlement outlier related to Site 16 on the opposite bank of the İncesu Deresi.

Late Roman-early Byzantine forms included carinated, scroll painted amphorae sherds (fig. B.17: 41 and 42). One example of a grooved rim (similar to fig. B.15: 2 from Site 12) was found (not illustrated), but more often rims were simple as in fig. B.17: 12–15. Seven ridged oval handles probably belonged to similar amphorae, jars or jugs, but three abnormally wide examples, 5–6 cm across, may be later.

Two 'band rim' jars (fig. B.17: 9 and 10) are identical to examples from Kurban Höyük (KH II period II, pl. 141: E, H, I) as well as one (fig. B.15: 20) from Site 14. The presence of the latter at Site 14 suggests that either the site continued to be occupied into early Islamic times (Kurban Höyük period II) or that the form was long-lived with late Roman-early Byzantine precursors.

Brittle ware cooking pots, already familiar in the preceding period (Sites 12 and 14, fig. B.15, above), were present in three forms: jars (fig. B.17: 23, 24); hemispherical bowls (fig. B.17: 27–29), and holemouth globular jars (fig. B.17: 32–36). Two subtypes of brittle ware were distinguishable: a) a hard, thin-bodied ware tempered with fine sand; and b) an unevenly fired, less hard and brittle ware, tempered with sand in which white inclusions were common. Although intermediate fabrics were present, subtype a fabrics were more common in late Roman-early Byzantine vessels at Sites 12 and 14. Figure B.17: 27–29, as at Site 14, were all in a fine sand tempered ware and appear to be early Islamic, Samarran types (Northedge 1981, fig. 245: 5; Northedge forthcoming, fig. 27: 9–11). In contrast, fig. B.17: 32, 35, and 36, the first of which was paralleled in ninth-tenth century A.D. levels at Kurban Höyük (KH II period II, pl. 142: A and B; pl. 143: D–F) were of fabric subtype b. Although the holemouth form did occur at late Roman-early Byzantine sites (e.g., Site 14, fig. B.15: 34) it seemed more common at Site 6 (five examples, fig. B.17: 32–36).

The jar rim (fig. B.17: 24) is similar to a cooking pot form from Kurban Höyük (cf. KH II period II, pl. 143: L) and may again be early Islamic. Other characteristic brittle ware cooking pot forms were ridged strap handles (fig. B.17: 25, 26). Because details of rim and neck were lacking, these can only be allocated to the broad span of first-tenth centuries A.D.

Diagnostic early Islamic pottery included the following: Glazed bowls (fig. B.17: 1–4). Bowl interiors were usually decorated with bluish-green, green or brown glaze over yellow glaze, but in some cases deterioration of the glaze made the decoration unrecognizable. Bowl exteriors were normally unglazed so that the matte brown or reddish-brown body was visible, with the exception of occasional dribbles of glaze, such as on the exterior of fig. B.17: 3. Similar open bowls were present in period II levels at Kurban Höyük (ninth-tenth century A.D.: KH II, pl. 137: E) and at the multiperiod Site 18 at Yaslica (fig. B.27: 36–39). Figure B.17: 5 represents a common type at Kurban Höyük again from period II levels (KH

II, pl. 138: A-C, H, I). Although a similar example of unknown provenance from the Benaki Museum Athens has been assigned a tenth-twelfth century date, other examples from a more secure context suggest a ninth or tenth century date (KH II period II, note 5).

Cream wares (fig. B.17: 11 and 20–22) were completely absent from the late Roman-early Islamic site assemblages but provided good parallels with early Islamic wares from other parts of the Near East. This distinctive ware usually had white to pale yellow surfaces (5Y 8/2 to 8/3) which had a chalky feel and a light gray, pale brown or pale yellow core (5Y 7/2, 5Y 7/3–8/4 and 10YR 7/4). Wheelthrown vessels commonly had horizontal striations and bases often appear to be string cut. The disc base (fig. B.17: 11, one of 6 collected) is a characteristic ninth-tenth century A.D. type from the Persian Gulf and Mesopotamia as is the small round-sectioned handle (fig. B.17: 22) which belongs to a small eggshell or cream ware cup or jug. The rim sherds (fig. B.17: 20 and 21) may also belong to small jugs.

In conclusion, the presence of pottery analogous to that from Sites 12 and 14 and early Byzantine levels at Dibsī Faraj suggests that habitation commenced in the fourth-sixth centuries A.D. A large quantity of early Islamic glazed and other wares readily paralleled in Kurban Höyük period II levels, as well as elsewhere in the Middle East, suggests that the main occupation phases were during the ninth-tenth centuries A.D., that is, contemporary with the caliphal occupation of Samarra. Although it is quite possible that occupation continued through the intervening seventh-ninth centuries, it had evidently ceased however by the twelfth-thirteenth A.D. centuries when a distinctive suite of ceramics were in use in the area (Sites 23 and 35, fig. B.18, below).

SITE 6 POTTERY CATALOG (fig. B.17)

1. Matte red-brown exterior, green glazed interior with dark brown and yellow vertical dribble of glaze. Body: red brown surface tending to light brown core. Fine-medium sand. Diam. 21 cm.
2. Matte red-brown exterior except for dribble of yellow-green glaze; dark yellow glazed interior with two dribbles of green glaze. Body: red-brown surface tending to brown core. Fine-medium sand. Diam. 27 cm.
3. Green and brown glaze dribbles on exterior, blue-green and brown glaze dribbled over yellow glaze on interior. Body: red-brown, fine-medium sand. Diam. 28 cm.
4. Matte brownish-gray exterior with dark green dribbles of glaze, interior glazed very dark green-brownish-green. Body: brown becoming brownish-gray at exterior. Coarse sand. Diam. 23 cm.
5. Incised lines and excised triangles cut into exterior and covered in green glaze; green glazed interior. Body: red-brown, fine sand.
6. Thick dark green glazed surface. Red body, medium-coarse sand. Diam. 11 cm.
7. Matte red-brown exterior, green over yellow glaze on interior with brown lines and curvilinear glazed decoration on interior near center. Body: red-brown, fine-medium sand. Diam. 14 cm.
8. Matte red-brown exterior; interior has poorly preserved green glaze dribbles over yellow glaze. Body: red-brown, fine-medium sand. Diam. 12 cm.
9. Very pale brown. Fine-medium sand. Diam. 17 cm.
10. Pale brown surface, pink core. Sand. Diam. 17 cm.
11. 'Cream ware'; pale yellow, fine-medium sand. Wheelthrown striations on surface. Diam. 8 cm.
12. Gray-brown. Sand. Diam. ca. 14 cm.
13. Very pale brown. Sand. Diam. 11 cm.
14. Very pale brown. Sand. Diam. 11 cm.

15. Pink-red-brown. Sand. Diam. 12 cm.
16. Very pale brown. Sand. Diam. 12 cm.
17. Very pale brown, pink core. Sand. Diam. 16 cm.
18. Very pale brown. Sand. Diam. 18 cm.
19. Very pale brown. Sand. Diam. 23 cm.
20. 'Cream ware'; pale yellow. Fine sand, conspicuous throwing striations on surface. Diam. 10 cm.
21. 'Cream ware'; pale yellow with chalky surface. Very fine sand. Corrugated neck. Diam. 10 cm.
22. 'Cream ware'; very pale yellow-brown. Fine-medium sand.
23. 'Brittle ware'; red body. Medium-coarse white sand. Diam. 10 cm.
24. 'Brittle ware'; black corrugated exterior, red-brown interior and core. Medium-coarse white sand. Diam. 12 cm.
25. 'Brittle ware'; red-brown surface, very dark gray-brown core. White sand.
26. 'Brittle ware'; black exterior, red interior, dark brown core. Fine sand.
27. 'Brittle ware'; Dark red surface, black core. Moderately dense with sand. Diam. 16 cm.
28. 'Brittle ware'; red-brown corrugated body. Fine sand. diam. 16 cm.
29. 'Brittle ware'; dark red surface, pale red core. Hard, rare fine sand. Diam. 23 cm.
30. Very pale brown. Sand temper. Diam. 20 cm.
31. Very pale brown. Sand, some coarse inclusions. Diam. 34 cm.
32. 'Brittle ware'; brown slipped exterior, black slipped interior, brown-red-brown core. Medium-coarse white sand. Diam. 13.50 cm.
33. 'Brittle ware'; red. Fine sand. Diam. 19 cm.
34. 'Brittle ware'; red-brown surface, gray-brown core. Sand. Diam. 16 cm.
35. 'Brittle ware'; red-brown surface, dark gray core; corrugated body. White sand. Diam. ca. 21 cm.
36. 'Brittle ware'; red-brown surface, brown core. Fine sand, some white sand. Diam. 18 cm.
37. Gray-brown surface, pale brown core. Sand. Diam. 45 cm.
38. Red-brown. Fine-medium sand. Diam. 47 cm.
39. Brown surface, red-brown core. Fine sand. Incised wavy line cut in top of rim. Diam. 48 cm.
40. Very pale brown. Sand. Comb-incised wavy lines in top of rim.
41. Dark brown scroll painted on exterior. Very pale brown body. Sand.
42. Brown painted open scroll on exterior. Pink-pale brown body. Sand.
43. Pink-red-brown. Sand. Diam. 6 cm.
44. Jar lid(?) Red-brown with medium sand. Two pierced holes for attachment of string. Diam. 7 cm.

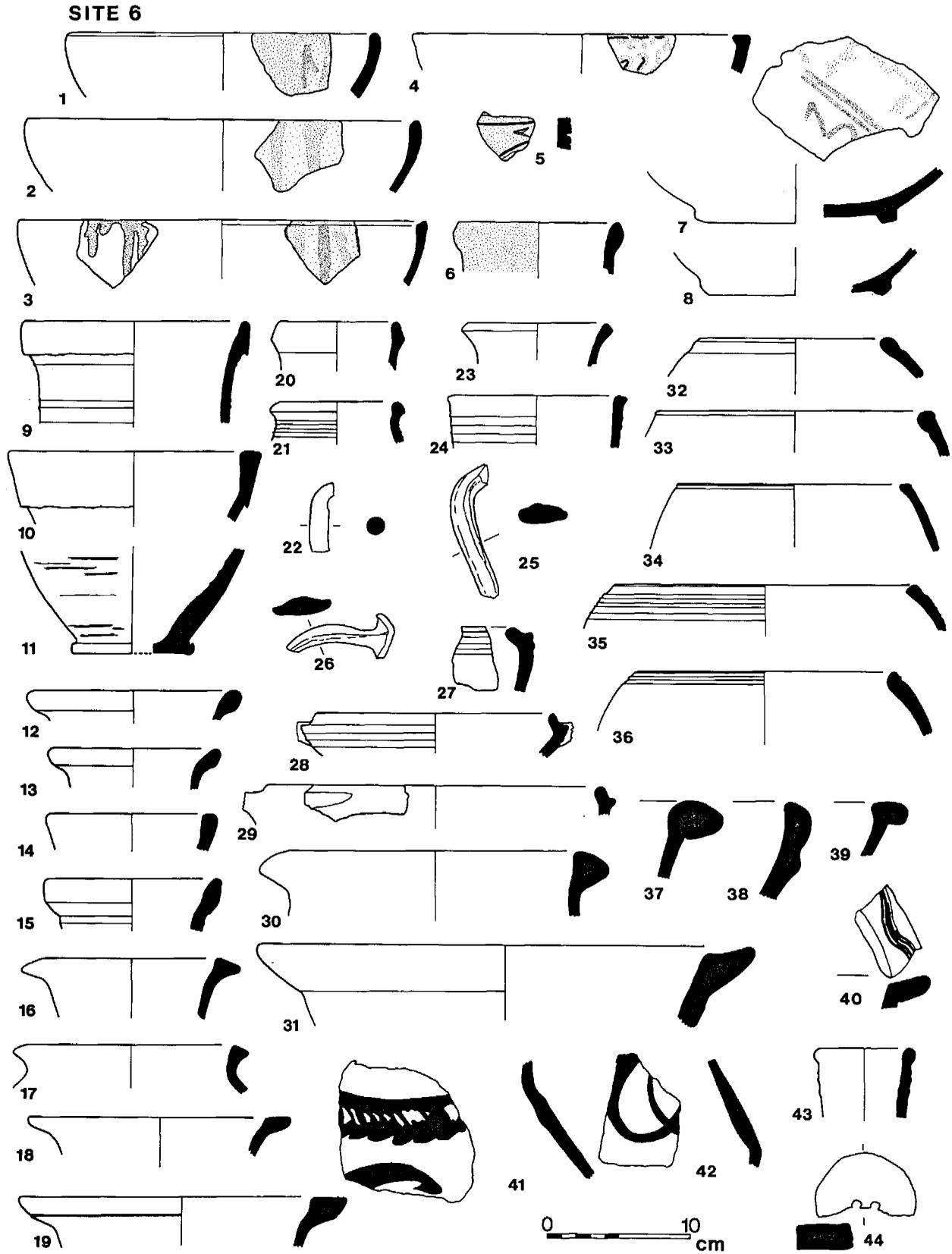


Figure B.17. Late Roman-Early Byzantine and Early Islamic Pottery from Site 6 (Değirmen Harabesi).

SITES 23 AND 35: MEDIEVAL (TWELFTH-THIRTEENTH CENTURIES A.D.)

Both sites, although small, were well-defined and produced a distinctive group of pottery closely comparable to that excavated from twelfth-thirteenth centuries A.D. levels at Gritille Höyük, 15 km to the NE. The following observations are based on information on the Gritille ceramics kindly provided by Scott Redford and Gil Stein.

The small number of glazed wares from Site 23 included four sherds of green glazed ware identical to those from Gritille as well as a green splash-glazed sherd and two yellow glazed wares. The polychrome glazed ring base (fig. B.18: 14) was internally glazed with panels defined by broad inclusions in the sgraffiato technique of the eleventh century or later. There was no overlap in either type of glaze or vessel form between the twelfth-thirteenth century glazed wares from Site 23 and those from the ninth-tenth century Site 6.

Probably the most common diagnostic surface find was pottery with polished or burnished, lustrous red slip (a total of 13 sherds from Site 23). Sherds were mainly from handled jars some with folded rims (Site 23, fig. B.18: 2, 3, and 12; Site 35, fig. B.18: 21).

Red splash-painted ware was similar both in general form and body fabric to red-slipped ware, clay bodies being somewhat softer and less well-fired than those of the late Roman-early Byzantine period. Figure B.18: 11 from Site 23 and fig. B.18: 22 from Site 35 were the only examples collected.

Cooking pots, although slightly brittle like their early Islamic and late Roman-early Byzantine predecessors, were softer and less well fired. Fabrics were reddish-brown to black and tempered with medium-coarse sand including mica. Examples from Site 23 included rim sherds (fig. B.18: 4, 5, and 6) and handles (fig. B.18: 10, 13) the last example is fluted. Only a single incised sherd of this ware (fig. B.18: 18) came from Site 35.

The distinctive pot lids (fig. B.18: 15 and 16) are diagnostic Medieval forms for the area and are decorated in a variety of patterns (for additional examples see Özdoğan 1977: Site T 50-6, fig. 90: 3; Site T 51-2 fig. 80: 3).

The coarse chaff and grit tempered rim (fig. B.18: 9) although superficially resembling pottery, appears, by analogy with examples from Gritille, to be an oven fragment.

In conclusion, Site 23 is taken as being the type site for the Medieval (twelfth-thirteenth centuries A.D.) within the Kurban Höyük survey area and all of the above ceramic types could be closely matched with types from Gritille. Additional Medieval forms are illustrated for the multiperiod Site 8 (fig. B.25).

Site 35, although apparently short lived and contemporaneous with Site 23, contained a small outlier, area a, which produced little pottery, none of it comparable to that from the main site. The only sherd worthy of illustration (fig. B.17: 19) is not diagnostic.

SITE 23 POTTERY CATALOG (fig. B.18: 1-16)

1. Pale red. Common sand. Diam. 8 cm.
2. Red slipped exterior, pale red interior and core. Common limestone-calcite grits. Diam. 10 cm.
3. Red slipped exterior, pale brown interior and core. Common sand, including ca. 20 percent dark minerals. Diam. 13 cm.
4. Gray surface, dark gray core. Common sand. Diam. ca. 22 cm.
5. Red and black exterior, dark red interior, red/brown/red core. Abundant medium-coarse sand. Diam. ca. 25 cm.

6. Black exterior, red-black interior, red-brown core. Abundant medium-coarse sand. Diam. ca. 30 cm.
7. Dark red exterior, pale brown interior and core. Abundant sand.
8. Pale red exterior, gray-brown interior, pale red-brown core. Fine sand.
9. Rim of small fired clay oven. Brown surface, dull orange core. Abundant chaff and grit. 2 cm. thick.
10. Red surface, red-brown core. Abundant sand. Diam. 19 cm.
11. Red paint splashed on pink exterior, brown body. Common sand (ca. 50 percent dark minerals).
12. Red slipped surface, brown body. Common sand including ca. 50 percent dark mineral inclusions.
13. Black surface, black-pinkish-gray-pale red core. Common sand.
14. 'Sgraffiato ware': Green, brown, pale brown, and red-brown panels between 1 mm incisions. Clear glaze applied over the top. Pink body with occasional sand and rare voids. Diam. 6 cm.
15. Lid. Greenish/gray-brown; occasional sand. Bottom has many small impressions. Diam. ca. 26 cm.
16. Lid. Pale brown surface, dark gray core. Common sand and voids. Incised chevron pattern on underside of perimeter. Diam. ca. 18 cm.

SITE 35 POTTERY CATALOG (fig. B.18: 17–24)

17. Very pale brown slipped exterior, pale brown core. Abundant white sand. Diam. 22 cm.
18. Dark red exterior with incised wavy and linear decoration; red-gray interior, red/gray/red core. Very abundant medium-coarse sand.
19. Pale brown surface and outer core, dark gray core. Moderately soft, occasional chaff and grit. Area a.
20. Pink-red-gray exterior, gray interior, dark gray core. Abundant sand.
21. Bright red slipped exterior, brown body. Abundant sand, occasional voids. Folded rim.
22. Red paint splashed on exterior; pale brown body. Abundant sand.
23. Pale pinkish-brown surface, pale brown/dark brown core. Moderately soft, abundant chaff, occasional grits. Diam. 10 cm.
24. Cream slipped exterior, pink body. Smooth, some fine sand. Diam. 14 cm.

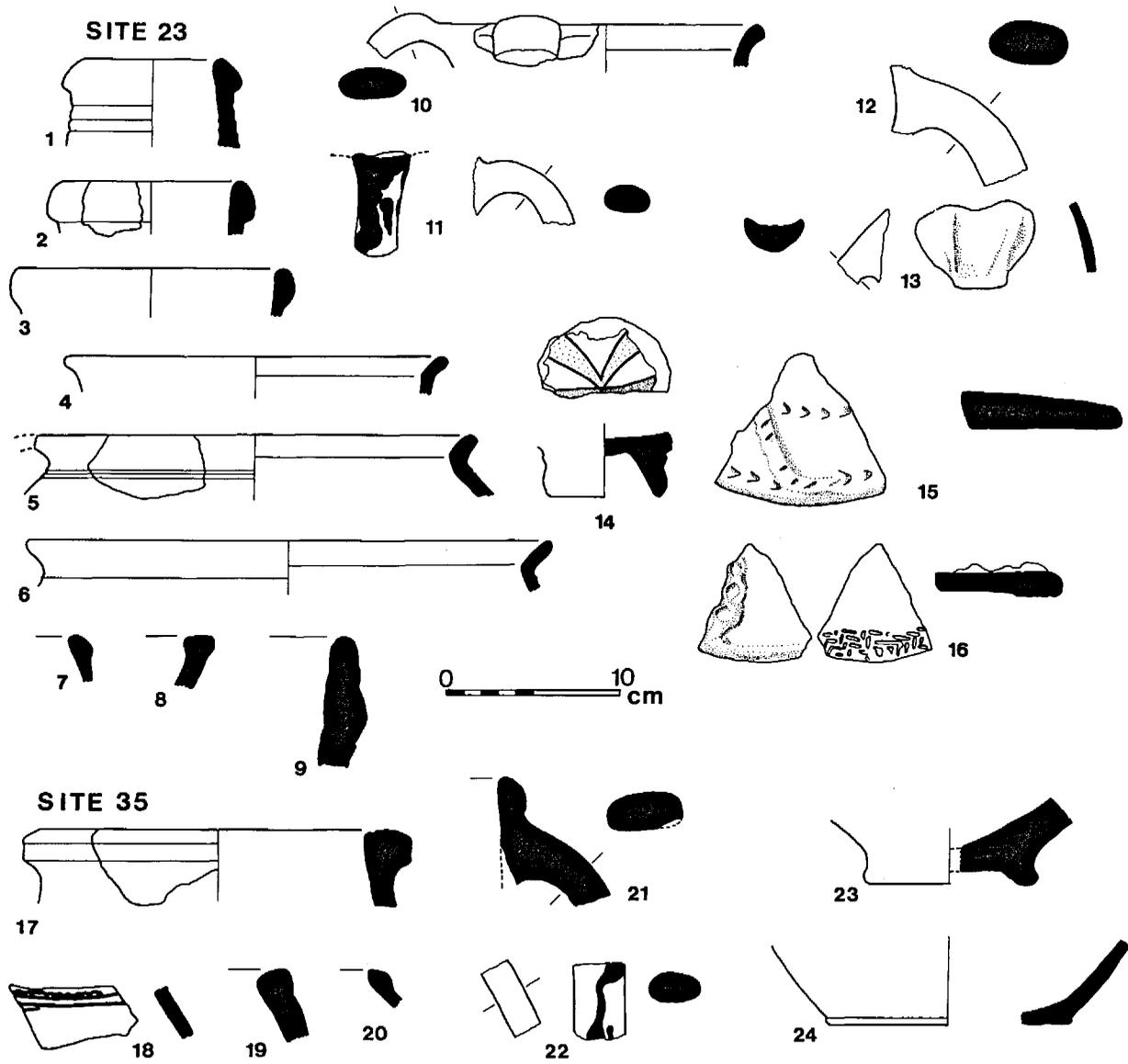


Figure B.18. Medieval Pottery from Sites 23 and 35.

SITES 2, 7, 8, 18, 39, AND 44: MULTIPERIOD

SITE 2 (HÖYÜK MEVKII)

PERIODS: Hellenistic; Roman; Late Roman-Early Byzantine; Early Islamic(?).

The first occupation phase is indicated by Hellenistic forms, notably incurved rim bowls (fig. B.19: 2, two examples); a dish with down-turned rim (fig. B.19: 1, cf. Site 19, fig. B.14: 24); a ring base of Hellenistic-Roman type (fig. B.19: 3) and possibly also the pithos rim (fig. B.19: 7) and the square jar rim (fig. B.19: 16).

Roman wares included two Eastern Sigillata body sherds (not illustrated). Brittle wares (fig. B.19: 9–13) included forms present at early third century A.D. 'Ain Sinu (fig. B.19: 12, 13; Oates 1968, fig. 23: 76). Also found were three corrugated body sherds as well as a handled form, again with a possible parallel at 'Ain Sinu (fig. B.19: 9; Oates 1968, fig. 23: 85). The brittle wares appear to belong to an extended Roman-late Roman-early Byzantine range of forms. Jugs with handles flush with the rim, one example of which is illustrated (fig. B.19: 15, four variants in total), may also be Hellenistic or Roman.

Amphora rims included four with grooves (fig. B.19: 4 and 5, illustrated) but also simple rounded and squared forms. Twenty-two handles without rims and ten with rims testify to the abundance of amphorae, but the absence of bases suggests that the round based type predominated. This is supported by the presence of scroll painted and carinated sherds (seven examples, fig. B.19: 20–23 illustrated); fig. B.19: 23, the most complete, can be compared with those of fourth-sixth century A.D. date from Dibsi Faraj (Harper 1980, fig. E: 70 and 71). The open bowl (fig. B.19: 8) was one of six variants, some of which were paralleled by examples at the late Roman-early Byzantine Sites 12 and 14.

Three of the four glazed sherds came from areas g and h, near the top and center of the site (*Appendix A*, fig. A.1) where they presumably represent the later occupation phases. The illustrated example (fig. B.19: 6) appears to be an early Islamic splash glazed ware, but other diagnostic wares of this period were absent (see Site 6, fig. B.17, above). The other glazed body sherds: one possible sgraffiato sherd (tenth century A.D. or later), one dark green glazed sherd, and one green and yellow glazed sherd (possibly early Islamic) were too small to provide reliable chronological information.

In summary, occupation commenced during Hellenistic times (fourth-second centuries B.C.) and continued through the Roman period. The abundance of scroll painted amphora sherds and associated late Roman-early Byzantine forms suggests that occupation probably reached a peak during the fourth-sixth centuries A.D. when the neighboring hilltop Site 3 was occupied. Vitrified tile wasters in the western corner of Site 2 indicate tile manufacture in the Roman-Byzantine periods. Early Islamic diagnostics are rare, and by the seventh-tenth centuries any settlement must have been very small, probably limited to areas g and h.

SITE 2 POTTERY CATALOG (fig. B.19)

1. Cream surface, very pale brown core. Rare medium-fine sand, some elongate voids. Diam. 18 cm. Area e.
2. Dark gray-brown slipped surface, pale red-brown core. Fine sand. Diam. 21 cm. Area b.
3. Pink matte surface, pale red core. Fine sand. Diam. 9 cm. Area b/c.
4. Cream surface, pale brown core. Common sand. Diam. 12 cm. Area c.
5. Cream surface, pale brown core. Common sand. Diam. 16 cm. Area a.
6. White glaze with green splashes on interior. Pink body, fine sand. Diam. 19 cm. Area g.

7. Pink surface, gray-brown core. Abundant sand to 4 mm. Diam. 49 cm. Area b/c.
8. Very pale brown. Sand. Diam. ca. 53 cm. Area f.
9. 'Brittle ware': black surface, dark gray-brown core. Abundant sand. Diam. 8 cm. Area b/c.
10. 'Brittle ware': black slipped surface, black-red-black core. Common fine sand. Diam. 15 cm. Area b.
11. 'Brittle ware': black slipped exterior, dark red interior and core. Common sand. Diam. 25 cm.
12. 'Brittle ware': black slipped exterior, red slipped interior, red-gray core. Sand. Diam. 26 cm. Area c.
13. 'Brittle ware': dark red-dark gray surface, dark red core. Abundant sand. Fire-blackened surface. Diam. 28 cm. Area c.
14. Pale pink. Occasional fine-medium sand. Diam. 11 cm. Area b.
15. Pale red surface, pale brown core. Slightly friable, abundant sand. Diam. 12 cm. Area f.
16. Pink. Occasional sand, common planar voids. Diam. 15 cm. Area b/c.
17. Pale red-brown slipped exterior, pale brown interior, gray-brown core. Slightly friable, common coarse sand. Diam. 14 cm. Area b.
18. Dark red. Abundant sand. Diam. 24 cm. Area c.
19. Pale gray-brown surface, dark gray-brown core. Slightly friable, abundant fine sand. Diam. 34 cm. Area d.
20. Brown painted scroll on exterior, pale brown body. Sand. Area a.
21. As for no. 20. Area c.
22. Brown painted design on exterior, pale brown body. Sand. Area b.
23. As for no. 20. Area a.

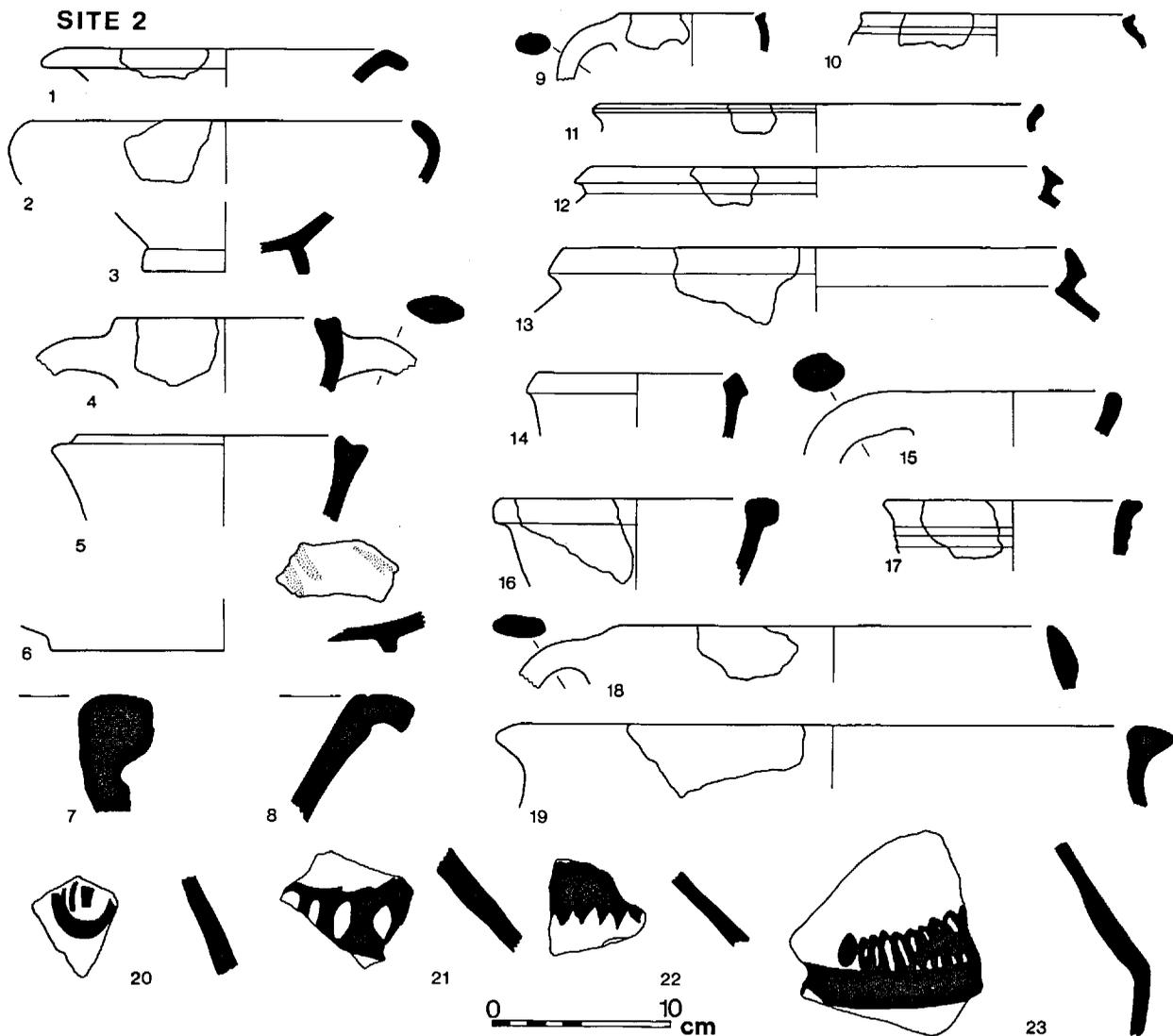


Figure B.19. Multiperiod Pottery from Site 2 (Höyük Mevkii).

SITE 7 (ŞAŞKAN KÜÇÜKTEPE)

PERIODS: Neolithic(?); EB-MB Transition; Late Second Millennium-Early First Millennium; Seleucid-Hellenistic; Roman-Early Byzantine.

Several soft sand and chaff tempered, crude hand made forms, such as figure B.20: 15 may be from Neolithic occupation levels which appear to run beneath Site 7 from the vicinity of Site 28 to the east.

A small quantity of late third millennium barrel jars (fig. B.20: 1–3) (KH II period III barrel 1b) and a figurine fragment (fig. B.22: 42) comprise the only definite evidence of this phase of settlement. The jar (fig. B.21: 6), although possibly EB-MB also closely resembles fourth-third centuries B.C. forms from Pasargadae (Stronach 1978, fig. 117: 13, 14–21).

A substantial body of ceramics suggests the presence of settlement during probably the late second millennium and certainly the first half of the first millennium B.C.

Diagnostic forms included a group of handmade, corrugated bowls (fig. B.20: 4–8). These unevenly fired vessels, in moderately soft sand and sometimes chaff tempered fabrics, are common on sites of the late second-early first millennia in the Malatya-Elaziğ region (Russell 1980, group DD). Excavated examples have come from Korucutepe (Winn 1980, p. 155–75) and Norşuntepe (Hauptman 1972, p. 107 and 1974, p. 85).

Open bowls, predominantly well-made, but in coarse sandy fabrics, less hard than the Plain Simple Wares of the EB, may also belong to the late second-early first millennia B.C. Some forms resemble those from Assyrian levels at Sultantepe, dated by tablets to 648–610 B.C, for example, fig. B.20: 27 (see Lloyd and Gokçe 1953 fig. 7: 23); fig. B.20: 36 (see Lloyd and Gokçe 1953, fig. 7: 19). Other forms (such as fig. B.20: 43 and 68) appear in levels at Gritille Höyük dated by the excavators to the late Iron Age (G. Stein, personal communication). In general, with the exception of the late third millennium forms (fig. B.20: 1–3) all the vessels illustrated on figure B.20 are tentatively assigned to the late second-early first millennia B.C. The sherd which features the distinctive dark gray painted spiral motif below red and black painted bands (fig. B.22: 29) is possibly of the early first millennium. In a fabric it is similar to that of the early Byzantine scroll painted amphorae (see Sites 12 and 14, fig. B.15, above). Similar motifs are known on imported Cypriot wares at seventh-eighth century B.C. Al-Mina in Syria (du Plat-Taylor 1959, pp. 62–92).

Early Iron Age platters (fig. B.20: 23, 63) the latter burnished in red and brown, again suggest early first millennium B.C. occupation (cf. similar forms from eighth century levels at Tell Rifa'at, Syria: Matthers 1981).

Tri-lobed jar rims (fig. B.21: 3) can be paralleled from Iron Age sites in Syria (Matthers 1981, fig. 236: 5, 6) but at Pasargadae continue into fourth-third century B.C. levels (Stronach 1978, fig. 118: 2, 7).

Large coarse-ware jars are a common form as at other probable first millennium sites in the area (for example Site 5, fig. B.12, and Site 27A, fig. B.13, above). The ware is frequently the coarse sand-fine gravel tempered 'chocolate chip ware'. Illustrated rim, body sherds, and bases are fig. B.21: 33–50. The form with finger or wooden baton impressions on a lower bulge of the rim (fig. B.21: 33, 34) has been found at Tell Rifa'at in early first millennium levels (Matthers 1981, fig. 236: 9, 10 and Seton-Williams 1961, pl. 38: 18–20). Related coarse storage jars have, however, been shown to continue well into Seleucid-Hellenistic times at Aşvan Kale (Mitchell 1980, fig. 39).

Other forms which might be assigned an Iron Age date are the vessels with oval handles sprung from the rim (fig. B.21: 21–26). This is also a common form at Site 5 (fig. B.12, above).

The Seleucid-Hellenistic period is represented by a total of 33 rim sherds of incurved rim bowls (see Site 19, fig. B.14, above) and three forms in Hellenistic brown glossy slipped ware (fig. B.22: 1–3). Roman and Hellenistic wares were not always differentiated, but three Eastern Sigillata forms (fig. B.22: 6–8) as well as 28 body sherds were collected, mainly on, or close to the high mound. Figure B.22: 4, 5 and 9–19, are grouped together under the rubric 'Hellenistic-Roman fine wares'.

Brittle wares were common but probably represent a lengthy time span of occupation from the first-second centuries A.D. until the fourth-sixth centuries (fig. B.22: 20–27). Also common, especially on the elliptical low mound, areas p, n, m, and l (*Appendix A*, fig. A.4) were late Roman-early Byzantine scroll painted amphorae (fig. B.22: 31) sometimes with grooved rims (fig. B.22: 35). The large open bowls (fig. B.22: 38–41) again probably belong to this period (see Sites 12 and 14, fig. B.15, above).

In summary, major occupation appears to have commenced during the late second-early first millennium B.C. and continued through until the fourth-sixth centuries A.D. The difficulty of pin-pointing exact phases within this period meant that it was impossible to recognize gaps in the sequence, if these were present. In general the best examples of Iron Age wares came from occupation deposits exposed in the river-ward section at dd, and also from surface scatters in the eastern half of the outer site area at aa, bb, cc, and ee (*Appendix A*, fig. A.4). The presence of abundant evidence of occupation of this period off the main mound explains the relative paucity of Iron Age wares found at this site during the Lower Euphrates Survey (Özdoğan 1977, 180). Seleucid-Hellenistic occupation appeared to be confined to the high mound and its immediate vicinity and late Roman-early Byzantine occupation to the lower oval shaped mound immediately to the south.

SITE 7 POTTERY AND SMALL FIND CATALOGS (figs. B.20–22)

SITE 7 POTTERY CATALOG (fig. B.20)

EB-MB Transition

1. Pale brown. Sand. PSW. Diam. 21 cm. Area j.
2. Pale red surface, gray core. Common sand. PSW. Diam. 32 cm. Area i.
3. Pale red. Common sand. PSW. Diam. 32 cm. Area r.

Bowls and related forms, mainly of the late second and early first millennia B.C.

4. Pale red surface, slightly burnished exterior, black core. Occasional sand, common chaff; moderately soft. Nos. 4–8 all have shallow impressed grooves on exterior. Diam. 36 cm. Area ee.
5. Gray surface, oxidized red in places, pale brown-gray core. Abundant sand; moderately soft. Area aa.
6. Pale red surface, brown core. Common sand, occasional small voids; moderately soft. Area c.
7. Pale red surface, dark gray core. Fine sand and chaff; moderately soft. Area bb.
8. Pale red exterior, pale brown interior, dark gray core. Common sand; moderately soft.
9. Pale red and black surface, gray-brown core. Abundant sand; moderately soft. Finger impressed dimples on shoulder. Area dd.
10. Pale red surface, pale brown-gray-brown core. Common sand, occasional voids. Area ee.

11. Pale red surface, very pale brown core. Common sand; moderately soft. Area d.
12. Pale brown exterior, pale red interior, very pale brown core. Common sand; moderately soft.
13. Pale red surface, red-gray core. Abundant sand and chaff; moderately soft and friable. Diam. 21 cm. Area c.
14. Pale red exterior, red interior, red-brown-pale brown core. Abundant sand, some chaff. Diam. ca. 30 cm. Area c.
15. Pale brown exterior, gray-brown burnished interior gray-brown-gray core. Common sand and chaff; moderately soft. Area dd.
16. Dark red-gray exterior, pale red interior, traces of burning on surface, gray-brown core. Abundant sand; moderately soft.
17. Pale brown exterior, pink interior, brown core. Sand. Diam. 34 cm. Area dd.
18. Pale brown. Common sand. Groove and ridge on rim top. Diam. 29 cm. Area dd.
19. Pale brown. Abundant sand. Diam. 34 cm. Area aa.
20. Pale brown. Common sand. Diam. 34 cm. Area bb.
21. Very pale gray-brown. Common sand, some coarse. Diam. 32 cm. Area k3.
22. Pale red-brown. Abundant sand. Diam. 34 cm. Area dd.
23. Pale red surface, pale brown core. Common sand; some chaff; moderately soft. Diam. 36 cm. Area bb.
24. Pale brown exterior, red interior, pale brown core. Sand. Diam. 10 cm. Area dd.
25. Very pale pink exterior, gray interior and core. Occasional fine sand and voids; moderately soft. Diam. 12 cm. Area dd.
26. Pale brown. Common sand. Diam. 14 cm. Area d.
27. Very pale brown. Smooth fabric, rare fine sand. Diam. 19 cm. Area bb.
28. Pale gray-brown. Occasional sand; moderately dense. Diam. 26 cm. Area p.
29. Pale brown. Common sand. Diam. 22 cm. Area n.
30. Pale brown surface, gray core. Fine sand, planar voids. Diam. 26 cm. Area cc.
31. Very pale brown. Abundant sand. Diam. 26 cm. Area cc.
32. Pale brown surface, dark gray core. Occasional fine sand, common chaff. Diam. ca. 38 cm.
33. Pale brown surface, gray core. Common sand. Diam. 26 cm. Area z.
34. Pale red-brown surface, pale gray core. Occasional sand and chaff. Diam. ca. 28 cm. Area h.
35. Pale red surface, pale brown core. Abundant sand. Diam. 26 cm. Area cc.
36. Pale brown surface, very pale gray-brown core. Common sand. Area t.
37. Pale brown surface, pink-gray brown core. Occasional sand. Area aa.
38. Very pale brown. Abundant sand. Diam. 30 cm. Area j.
39. Very pale brown. Common sand, occasional limestone-calcite. Diam. 22 cm. Area x.
40. Pale brown surface, pale greenish-brown core. Common sand. Diam. 26 cm. Area p.
41. Very pale brown. Common fine sand. Diam. 18 cm. Area m.
42. Very pale brown surface, red-brown/gray-brown/red-brown core. Occasional sand. Area d.
43. Very pale gray-brown. Abundant sand. Diam. 30 cm.
44. Very pale brown surface, pale brown core. Common sand. Diam. 22 cm. Area dd.
45. Pale red surface, pale brown core. Abundant sand. Diam. 22 cm. Area g.
46. Red exterior, pale brown interior, brown core. Occasional sand. Diam. 28 cm. Area dd.
47. Pink exterior with red and gray painted bands, pink interior, pale brown core. Diam. 24 cm. Area dd.
48. Pale red surface, gray core. Common coarse sand, moderately brittle. Area dd.
49. Brown. Common fine sand. Diam. 20 cm. Area dd.
50. Pink slipped exterior, pale brown interior, pale gray-brown core. Occasional sand and voids. Diam. 28 cm. Area i.
51. Pink surface, pale brown core. Common sand. Diam. 30 cm. Area b.
52. Very pale brown exterior, pink interior, red/pale brown/red core. Common sand; hard. Diam. 28 cm. Area dd.

53. Pale brown slipped surface, cream core. Common chaff. Area x.
54. Brown surface, red-gray core. Common sand. Diam. 40 cm. Area dd.
55. Pale red surface, brown core. Rare coarse sand, abundant chaff. Area h.
56. Pale red-brown surface, pale brown core. Diam. ca. 32 cm. Area j.
57. Pink surface, pale brown core. Rare sand. Diam. 28 cm. Area e.
58. Pink exterior grading to pale brown interior. Common sand. Diam. 24 cm. Area dd.
59. Pink surface, pale brown core. Occasional sand. Diam. 46 cm. Area k2.
60. Pale red-brown surface, pale brown core. Fine sand. Area d.
61. Smooth, brown slipped surface, slightly polished, pale brown core. Fine sand. Area h.
62. Very smooth, pale red-brown slipped exterior, pale brown body. Common sand. Molded relief design on exterior. Diam. 26 cm. Area r.
63. Red line-burnished exterior, brown line-burnished interior, pale brown core. Common fine-medium sand. Area f.
64. Cream. Occasional sand. Diam. 18 cm. Area j.
65. Very pale brown. Abundant very fine sand. Area aa.
66. Red-brown surface and core. Common coarse sand; moderately soft. Area t.
67. Gray surface, gray-brown core. Common fine sand. Area bb.
68. Very pale brown surface, pink core. Common sand. Diam. 8 cm.

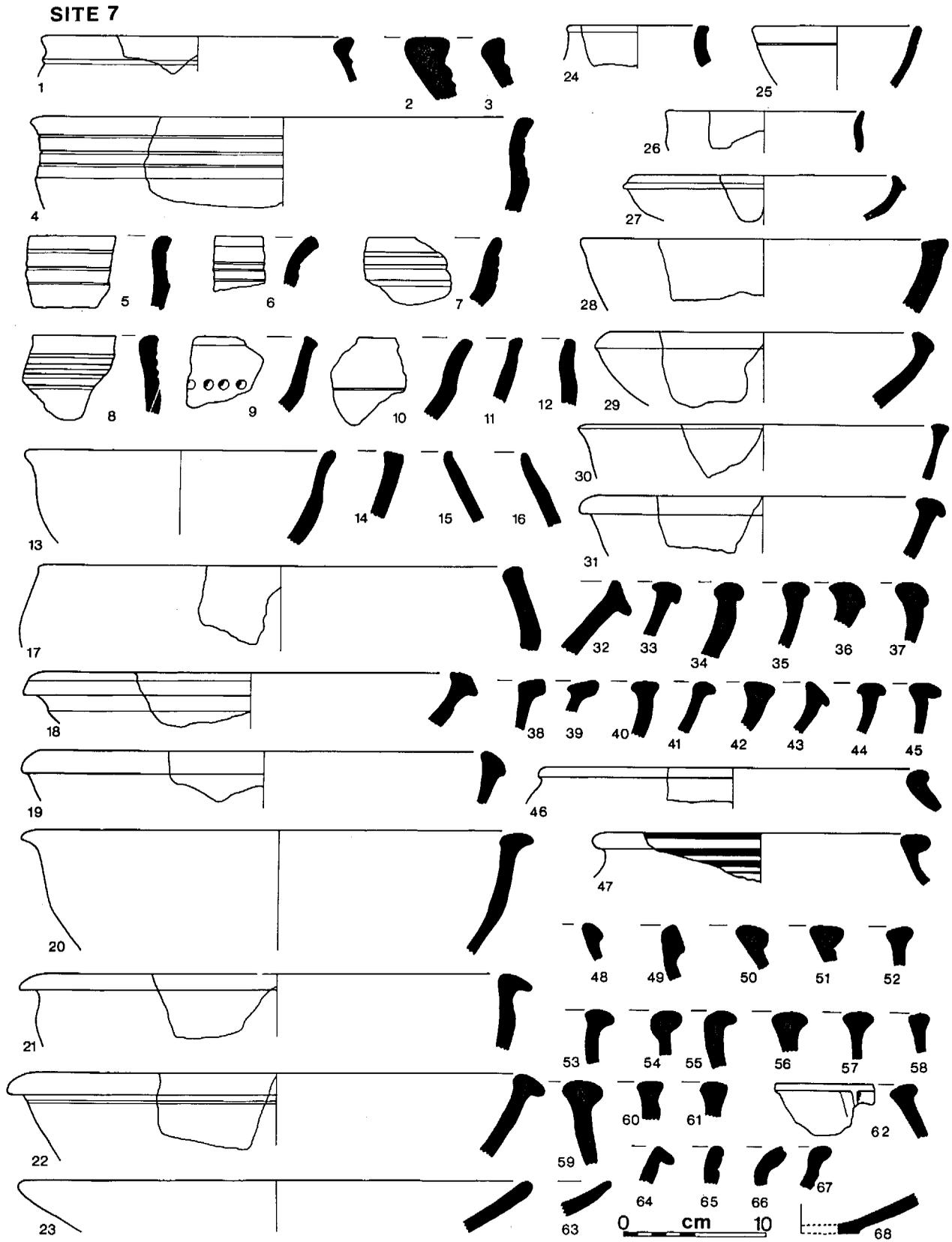


Figure B.20. EB-MB Transition and Late Second-Early First Millennia B.C. Pottery from Site 7 (Şaşkan Küçüktepe).

SITE 7 POTTERY CATALOG CONTINUED (fig. B.21)

Jars

1. Pink surface, red paint on top of rim, pale red core. Occasional sand; moderately dense. Diam. 9 cm. Area b.
2. Red-brown matte paint on exterior and top of rim. Pink. Diam. 9 cm. Area h.
3. Pale red-brown. Abundant sand. Diam. 11 cm. Area l.
4. Very pale gray-brown. Abundant fine sand. Diam. 11 cm. Area f.
5. Cream slipped exterior, pink body. Occasional sand and planar voids. Diam. 11 cm. Area t.
6. Pale brown surface, red brown core. Common fine sand. Diam. 12 cm. Area j.
7. Pale red surface, pale red, pale brown core. Common fine sand. Diam. 12 cm. Area h.
8. Pale brown surface, brown core. Occasional sand temper and planar voids. Diam. 12 cm. Area dd.
9. Pale gray surface, gray core. Common medium sand. Diam. 18 cm. Area z.
10. Very pale brown, brown paint on exterior rim, orange on top and interior of rim. Common sand. Diam. 10 cm. Area g.
11. Very pale brown surface, brown core. Common sand. Diam. 12 cm. Area f.
12. Very pale brown. Common sand. Diam. 15 cm. Area m.
13. Dull red. Occasional sand, limestone, and chaff. Diam. 10 cm.
14. Gray, traces of pale brown slip on rim. Common sand and small voids. Diam. 12 cm. Area x.
15. Pale red surface, bright red-brown core. Abundant medium-coarse sand. Area h.
16. Pale red-brown. Occasional sand. Diam. 11 cm. Area a.
17. Pale red-brown. Occasional sand. Incised cross (potter's mark?) 17 x 8 mm cut in top of rim. Diam. ca. 9 cm, slightly elongated, possibly for spout. Area n.
18. Very pale brown. Occasional fine sand; moderately dense. Area m.
19. Very pale gray-brown. Occasional sand, some limestone-calcite. Diam. 12 cm. Area b.
20. Pale red-brown. Common sand occasional planar voids. Diam. 9 cm. Area f.

Handled Vessels

21. Dark brown exterior, brown interior, pale brown-gray core. Moderately soft; occasional sand and chaff. Roughly made. Diam. 16 cm. Area dd.
22. Pale brown. Common sand. Slight inward projection of handle. Area g.
23. Pale brown. Abundant sand. Diam. 8 cm. Area k3.
24. Smooth pale brown surface, gray core. Occasional sand. Diam. 18 cm. Area i.
25. Pale gray-brown. Occasional medium-coarse sand. Diam. 8 cm. Area n.
26. Pale red. Common medium-coarse sand, some limestone-calcite. Very prominent inward projection of handle. Area x.
27. 'Cooking pot ware'; red with some blackening on exterior. Occasional white sand. Area l.

Large Storage Jars

28. Pale red-brown surface, gray core. Occasional sand. Diam. 42 cm. Area s.
29. Pale red-brown surface, gray core. Rare sand, common fine chaff; moderately soft. Diam. 40 cm. Area s.
30. Very pale brown. Occasional sand; moderately dense. Area e.
31. Pale red surface. Abundant sand. Crescent-shaped incisions in exterior rib. Diam. 38 cm. Area k3.
32. Smooth, pale brown surface; red paint on exterior, pink body. Oblique pattern impressed on exterior.
33. Pale red-brown matte surface, pale brown-dark gray core. Occasional sand and chaff. Oblique finger impressed rim. Diam. 46 cm. Area aa.

34. Pale brown matte surface, dark gray core. Occasional sand and chaff. Vertical wood baton impressed rim. Diam. ca. 48 cm. Area g.
35. Pale red-brown slipped surface, dark gray core. Common sand. Deep finger-impressions on rim. Diam. ca. 36 cm. Area d.
36. Pale red surface, pale brown core. Common sand and planar voids. Vertical slashes on cordon. Area h.
37. Pale red surface, pale brown core. Occasional sand; moderately dense. Area d.
38. Pale red-brown surface, pale brown-gray core. Common sand, occasional chaff. Vertical wood baton-impressed cordons. Area bb.
39. Pale brown surface, gray core. Common fine-medium sand. Oblique stylus impressions on raised band. Area aa.
40. Pale red surface, pale brown core. Common sand, some planar voids; moderately dense. Area d. Fabric same as 37.
41. Pale red surface, gray core. Common sand. Oblique impressions on cordon. Area ee.
42. Pale red-brown slipped surface, brown core. Common sand, occasional pebbles. Folded rim. Diam. 40 cm. Area j.
43. Thick pale red-brown slipped surface, gray core. Abundant sand, occasional pebbles to 4 mm. Diam. 40 cm. Area w.
44. Thick red-brown slipped surface, brown core. Abundant sand to 3 mm. Area x.
45. Thick red-brown surface, brown core. Common sand to 3 mm. Area i.
46. Thin pale red-brown slipped surface, brown core. Abundant sand to 5 mm. Diam. ca. 30 cm. Area j.
47. Pale brown slipped surface, pale brown and gray core. Rare sand, common fine chaff. Area r.
48. Pale red-brown surface, brown core. Abundant sand to 5 mm. Diam. ca. 40 cm. Area f.
49. Pale red-brown slipped surface. Otherwise the same as 48. Diam. ca. 32 cm. Area h.
50. As for 49. Composite base made in two sections. Diam. 15 cm.



Figure B.21. Multiperiod Pottery from Site 7 (Şaşkan Küçüktepe).

SITE 7 POTTERY AND SMALL FIND CATALOG (fig. B.22)

1. Pale to dark brown glossy slip on exterior, dark brown to pale red interior. Smooth, pale brown ware. Diam. 10 cm. Area i.
2. Brown to dark brown glossy slipped surface, very pale brown core. Fine sand. Area i.
3. Thick dark red-brown glossy slipped surface. Smooth, very pale brown core. Diam. 5 cm. Area f.
4. Dull red matte slipped surface, pale red-brown core. Fine sand; moderately smooth. Diam. 22 cm. Area ee.
5. Dark brown slipped exterior, dark red interior, cream core. Occasional sand. Diam. 22 cm. Area d.
6. Eastern Sigillata Ware: glossy red surface. (10R 4/8), pale brown to pink core (7.5YR 7/4). Moderately smooth. Diam. 12 cm. Area f.
7. Eastern Sigillata Ware: glossy red surface (10R 5/6), smooth, pale brown core. Diam. 5 cm.
8. Eastern Sigillata Ware: red glossy surface (10R 4/6), smooth, red-yellow (5YR 7/6) core. Diam. 13 cm.
9. Dark gray-brown glossy slipped surface, yellow-brown to orange, smooth paste. Diam. 20 cm.
10. Pale red smooth slipped surface, pink core. Abundant fine sand. Diam. 22 cm.
11. Red-brown slipped exterior, pale brown slipped interior and pale brown core. Smooth, occasional fine sand. Diam. 26 cm.
12. Glossy red slipped exterior (10R 5/8), pink matte interior, pale brown core. Abundant medium-coarse sand. Diam. 24 cm. Area bb.
13. Pale red discontinuous slipped surface, pink core. Smooth. Diam. 28 cm. Area q.
14. Dark red slipped surface, patchy on interior, pale brown core. Fine sand including limestone-calcite. Diam. 10 cm. Area h.
15. Dark red slipped exterior, pale red interior, pale brown core. Moderately smooth; fine sand. Diam. 12 cm. Area x.
16. Thin, pale red slip on surface, pink-pale brown core. Sand, occasional voids. Diam. 12 cm. Area c1.
17. Brown banded slipped surface, very pale brown, smooth core. Diam. ca. 40 cm. Area c1.
18. Pink. Smooth, occasional limestone-calcite. Diam. 8 cm. Area bb.
19. Pale red-brown matte slipped interior, smooth pale brown core. Diam. 8 cm. Area d.
20. 'Brittle ware': dark gray exterior, dark red interior, red core. Common white sand. Diam. 18 cm.
21. 'Brittle ware': dark gray surface, very dark gray core. Abundant fine white sand. Diam. 18 cm.
22. 'Brittle ware': black exterior, dark red-brown interior, red-brown core. Abundant fine white sand.
23. 'Brittle ware': red surface and core. Common sand. Diam. 20 cm.
24. 'Brittle ware': very dark gray surface, bright red-brown core. Abundant fine white sand. Diam. 26 cm.
25. 'Brittle ware': dark red surface, bright red-brown core. Abundant sand. Area j.
26. 'Brittle ware': as for 25. Area c.
27. 'Brittle ware': dark red-brown corrugated exterior, red interior. Common sand.
28. Dark brown painted wedges on exterior. Very pale brown, hard, common sand. Area e.
29. Dark gray spiral and red and black bands painted on exterior. Very pale brown, with fine sand temper. Area bb.
30. Very pale brown. Occasional sand. Gray-brown intersecting wedges painted on exterior. Area a.
31. Red-brown painted scrolls above carination and broad band below. Pale brown. Common sand. Area m.
32. Very pale brown. Occasional sand. Incised meander on rim. Diam. 12 cm. Area w.
33. Very pale brown. Common fine sand. Diam. 14 cm. Area m.
34. Very dark gray painted band on top of handle. Cream with common sand. Diam. 12 cm. Area m.
35. Dark red paint on top of rim. Pale brown. Occasional sand. Diam. 15 cm. Area m.
36. Red-brown matte painted band on exterior. Pale brown, sand temper. Diam. 11 cm. Area f.

37. Red slip on rim exterior and top. Pale brown with chaff temper; slightly corky. Diam. 15 cm. Area z.
 38. Cream, pink core. Occasional sand. Diam. 32 cm. Area m.
 39. Very pale brown. Common sand. Diam. 26 cm. Area x.
 40. Very pale brown. Dense fabric. Occasional sand. Area m.
 41. Very pale brown. Common sand. Diam. 32 cm. Area f.
 42. Figurine fragment of female torso. Pale brown surface, pink core. Arms folded across breast. Necklace of circular clay discs. Lightly pecked incisions in region of pubic zone. Base suggests it might have been affixed to pot. Common north Syrian type; probably Ur III or early second millennium B.C.

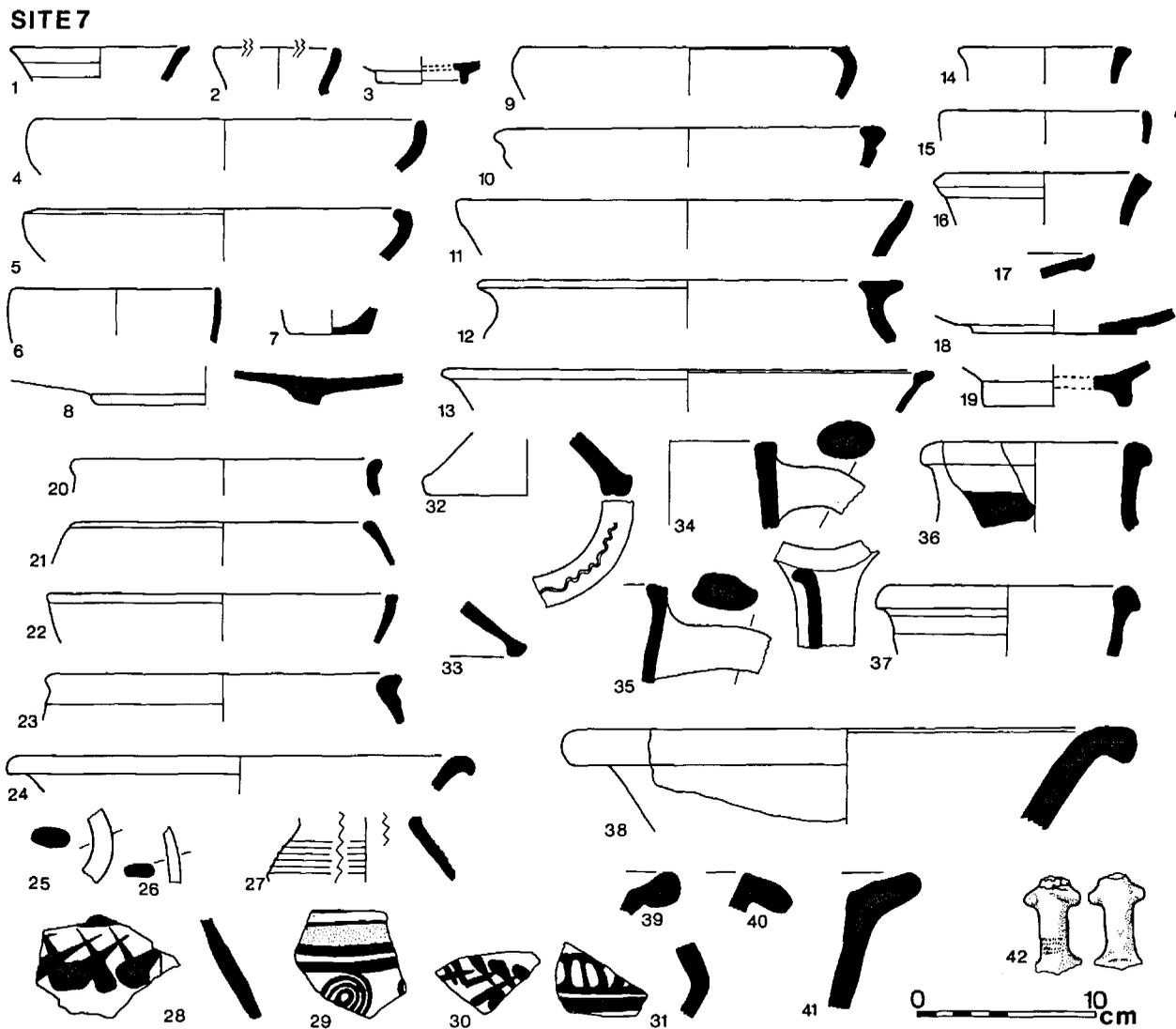


Figure B.22. Multiperiod Pottery and Small Find from Site 7(Şaşkan Küçüktepe).

SITE 8 (ŞAŞKAN BÜYÜKTEPE)

PERIODS: Early EB; Mid-Late EB; EB-MB Transition; MB; Hellenistic-Roman-Early Byzantine; Medieval (Twelfth-Thirteenth Centuries A.D.).

Early EB forms included several small fine PSW bowls, (fig. B.23: 2–5; KH II period V, bowl 5 and related forms) as well as a pair of ceramic wasters which were either cyma-recta cups or bowls similar to fig. B.23: 2–5. Other PSW forms included jars with pedestal bases (fig. B.23: 7, 8) and two bowls (fig. B.23: 9; cf. KH II period V, bowl 12a, and fig. B.23: 10; cf. KH II period V, bowl 12b). Not illustrated are two body sherds of diagonal reserved slip. A Cyma-recta cup was noted in the surface collection made by the Lower Euphrates Survey in 1977 (G. Algaze, personal communication). Cooking pot wares fig. B.23: 11–14 included the KH II period V, jar 19a (fig. B.23: 14).

Enough examples of mid-Late EB forms exist to demonstrate occupation at Site 8 contemporary with the extensive occupation at Kurban Höyük. Noteworthy forms included fine ware conical cups (fig. B.23: 15, 16), a band-painted bowl and body sherd (fig. B.23: 18, 19) and two examples of grooved rim storage jars (fig. B.23: 20, 21), a form that did however probably continue into the late third millennium. Cooking pot wares included the triangular lugged form (fig. B.23: 23).

The presence of probable MB forms at Site 8, made the definition of late EB groups difficult. In addition to the forms illustrated on figure B.23, barrel jars fig. B.24: 33–35 almost certainly belong to the EB-MB transition (KH II period III). Notwithstanding this problem, the following late third millennium forms, as defined at Kurban Höyük, were present: barrel jars (fig. B.23: 24, 25); EB incurved rim bowls (fig. B.23: 31; KH II period III, bowl 8c); the late EB form (fig. B.23: 32; cf. Tell Hadidi, Dornemann 1977, fig. 12: 7, 8 and KH II period III, bowl 4) and two holemouth cooking pots—one with a triangular lug (fig. B.23: 29 and 30).

Figure B.23: 34–47 are all third millennium forms which are less closely diagnostic of periods than those given above.

In addition to the above EB forms, a significant quantity of PSW vessels have forms which, although similar to those of Kurban Höyük period III, are different enough to suggest that they have evolved from EB forms. They probably therefore date to the Middle Bronze Age. Notably, barrel jars (fig. B.24: 21–35) provided a rich variety of forms in which the rounded rims are exceptionally common.

Among those illustrated fig. B.24: 12 resembles an MB II form from Tell Hadidi (Dornemann 1979, fig. 23: 12) and fig. B.24: 25 a barrel jar from the same site (Dornemann 1979, fig. 23: 33). Figure B.24: 41, however, provides a much closer parallel to MB forms from both Mardikh (Matthiae 1977, fig. 34) and Hadidi (Dornemann 1979, fig. 22: 22). Within the area of survey, fig. B.24: 10 resembles another example from Site 13 (fig. B.10: 38). The samples from both Sites 8 and 13 are too small to provide many identical forms; therefore, the contemporaneity of the two sites cannot be proved. Both do, however, show clear evidence of occupation during the early second millennium B.C.

Although a variety of wares and forms which could not be matched with EB-MB or Hellenistic-Roman-Medieval assemblages were collected, these were too few and varied in type to be assigned to any given period. Consequently, although the Lower Euphrates Survey suggests that significant Iron Age occupation was present at Şaşkan Büyüktepe

(Özdoğan 1977, p. 179), the evidence remains nebulous. Although some LB-Iron Age occupation may have been present, this was almost certainly less than at neighboring Site 7.

Hellenistic-Roman fine wares were sufficiently common to demonstrate occupation from around the third century B.C. Figure B.25: 1–9, which include incurved rim bowls and variants (fig. B.25: 1–4) and Eastern Sigillata forms (fig. B.25: 8, 9), can all be assigned to the Hellenistic and Roman periods. Brittle wares show strong parallels to forms from early third century ‘Parthian’ levels at ‘Ain Sinu (e. g., fig. B.25: 10 [cf. Oates 1968, fig. 23: 76] and fig. B.25: 11 (cf. Oates 1968, fig. 23: 77). Also, the painted jar rim (fig. B.25: 21) is similar but not identical to Parthian painted jars from the same site (Oates 1968, fig. 24).

Evidence of occupation continues into the succeeding late Roman-Byzantine period as evidenced by amphorae with grooved or ledged rims (fig. B.25: 20, 27), scroll painted carinations (fig. B.25: 35, 36, and 38) and a rounded base (fig. B.25: 28). In addition, three bowls (fig. B.25: 29–31) resemble those collected from other late Roman-Byzantine sites in the area (cf. Site 3, fig. B.16: 1 and Site 32, fig. B.16: 12).

Parallels for the Medieval assemblage (fig. B.25: 39–53) were mainly provided by the excavation of twelfth-thirteenth century A.D. levels at Gritille Höyük (S. Redford and G. Stein, personal communication). In addition to these rather local wares, the small frit ware dish (fig. B.25: 44) appears to be a Raqqa ware or a similar vessel of the twelfth-thirteenth centuries A.D.

Regarding the spatial distribution of ceramic types, EB, MB, and Hellenistic ceramics were mainly restricted to Büyüktepe, those of the Bronze Age being most common along the eroded northern cut. Roman-early Byzantine pottery was found both on Büyüktepe and over the lower site, but only by the fourth-sixth centuries A.D. had occupation spread across the entire lower settlement. Finally, medieval wares, although most common on top of Büyüktepe, were also found, in rather lower densities on the lower site as well (*Appendix A*, fig. A.5).

SITE 8 POTTERY CATALOGS (figs. B.23–25)

SITE 8 POTTERY CATALOG (fig. B.23)

Early EB

1. Very pale brown PSW. Diam. 10 cm. Area w.
2. Very pale brown PSW. Diam. 10 cm. Area w.
3. Cream, smooth PSW. Diam. 12 cm. Area w.
4. Very pale brown PSW. Diam. 14 cm. Area w.
5. Very pale brown PSW. Diam. 11 cm.
6. Bowls, fused in kiln. Green, fine PSW; vesicular. Area n.
7. Cream PSW.
8. Cream, smooth PSW. Diam. 7 cm. Area w.
9. Pink surface, cream core, PSW. Diam. 22 cm.
10. Cream, smooth PSW.
11. Cooking Pot Ware (CP), red-brown surface, gray-brown core. Abundant sand. Diam. 20 cm.
12. CP, pale brown smooth exterior, pale brown interior, dark gray core. Sand and chaff. Area u.
13. CP, pale red-brown surface, red-brown-gray core. Sand. Diam. 26 cm. Area v.
14. CP, pale brown surface, dark gray core. Sand and chaff. Diam. 34 cm.

Mid-Late EB

15. Very pale brown, smooth PSW. Diam. 8 cm. Area v.
16. Pale brown exterior, red interior and core, PSW. Diam. 14 cm. Area o.
17. Pale brown PSW. Diam. ca. 4 cm. Area v.
18. Band-painted ware: dark gray painted bands on exterior, greenish-gray, smooth PSW. Diam. 21 cm. Area x.
19. Band-painted ware: brown painted bands on pale brown-gray brown PSW. Area n.
20. Pale greenish-brown PSW. Diam. 27 cm. Area n.
21. Very pale brown PSW. Diam. ca. 32 cm.
22. CP, black-burnished exterior, pale brown interior, pale brown-black core. Common sand.
23. CP, black-pale brown smooth exterior, red-brown interior, gray core. Common sand. Diam. ca. 20 cm. Area v.

EB-MB Transition

24. Pink surface, pale brown core, PSW. Diam. 56 cm.
25. Pale greenish-brown PSW. Diam. 20 cm. Area r.
26. Pale greenish-brown PSW. Oblique slashes on ribs. Exterior diam. 48 cm. Area w.
27. Pale brown surface, gray core, PSW. Diam. 18 cm. Area r.
28. Very pale brown PSW. Abundant fine limestone-calcite sand. Diam. 14 cm. Area n.
29. CP, black and gray burnished exterior, pale brown interior, dark gray core. Abundant sand. Diam. 14 cm. Area v.
30. CP, red brown; abundant sand. Lug broken off. Diam. 30 cm. Area n.
31. Pink brown PSW. Diam. 26 cm. Area r.
32. Pink PSW. Common limestone-calcite sand. Diam. 18 cm. Area n.
33. Very pale brown PSW. Diam. 36 cm.

Other Third Millennium Forms

34. Pale brown PSW. Diam. 14 cm. Area n.
35. Pale brown PSW. Diam. 17 cm. Area n.
36. Very pale brown PSW.
37. Off-white surface, pale gray-brown core, PSW. Abundant sand. Diam. 28 cm.
38. Pale brown surface, gray-brown core, PSW. Diam. 29 cm.
39. Pale brown PSW. Diam. 36 cm. Area n.
40. Very pale brown PSW. Diam. 20 cm.
41. Pale brown exterior and core, gray interior. Common sand. Diam. 19 cm. Area n.
42. Red exterior, pale brown interior, gray-brown-red core, PSW. Diam. 4.50 cm. Area n.
43. Pale gray surface, dark gray core, PSW. Diam. 10 cm. Area n.
44. Pale brown exterior and core, pale red interior, PSW. Diam. 11 cm. Area n.
45. Pale gray surface, dark gray core, PSW. Diam. 11 cm. Area n.
46. Pink surface, pale brown core. Diam. 11 cm. Area n.
47. Very pale brown PSW. Diam. 22 cm.

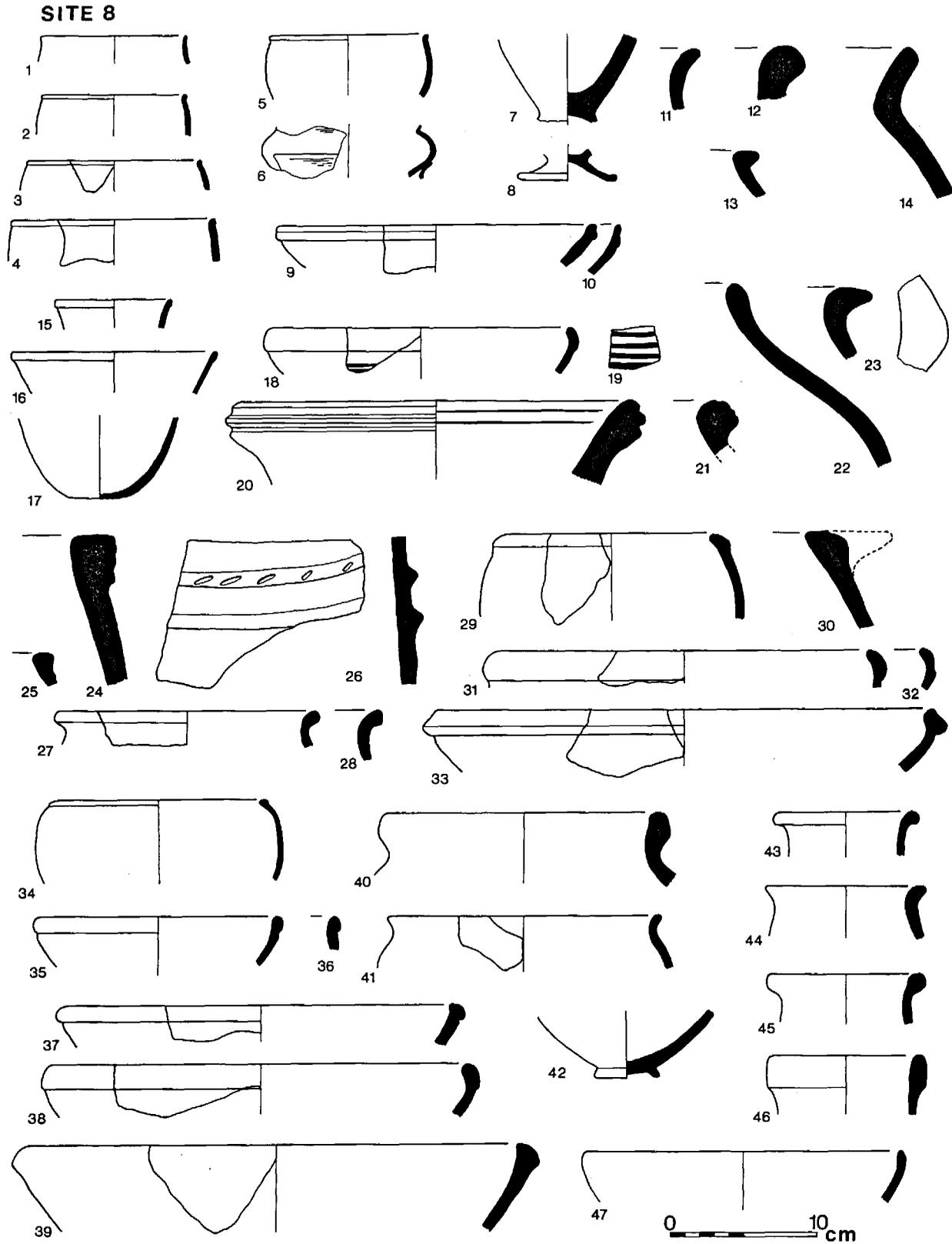


Figure B.23. EB, EB-MB Transition, and other Third Millennium B.C. Pottery from Site 8 (Şaşkan Büyüktepe).

SITE 8 POTTERY CATALOG CONTINUED (fig. B.24)

EB-MB Transition and MB (all variants of PSW)

1. Pink surface and pink-gray core. Abundant sand. Diam. 10.50 cm. Area q.
2. Pink. Diam. 16 cm. Area q.
3. Pale pink exterior, very pale brown interior, pale red core. Diam. 12 cm.
4. Pink surface, pale brown core. Diam. 15 cm. Area n.
5. Pale greenish brown surface, pale brown core. Diam. 16 cm. Area n.
6. Pink. Diam. 15 cm. Area v.
7. Very pale brown. Diam. 17 cm. Area n.
8. Very pale brown surface, gray-brown core. Diam. 24 cm. Area r.
9. Smooth, pink surface, pale red core; moderately dense. Diam. 26 cm.
10. Very pale green slipped surface, pale brown core. Diam. 38 cm.
11. Very pale greenish-brown. Abundant fine sand. Diam. ca. 64 cm. Area u.
12. Pale greenish-brown. Abundant sand. Diam. 40 cm. Area v.
13. Pale greenish-brown. Diam. 33 cm. Area v.
14. Pale greenish-brown exterior, pinkish-brown interior, pale brown core. Impressed pattern possibly from cereal grains. Area v.
15. Pale brown. Cordons decorated with oblique grooves, body with rectilinear slashes. Area n.
16. Pale green interior, pale brown-pale gray core. Comb incised exterior. Area n.
17. Pale brown surface, pale red core. Comb incised exterior. Area s.
18. Pale red. Abundant fine sand. Comb incised exterior. Area s.
19. Very pale greenish-brown surface, pale brown core. Diam. 13 cm. Area n.
20. Very pale brown. Diam. 8 cm. Area o.
21. Pale red exterior, pale red interior. Diam. 22 cm. Area x.
22. Very pale brown surface, pale red-pale brown core. Diam. 24 cm. Area h.
23. Pale greenish-brown slipped exterior, pale brown core. Diam. 26 cm. Area n.
24. Pale greenish-brown. Diam. ca. 40 cm. Area r.
25. Very pale green. Diam. 29 cm. Area n.
26. Pale greenish-brown surface, pale brown core. Diam. 32 cm.
27. Pale greenish-brown. Diam. 35 cm.
28. Pink surface, red-brown core. Diam. 44 cm. Area n.
29. Pale greenish-brown. Diam. 24 cm. Area x.
30. Pale greenish-brown surface, pale brown core. Abundant sand. Diam. 36 cm. Area n.
31. Pale brown. Area n.
32. Pale greenish-brown surface, pale green-brown core. Diam. 30 cm. Area n.
33. Pale green. Diam. 24 cm. Area n.
34. Pale green. Diam. 20 cm. Area n.
35. Very pale brown. Diam. 26 cm. Area n.
36. Pale brown. Diam. 32 cm.
37. Pale brown-pink surface, pale brown core. Diam. ca. 42 cm. Area x.
38. Pale green. Diam. 28 cm. Area n.
39. Very pale green surface, gray core. Diam. 38 cm. Area k.
40. Very pale brown. Diam. 38 cm. Area w.
41. Pale greenish-brown slipped surface, pale brown core. Diam. 33 cm. Area n.

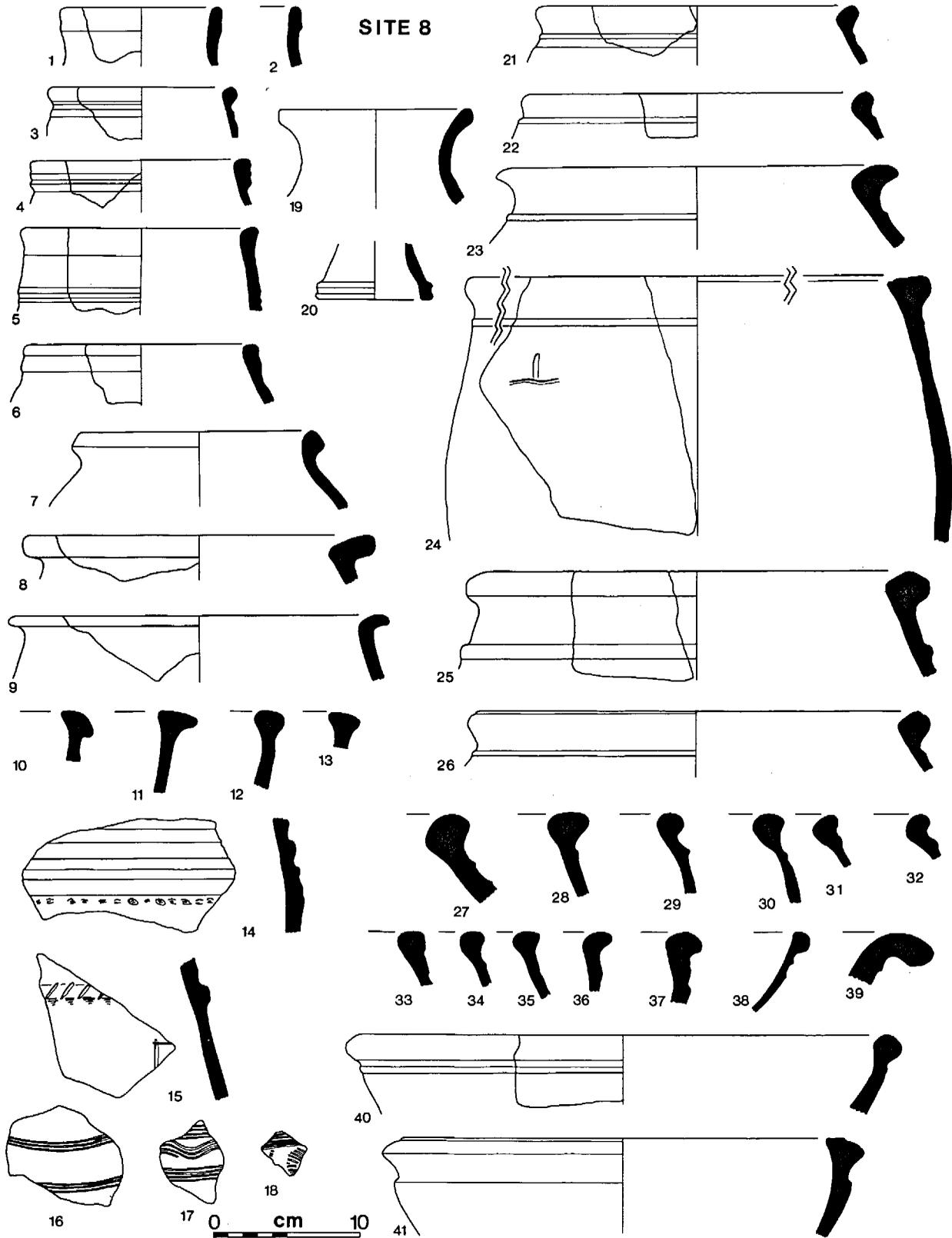


Figure B.24. EB-MB Transition and MB Pottery from Site 8 (Şaşkan Büyüktepe).

SITE 8 POTTERY CATALOG CONTINUED (fig. B.25)

Hellenistic and Roman Fine Wares

1. Very dark gray slipped exterior, red slipped interior, smooth pink core. Diam. 18 cm. Area u.
2. Red slipped surface, red-brown moderately smooth core. Diam. 18 cm.
3. Dark red slipped exterior, interior pink and dark red; pink core. Occasional sand. Diam. 14 cm.
4. Dark brown slipped exterior, dark red slipped interior, pink moderately smooth core.
5. Dark red matte surface, pink, smooth core.
6. Dark red slipped surface, pale red-brown core. Moderately fine. Diam. 9 cm.
7. Pale brown with red paint on exterior and rim top. Fine sand. Diam. 16 cm. Area u.
8. Eastern Sigillata Ware: Red (10R 4/8) glossy slipped surface, reddish-yellow, very smooth paste.
9. Eastern Sigillata Ware: Red (10R 5/8) glossy slipped surface, pink very smooth core. Diam. 12 cm.

Brittle Wares: Roman, Late Roman, and Early Byzantine

10. Dark red surface, moderately soft red-brown core. Common sand. Diam. ca. 18 cm. Area q.
11. Dark gray exterior, dark red interior, dark gray-red core. Hard and brittle with common fine, white sand. Diam. ca. 20 cm. Area j.
12. Red surface, gray core. Sand. Diam. 18 cm. Area l.
13. Dark gray surface, red-brown core. Hard; common white sand. Diam. 20 cm. Area j.
14. Smooth red surface, red-brown core. Common sand. Diam. ca. 23 cm. Area f.
15. Dark red exterior, red interior, red-brown core. Common fine white sand. Diam. 14 cm. Area j.
16. Red surface, gray and brown core. Common sand. Area t.
17. Dark red surface, red-brown core. Common fine white sand. Area m.
18. Grayish-red exterior, red interior, red-brown core. Common fine white sand. Diam. 19 cm. Area j.

Other Roman-Early Byzantine Wares

19. Very pale brown exterior, pink interior and core. Sand. Diam. 7 cm. Area k.
20. Pale brown-pink. Sand. Diam. 12 cm. Area u.
21. Cream with very dark brown paint on exterior rim, pale red on interior. Diam. 10 cm. Area l.
22. Very pale brown-pink core. Occasional sand. Diam. 10 cm. Area j.
23. Pink, vestigial red paint on rim. Smooth, occasional sand. Diam. 11 cm. Area x.
24. Cream surface, pink core. Occasional sand. Diam. 10 cm. Area l.
25. Lid or dish. Very pale brown. Sand. Diam. 13 cm. Area j.
26. Cream, some dark gray paint on exterior. Diam. 13 cm. Area l.
27. As 26. Diam. 12 cm. Area k.
28. Rounded amphora base. Very pale brown. Area s.
29. Pale brown surface, pink core. Occasional fine sand. Diam. 14 cm. Area k.
30. Very pale green. Occasional sand. Pie-crust rim. Diam. 15 cm. Area j.
31. Pink surface, very pale brown core. Occasional sand. Pie-crust rim. Diam. 16 cm. Area j.
32. Very pale brown. Common sand. Diam. 32 cm. Area x.
33. As 32. Diam. 27 cm. Area j.
34. Very pale brown surface, pale brown core. Diam. 38 cm. Area j.
35. Very pale brown, dark brown painted scroll above carination. Common sand. Area j.
36. Pale brown exterior, pink interior and core. Dark red-brown scroll painted above carination. Area k.
37. Pale pink surface, pale brown core, red-brown concentric circles painted on exterior. Sand. Area k.
38. Very pale brown, dark gray painted loops on exterior. Sand. Area j.

Medieval Wares

39. Pink surface, red paint on exterior, pale red core. Common sand; moderately soft. Diam. 13 cm. Area x.
40. Pink surface with red paint. Pale brown, moderately soft core. Abundant sand. Diam. 13 cm. Area v.
41. Red-brown paint on pale brown body. Compact, occasional sand. Indented ridge below rim. Diam. 14 cm. Area s.
42. CP; dark red surface, black core. Common sand. Diam. 19 cm. Area u.
43. CP; dark red surface; red core. Abundant sand. Diam. 15 cm. Area j.
44. Light greenish-blue glazed surface, thicker on interior where cut by dark glaze-filled incisions. Hard white frit-like body. Diam. 16 cm.
45. Light and dark green glazed exterior. Pink moderately smooth core. Area m.
46. Dark and olive green glazed surface. Pale gray, smooth core. Area d.
47. Iridescent blue-green glazed surface, yellow body. Occasional sand temper.
48. Bright green glazed exterior, dark green interior, pink moderately smooth core. Area l.
49. Light green glazed surface. Pink, moderately smooth core. Area m.
50. CP; dark gray surface, black core. Abundant sand. Area j.
51. CP; dark red surface, gray-brown core. Moderately soft, abundant sand. Area h.
52. Thick dark brown glazed surface, dark brown body. Abundant white sand. Area v.
53. Pale red surface, orange-pale brown core. Moderately soft. Abundant sand. Area q.

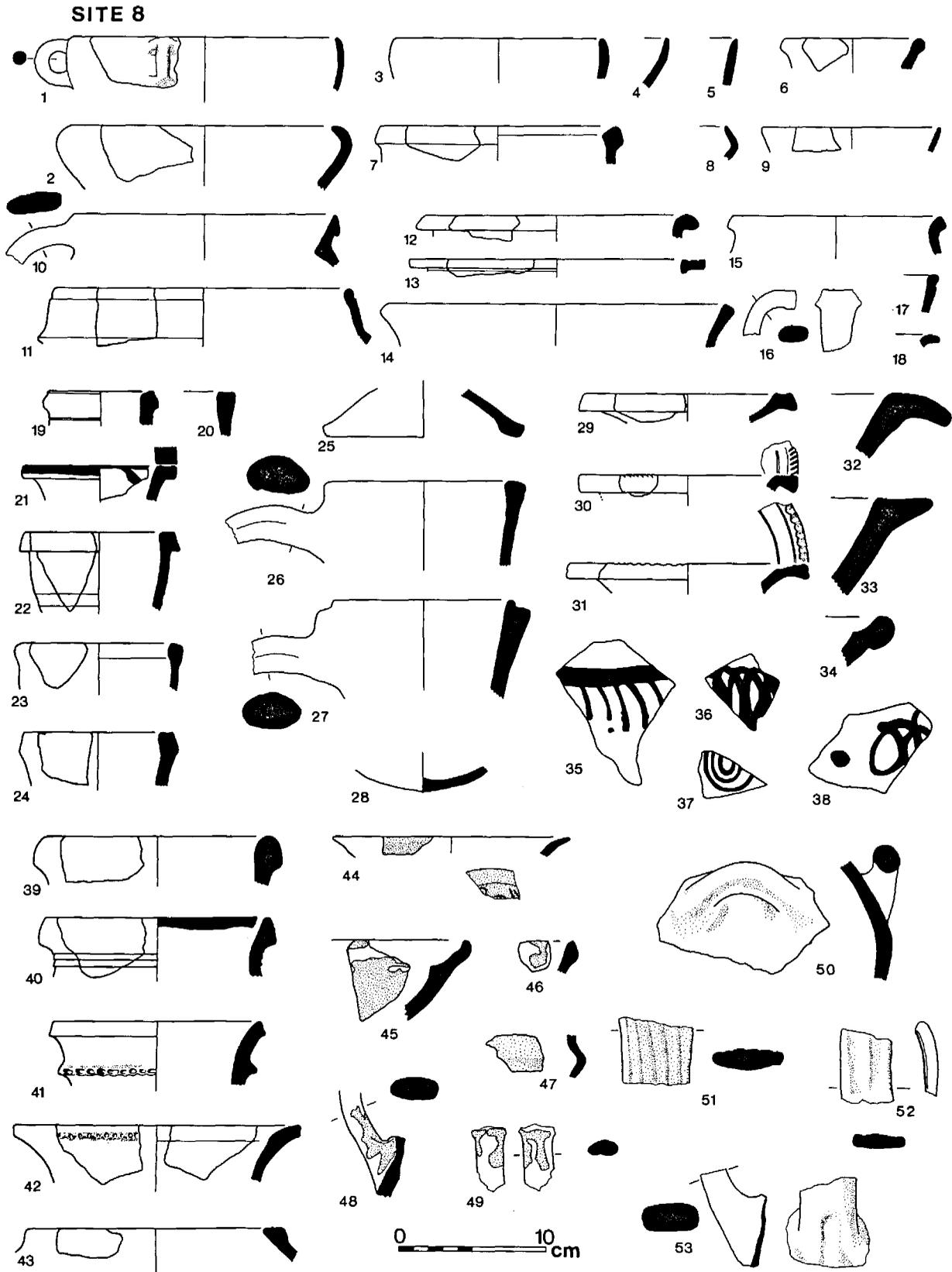


Figure B.25. Hellenistic, Roman, Late Roman-Early Byzantine, and Medieval Pottery from Site 8 (Şaşkan Büyüktepe).

SITE 39 (BEYAZ KAYA MEVKII)

PERIODS: Middle Chalcolithic; Late Chalcolithic A (Uruk-type wares); Early EB.

Of the illustrated sherds, fig. B.26: 1–8 were decorated with matte brown-dark brown paint on a usually pale brown sand tempered body. They resemble sherds from Site 11 and 25 (above, pp. 206–9, fig. B.4) which have been classified as Ubaid-like wares. The range of decorative designs is small but includes the unusual wavy line in negative (fig. B.26: 3), as well as a more common design (fig. B.26: 8) which occurs on Ubaid-like wares of 'Amuq phase E (Braidwood and Braidwood 1960, fig. 151). In addition, several unpainted wares (fig. B.26: 9, 42–44, and 47) may belong to the Middle Chalcolithic occupation.

Four characteristic Uruk-type forms are illustrated: a beveled rim bowl (fig. B.26: 10), an undercut rim jar (fig. B.26: 11), and trumpet and drooping spouts (fig. B.26: 12; cf. KH II period VI, spout 2; fig. B.26: 13; cf. KH II period VI, spout 1). The band rimmed bowl (fig. B.26: 27) may belong to the Uruk period or to the Uruk-early EB transitional phase.

Other forms which appear to belong to the Uruk-early EB transitional phase include the small jar (fig. B.26: 17; KH II period V, bowl 5a) as well as an example of period V bowl 14a (not illustrated).

Occupation continued into the early EB, diagnostic types including a cyma-recta cup (fig. B.26: 20) and 7 ring bases of the same vessel type. The small ring base (fig. B.26: 21; cf. KH II period V, bowl 4a) resembles those of certain, possibly later, cyma-recta cups (KH II, pl. 43: J). Other early EB forms include bowls fig. B.26: 24 (cf. KH II period V, bowl 6b), fig. B.26: 25, 26, and 28 (cf. KH II period V, bowl 11). Also present were three cooking pot wares of the same period. Although many of the jars (fig. B.26: 29–37) may belong to the early EB, the form has an extended time range. No ceramics later than early EB were collected from Site 39.

SITE 39 POTTERY CATALOG (fig. B.26: 1–47)

Early Chalcolithic Wares

1. Very dark brown paint on exterior, very pale brown body. Common sand and planar voids. Diam. 12 cm.
2. Dark brown paint on exterior and interior rim, cream body. Common sand and occasional planar voids. Diam. 24 cm.
3. Grayish-brown painted exterior, with pattern formed by removal of paint. Pale gray body. Common fine sand. Diam. 18 cm.
4. Dark brown paint on exterior. Very pale greenish-brown body. Abundant sand.
5. Dark brown paint on exterior. Very pale brown body. Abundant fine sand. Diam. 18 cm.
6. Dark brown paint on exterior, very pale brown body. Common sand.
7. Pale brown painted surface, cream body; smooth, occasional voids.
8. Dark brown paint on exterior, very pale brown body. Moderately smooth.
9. Pale grayish-brown. Abundant sand.

Uruk Wares

10. Pale red. Occasional sand, common chaff. Diam. 16 cm.
11. Pale gray-brown, PSW. Common sand. Diam. 20 cm.

12. Pink PSW. Common sand.
13. Very pale brown, pink core; PSW. Fine sand.

Predominantly Early EB Wares

14. Pale yellow-brown, fine PSW. Common fine pores. Diam. 14 cm.
15. Cream surface, very pale brown core; PSW. Abundant sand. Diam. 29 cm.
16. Cream, fine PSW. Common fine sand. Diam. 14 cm.
17. Cream, fine PSW.
18. Cream, fine PSW. Fine sand. Diam. 18 cm.
19. Pale greenish brown, smooth, fine PSW.
20. Very pale greenish brown, smooth, fine PSW.
21. Very pale green, smooth, fine PSW. Occasional small voids. Diam. 3 cm.
22. Very pale greenish brown, PSW. Fine sand. Diam. 6 cm.
23. Very pale brown, PSW. Fine sand. Diam. 9 cm.
24. Pale green, fine PSW. Smooth, rare voids. Diam. 13 cm.
25. Pale brown PSW. Abundant sand. Diam. 29 cm.
26. Pale gray-brown, PSW. Abundant fine sand. Diam. 18 cm.
27. Pale brown PSW. Common sand and planar voids.
28. Pale brown, PSW. Occasional sand. Diam. 22 cm.
29. Very pale greenish brown, PSW. Common sand. Diam. 9 cm.
30. Very pale brown, PSW. Diam. 17.50 cm.
31. Very pale brown, PSW. Sand. Diam. 22 cm.
32. Pale greenish brown surface, gray core; PSW. Fine sand.
33. Pale greenish gray surface, gray core. Abundant sand. Diam. 15 cm.
34. Very pale brown, PSW. Sand. Diam. 20 cm.
35. Pale greenish-brown, PSW. Abundant fine sand. Diam. 17 cm.
36. Pale brown, PSW. Abundant fine sand. Diam. 17 cm.
37. Very pale greenish-brown, PSW. Common sand. Diam. 13 cm.
38. Pale brown PSW. Abundant fine sand. Diam. 11 cm.
39. CP; pale brown surface, black core. Common sand. Diam. 23 cm.
40. CP; pale red-brown surface, gray-brown core. Sand and chaff. Diam. 24 cm.
41. CP; dark gray exterior, pale red-brown interior, dark gray core. Common sand.

Other Chalcolithic and Early EB Wares

42. Pale red-brown surface, black core. Hand made, abundant chaff.
43. Very pale brown, pink core. Smooth, occasional voids.
44. Cream. Common sand.
45. Very pale white sand. Diam. 22 cm.
46. Pale brown exterior to very pale brown interior. Abundant sand. Diam. 20 cm.
47. Very pale greenish-brown. Sand.

SITES 18 AND 44: EARLY AND MIDDLE CHALCOLITHIC (PAINTED WARES)

Figure B.26: 48–67 were collected from an open section exposed by villagers in the base of Site 18 (Yaslica Höyük). The mixed range of sherds include those with Halaf motifs (fig. B.26: 49) and very fine smooth clay bodies (fig. B.26: 49, 52, and 60). In the catalog, unless stated otherwise, the paint was moderately lustrous.

Other vessels (fig. B.26: 55, and 61–67) were decorated with a dark brown matte paint applied to a sand tempered body. Motifs included those common to 'Amuq E Ubaid-like wares (fig. B.26: 65–67; cf. Braidwood and Braidwood 1960, fig. 151). Many of the wares, however, have decorations which are common to Halaf, Ubaid-like, and various local painted wares, for example, the herring bone design of fig. B.26: 51 and the double meander motif of fig. B.26: 50, 57, and 68 (interior). Therefore unlike the assemblages from Site 20 (Halaf type) and Sites 11 and 25 (Ubaid type) the ceramics from Sites 18 and 44 appear to belong to an extended chronological range covering the Early-Middle Chalcolithic.

SITE 18 POTTERY CATALOG (fig. B.26: 48–67)

Local Halaf, Ubaid, and Related Painted Wares (Paint is on the exterior surface of vessels unless otherwise indicated.)

48. Black paint on pale brown, dense body. Occasional grit.
49. Red paint on pink body. Dense, occasional sand.
50. Dark gray-brown paint on pale brown, dense body. Fine sand.
51. Very dark gray-brown paint on pale brown; gray-brown core. Dense; abundant fine sand.
52. Dark red-brown paint on pale brown body with pale red-brown interior. Dense, smooth, and fine.
53. Red paint on pale brown, moderately dense and smooth body. Rather roughly painted. Diam. 14 cm.
54. Very dark gray paint on pale brown body; pale gray-brown core. Moderately dense; some fine sand.
55. Very dark gray matte paint on pale brown body with dull pink interior. Dense, common sand.
56. Very dark gray-brown paint on pale gray-brown body. Dense; fine sand.
57. Red paint on pink. Dense; occasional sand.
58. Dark gray paint on pink exterior, pale brown body. Dense, occasional sand. Diam. 16 cm.
59. Dark gray paint on pale brown exterior, cream body. Dense, occasional sand.
60. Very dark red-brown paint on red-brown wash; cream body. Very dense, extremely smooth.
61. Very dark gray-brown matte paint on very pale brown body. Dense; common sand.
62. Dark gray-brown paint on very pale brown body. Dense; common sand.
63. Very dark brown matte paint on pink-pale brown body. Common sand. Diam. 12 cm.
64. Black matte paint on pale gray-brown body. Hard; common sand. Diam. 17 cm.
65. Very dark gray matte paint on very pale brown body. Hard, abundant sand. Diam. 15 cm.
66. Dark reddish-black matte paint on pink body. Hard; common sand. Diam. 18 cm.
67. Dark gray matte paint on cream body. Occasional-common sand.

SITE 44 POTTERY CATALOG (fig. B.26: 68–69)

Halaf-like wares

68. Red-brown and red matte paint on cream slip on pale brown body. Smooth, dense; occasional fine sand. Diam. 15 cm. Area a.
69. Dark gray-brown matte paint on cream body. Smooth, dense, rare small voids. Diam. 8 cm. Area a.



Figure B.26. Chalcolithic, Uruk Period, and Early EB Pottery from Site 39 (Beyaz Kaya Mevkii); Chalcolithic Pottery from Sites 18 (Yaslica Höyük) and 44 (Bozova Höyük).

ADDITIONAL CERAMIC GROUPS FROM MULTIPERIOD SITES 17, 18, 29, 43, AND 44

SITE 43: TITRIŞ HÖYÜK (fig. B.27: 1–23)

Those illustrated are just a small selection of the extensive range of pottery types of the mid-third millennium on this complex site. Fine wares included small conical cups (fig. B.27: 1, 2) and band painted bowls (fig. B.27: 4–7). Among these were two vessels in metallic ware (fig. B.27: 1, 4).

Large PSW vessels included those with hole mouths and grooved rims (fig. B.27: 13, 14, and 15; KH II period IV, jar 4a or variants thereof) and the ubiquitous grooved rim jars (fig. B.27: 16–21; variants of KH II period IV, jars 18a or 18b).

SITE 17: ARIKÖK HÖYÜK, LATE EB POTTERY CUP (fig. B.27: 24)

Although the two figurines from Site 43 (fig. B.27: 22–23) are undated, the small vessel from Site 17 is a good example of a Hama J cup, a common late EB form on sites in Syria (Fugman 1958 fig. 62; also KH II period II, bowl 2).

SITES 29, 43, AND 44: POSSIBLE MB FORMS (fig. B.27: 25–33)

The sherds illustrated came from three large multiperiod mounds: Site 29 (five examples), Site 43 (five examples), and Site 44 (one example). All were manufactured in PSW and showed some similarities to MB forms from northern Syrian sites. Although parallels are not exact, a jar rim (fig. B.27: 26) resembles a MB form from Tell Hadidi (Dornemann 1979, fig. 22: 8); fig. B.27: 27 and 28, a barrel jar from the same site (Dornemann 1979, fig. 22: 34), and fig. B.27: 30–32 are similar to a holemouth form, again from Hadidi (Dornemann 1979, fig. 22: 5). Other barrel jars (fig. B.27: 34, 35) appear to be evolved forms not present at Kurban Höyük but are reminiscent of those from MB assemblages at Sites 13 and 8 (above, pp. 225 and 271, respectively).

SITE 18: ABBASID VESSELS (fig. B.27: 36–42)

This small assemblage supplements the group collected from Site 6. In addition to the green-yellow-white glazed bowls, fig. B.27: 36–41 (no. 39: KH II, pl. 137: E), one example of an Abbasid band rim jar (not illustrated) was collected (cf. KH II, pl. 141: E). Another distinctive Abbasid form is the slender cream ware handle (fig. B.27: 42), of a similar type to that from Site 6 (fig. B.17: 22).

MISCELLANEOUS POTTERY AND SMALL FIND CATALOG

Site 43: Mid-Late EB Pottery (fig. B.27: 1–21)

1. Metallic ware: dull red surface, red-brown core. Hard, smooth. Diam. 10 cm.
2. Band painted ware: red painted bands on pink exterior, pink interior, red-brown core. Very hard, smooth; sand. Diam. 11 cm.
3. Very pale brown surface, gray-brown core; PSW. Diam. 10 cm.
4. Metallic ware: gray exterior, red-gray core, gray-brown and red painted bands on interior. Very hard; sand. Diam. 15 cm.
5. Band painted ware: dull red paint on exterior, cream slipped surface, pale brown core. PSW, hard. Diam 17 cm.

6. Band painted ware: red and red-brown paint on red-brown body. Very hard; sand. Painting slightly smeared. Diam. 18 cm.
7. Band painted ware: red brown painted bands on gray body. Dense and smooth. Diam. 3 cm.
8. Metallic ware: gray surface, dark gray core. Dense, smooth. Diam. 8 cm.
9. Pale brown exterior. Red-brown interior and core. PSW.
10. Cream surface, pink core. PSW. Diam. 24 cm.
11. Pale brown, PSW. Diam. 22 cm.
12. Very pale green surface, olive green core. PSW. Diam. 22 cm.
13. Gray surface, dark gray core. PSW. Diam. 19 cm.
14. Yellowish-brown slip on exterior, pink interior, red-brown core. PSW.
15. Pale red-brown surface, pale brown core. PSW. Diam. 27 cm.
16. Very pale brown, PSW. Diam. 26 cm.
17. Very pale brown, PSW. Diam. 23 cm.
18. Very pale brown exterior and core, red-brown interior. PSW.
19. Pale greenish-brown exterior, pale brown interior and core. PSW. Diam. 29 cm.
20. Very pale green surface, very pale brown core. PSW. Diam. 45 cm.
21. Very pale brown surface, pink core. PSW. Diam. 37 cm.

Sites 43 and 44: Figurines (fig. B.27: 22, 23)

22. Fired clay fragment of animal figurine. Vestigial dark paint; broken ears, pierced eyes. Height: 47 mm. Site 44.
23. Animal head in pink clay with gray core; red painted surface. Hollowed as if part of vessel. Slit mouth, deeply pierced nostrils. Height: 75 mm. Site 43.

Site 17: Late EB Hama J Cup (fig. B.27: 24)

24. Pink, fine and smooth; PSW. Diam. 8.50 cm. Area b.

Sites 29, 43, and 44: Selected Possible MB Forms (fig. B.27: 25–35)

25. Site 29d: Pale red surface, pale brown core. Abundant coarse sand. Diam. 10 cm.
26. Site 29e: Pale brown exterior, pink interior, red core. Abundant fine sand. Diam. 12 cm.
27. Site 43: Very pale green surface, gray core. PSW. Diam. 16 cm.
28. Site 43: Very pale brown, PSW. Diam. 18 cm.
29. Site 43: Very pale green, PSW. Diam. 26 cm.
30. Site 29a: Pale brown exterior, red interior and core. PSW. Diam. 32 cm.
31. Site 43: Red exterior, gray-brown interior, pale brown core. PSW. Diam. 26 cm.
32. Site 29b: Gray surface, very dark green core. PSW, abundant sand. Diam. 36 cm.
33. Site 29a: Pink surface, yellow-brown core. PSW. Diam. 34 cm.
34. Site 44a: Very pale green exterior, pale gray-brown interior and core. PSW. Diam. 32 cm.
35. Site 43: Very pale brown, PSW. Diam. 50 cm.

Site 18: Ceramics of the Ninth-Tenth Centuries A.D. (fig. B.27: 36–42)

36. Exterior: green glaze dripped over yellow and brown glaze. Interior: dark brown over yellow and green glaze. Red-brown smooth core, fine sand. Diam. 23 cm.
37. White and pale green, very thin glaze dripped over rim exterior. Light and dark green iridescent glazed interior. Red-brown, smooth core. Diam. 11 cm.
38. Dribbled green glaze on exterior, white and green glazed interior. Pale red-brown, moderately smooth core. Some fine sand.
39. Pale yellow and pale green glazed interior. Pale red body. Occasional sand. Diam. 15 cm.

- 40. Interior: yellow glaze with green band fringed by dark brown. Pale red, moderately smooth body. Common fine sand.
- 41. Interior yellow glaze with green band. Gray-brown body. Moderately smooth, abundant fine sand.
- 42. Pale yellow, smooth 'cream ware'. Occasional sand.

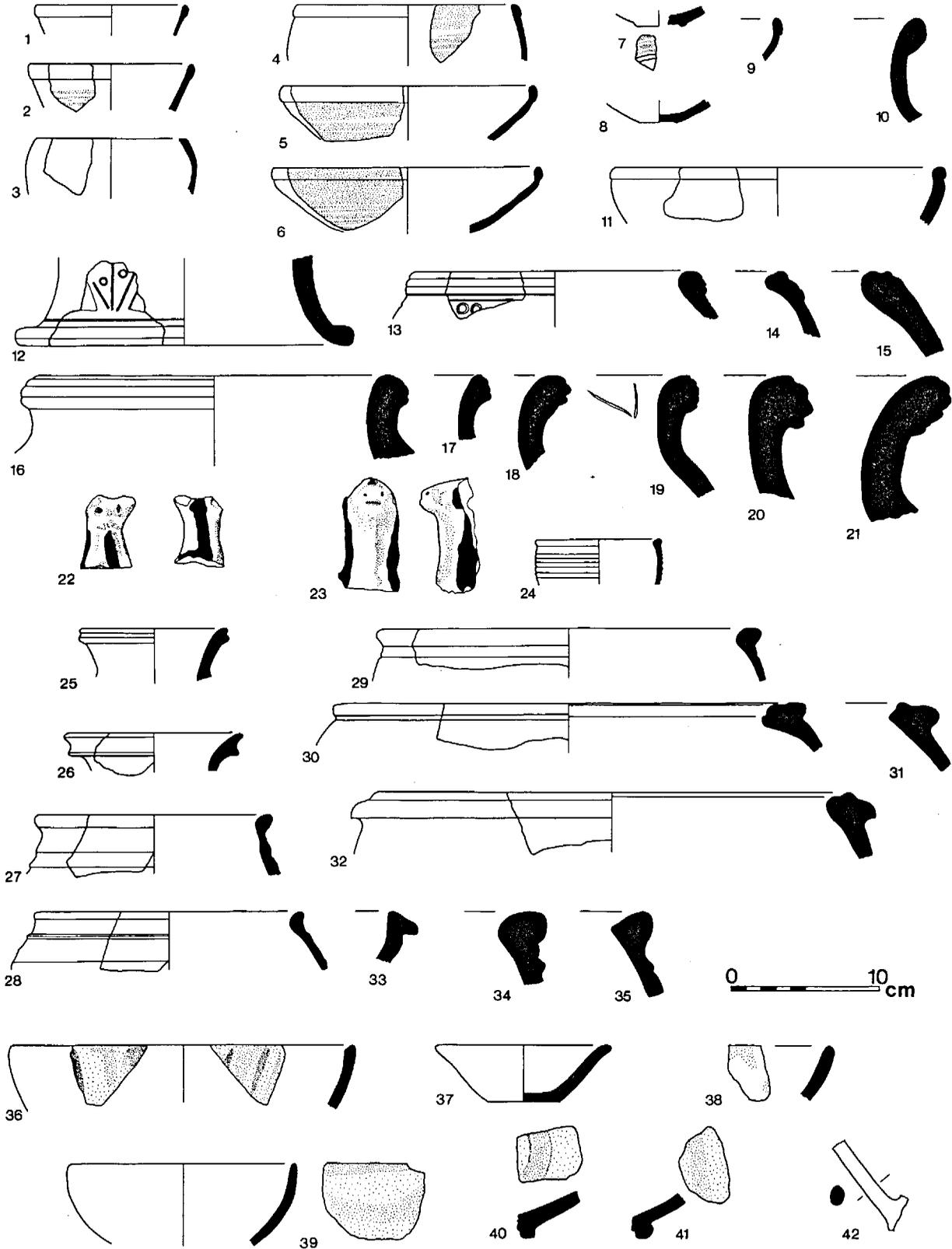


Figure B.27. Multiperiod Pottery from Sites 17, 18, 29, 43, 44, and Two Undated Figurine Fragments from Sites 43 and 44.

CERAMIC PHASES OF MULTIPERIOD SITES (tabs. B.2–B.6)

The following tables list the diagnostic forms and wares collected from the main multiperiod mounds beyond the immediate catchment of Kurban Höyük. In addition, the ceramic sequence for certain smaller sites is also summarized (sites 22, 27B, and 38).

The objective of the brief survey of the more distant multiperiod mounds (sites 17, 18, 29, 43, and 44) was to define the main settlement nodes of the third millennium B.C., not to establish complete occupation sequences for each site. Consequently, the tables provide most evidence for the Early Bronze Age, especially for the mid-late EB (mid third millennium: Kurban Höyük period IV). Other periods are only fleetingly represented, but where diagnostic wares were collected their presence has been noted. The biggest lacuna is for the second-early first millennia B.C., not because the ceramics are necessarily absent, but because the assemblages of these periods are so poorly understood. The most complete corpus of ceramics for this period comes from sites 5, 7, 8, 13, 31, and 47 (see above.)

Abbreviations of General Ware Types*

Chalcolithic	MP	Matte painted ware, mainly Middle Chalcolithic
	CF	Chaff faced similar; similar to 'Amuq F
	BRB	Beveled rim bowls
Early Bronze Age	KP	Karababa painted ware
	SW	Smearred wash ware
	MW	Metallic ware
	RV	Reserved slip ware
	KZ	Karaz ware
	TL	Triangular lugged cooking pot
	BP	Band painted ware
	BJ	Barrel jar
Hellenistic and Roman	IB	Incurved rim bowl
	RS	Red slipped ware
	RM	Relief molded ware
	BR	Brown glossy slipped ware
	ES	Eastern Sigillata
Late Roman-Early Byzantine	PC	Small bowls with pie crust rims
	GR	Amphorae with grooved rims
	SP	Scroll painted amphorae sherds
	CS	Countersunk lids
	BRR	Brittle ware rim
	BRH	Brittle ware handle
	BR	Brittle ware sherds
	LRC	Late Roman C fine ware
Early Islamic	BL	Blue-green glazed sherds
	CW	Cream ware forms
Medieval	FT	Frit ware
	MedRS	Medieval red-slipped ware
	MedCP	Medieval cooking pot ware
	MedSL	Medieval splash painted ware
Other	RB	Ring bases in distinctive ware type
	var	Variant of the type stated

*For specific types according to Algaze's classification, see table B.2 and Algaze in *KH II, Part Two*. In tables B.2–B.5, Kurban Höyük type series numbers are followed in parentheses by the quantity of sherds of this type.

Table B.2. Diagnostic Ceramics Recorded from Site 17.

<i>Period</i>	<i>Forms and Wares Present*</i>	<i>Total</i>
Late Chalcolithic A	J12 and 1 other	2
Early EB Transition	B12(2), B12a, B5a(3), and B11	7
Early EB	B4(4), J19(3), and B6b(2)	9
Mid-Late EB	B6(3), B1e(3), B5, B8a, B8b, J17, J18b, J16b, J16c, J35b, L1b, J4a, PB2(2), B8b, J31b, J18a, F1, KP(4), SW(2), MW, KZ(2), and TL(4)	35
EB-MB Transition	B2(2), BJ1b(2), B9b, J17(2), J14, and BJ	9
Late Second-Early First Millennia	1 handle, and 1 base; evidence for this period is weak	2
Hellenistic	IB(7), RM, RB-BR, BR, and others(2)	12
Hellenistic-Roman	RB and RS	2
Roman	BR (third century) and ES(4)	5
Late Roman-Early Byz.	GR, SP, BRR(4), BR(3), and BRH 10	10
Early Islamic	BL	1
Medieval	FT(6), MedSL, and MedCP	8

*Pottery types: B__, J__, L__, PB__, F__, S__, and BJ__ are, according to Algaze's KH typology for each period, B = bowl, J = jar, L = lid, PB = pedestal base, F = foot, S = stand, and BJ = barrel jar. Hence, B8c means bowl 8c for the period in question. Letters IB, RM, et cetera indicate more general ware types according to the list above. The quantity of recorded sherds is in brackets.

Table B.3. Diagnostic Ceramics Recorded from Site 18

<i>Period</i>	<i>Forms and Wares Present</i>	<i>Total</i>
Halaf and Halaf type	(13)	13
Middle Chalcolithic	MP(11) An additional 35 sherds of possibly Early-Middle Chalcolithic wares were recovered	11
Late Chalcolithic B	B3, B26b, B26c, B26e(2), J20a(5), J32, J33, and others(4)	16
Early EB	B4, J19(3), RV, and RB(2)	7
Mid-Late EB	J3b, J16c(5), J18(7), J18a, J35b(4), S3, BP(2), and RV	22
EB-MB Transition	B5b, B8c(2), B9e, J13, J16a, J17, J31b, BJ2b(8), BJ, TL, and others(2)	20
Hellenistic	IB, and another (1)	2
Roman	ES(4)	4
Late Roman-Early Byz.	CS, GR(4), PC, SP(14), and others(4)	24
Early Islamic	1 gl. bowl, CW(2) + 8 other glazed wares comparable to those from KH period II. One band rimmed jar	12
Medieval	MedCP(4), MedSL, lids(2), jar rims(4), and others(6)	17

Table B.4. Diagnostic Ceramics Recorded from Sites 21, 22, and 27B.

<i>Period</i>	<i>Forms and Wares Present</i>	<i>Total</i>
Site 21		
Middle Chalcolithic	MP(2)	2
Late Chalcolithic B	J34 and CF(5)	6
Early Bronze Age and Trans.	B5b, RB, and SW	3
Mid-Late EB	J18, KP, and others(2)	4
Late Second Millennium	1 bowl and 2 PSW storage jar rims are possibly of MB-LB date	3
Early First Millennium	2 jar rims, 1 storage jar rim, 1 bowl, and 1 other	5
Hellenistic-Roman	platter(1)	1
Late Roman-Byzantine	BR, SP	2
Medieval	MedCP(2), MedSL(2), lid, others(4)	9
Site 22		
Late Roman-Byzantine	SP, large bowl, and 1 other	3
Medieval	MedRS(2) and lid	3
Site 27B		
EB-MB transition	B9b, BJ(var), and 1 other	3
Late Roman-Byzantine	SP and others(2)	3
Medieval	MedCP(3) and lid	4

Table B.5. Diagnostic Ceramics Recorded from Sites 29, 38, 43, and 44.

<i>Period</i>	<i>Forms and Wares Present</i>	<i>Total</i>
Site 29		
Mid-Late EB	B8b(5), B10a, J3b, J4a(2), J16a(2), J35b, KZ, MW, RV(8), SW, and TL(2)	25
EB-MB Transition	J5, J9, J17, J32(2), BJ1b(8), BJ(11), and 1 other	25
Possible MB	BJ, 2 jars, 2 holemouth vessels, and 1 bowl (all PSW)	6
Hellenistic	IB and others(3)	4
Late Roman-Early Byzantine	BR(2), BRH, PC, large bowl, and 1 other	6
Medieval	MedCP(3), MedSL, lid, and others(5)	10
Site 38		
Hellenistic	RB(3), 9 body sherds of Hellenistic-Roman fine wares; also 6 sherds of painted ware, possibly Hellenistic-Parthian. No ES	12+6(?)
Late Roman-Early Byzantine	BR(4) and SP(2)	6
Site 43		
Late Chalcolithic B	CF(8). Note, no definite 'Amuq F forms present	8(?)
Mid-Late EB	B1e(2), B8b(3), B10a, J3b, J16b(2), J18a(5), J18b (var 19), BJ1b(3), F2, BP(6), MW(13), RV(4), SW(2), and 1 other	63
EB-MB Transition	B5a, B9e, J13, J16b, J17, BJ1b(4), MW, and others(7)	17
Middle Bronze Age	BJ(3), 1 bowl, and 1 other Although Iron Age wares were almost certainly present, no clearly diagnostic forms were identified.	5
Late Roman-Early Byzantine	BR(2)	2
Medieval	FT(3), MedCP(3), MedRS(7), and MedSL(5)	18
Site 44		
Chalcolithic	MP(2)	2
Late Chalcolithic B	CF(2)	2
Late Chalcolithic A	BRB	1
Early Bronze Age	B4, B6b, and others(3)	5

Table B.5. Diagnostic Ceramics Recorded from Sites 29, 38, 43, and 44 (*cont.*).

<i>Period</i>	<i>Forms and Wares Present</i>	<i>Total</i>
Site 44 (<i>cont.</i>)		
Mid-Late EB	B1e(2), B8b, J16b, J18a(2), J35(3), J37, BP(2), KB, MW(9), RV(2), and others(2)	26
EB-MB Transition	B2, B4, B9b, J5(3), J8, J9, J14, BJ1b, BJ(5), TL(5), and others(8)	28
Middle Bronze Age	BJ; although other second and early first millennia sherds were almost certainly present, no clearly diagnostic forms were identified	1
Hellenistic-Roman	RS(2) and ES(2)	4
Late Roman-Early Byzantine	BR(5), LRC, PC(2), and large bowls(2)	10
Early Islamic	BL(2), lamp, other glazed(2), and 1 other	6
Medieval	FT, MedCP(6), MedRS(8), MedSL, and others(9)	25

Table B.6. Selected Sherds from Field Scatters on Terraces Around Cümçüme and Şaşkan (fig. B.28).

<i>Figure B.28</i>	<i>No.</i>	<i>Fabric</i>	<i>Form</i>	<i>Form Number</i>	<i>Diam.</i>	<i>Sample Square</i>	<i>Date</i>
Row A ¹	Amphora rims and related forms are late Roman-early Byzantine.						
	1	SW ²	Amph. handle/rim	17	10	085	LRom-Byz
	2	SW	Amph. handle/rim	5	(?)	047	LRom-Byz
	3	SW	Amph. handle/rim	2	12	125	LRom-Byz
	4	Cream SW	Amph. handle/rim	9	8	073	LRom-Byz
	5	Cream SW	Amph. rim	18	11	152:60-80	LRom-Byz
	6	Cream SW	Amph/jug rim	19	12	172	LRom-Byz
	7	SW	Amph/jug rim	19	14	029	LRom-Byz
	8	Cream SW	Amph/jug rim	29	14	065	Rom-Byz
Row B ¹	Other simple ware forms; mainly late Roman-early Byzantine.						
	9	SW	Small bowl	27	(?)	124	LRom-Byz
	10	Cream SW	Small bowl	27	14	033	LRom-Byz
	11	SW	Small bowl	27	14	048	LRom-Byz
	12	Cream SW	Large bowl	7	(?)	064	Rom-Abb ³
	13	Cream SW	Large bowl	7	50	098	Rom-Abb
	14	SW	Jug handle	12	10	125	Rom-Byz
	15	Green SW	Band rim jar	13	(?)	110	LRom-Abb
	16	SW	Lid/bowl	28	14	139	LRom-Byz
	17	SW	Lid/bowl	28	(?)	389	LRom-Byz
	18	SW	Lid/bowl	28(?)	18	043	LRom-Byz(?)
Row C ¹	Brittle ware forms; Roman-Abbasid (ninth-tenth century).						
	19	Brittle	Jar rim	30	(?)	092	Rom-Abb
	20	Brittle	Jar rim	30	(?)	037	Rom-Abb
	21	Brittle	Jar rim	30	(?)	062	Rom-Abb
	22	Brittle	Handle	31	—	382	Rom-Abb
	23	Brittle	Handle	31	—	168	LRom-Abb
	24	Brittle	Handle	31	20	111	Rom-Abb
	25	Brittle	Handle	31	—	080	Rom-Abb
Row D ¹	Early Bronze Age diagnostic forms; definite and probable.						
	26	Green PSW ⁴	Cyma-recta(?)	37	(?)	026	E EB
	27	PSW	Grooved rim	10	18	154	M-L EB
	28	Pink PSW	Grooved rim	10	28	068	M-L EB
	29	PSW	Grooved rim	10	(?)	085	M-L EB
	30	Pink PSW	Bowl	42	18	105	M-L EB
	31	PSW	Bowl	42	14	119	M-L EB
	32	Pink PSW	Incurved rim	44	30	068	EB-MB trans.
	33	PSW	Incurved rim	44(?)	(?)	145	EB-MB trans.
	34	PSW	Barrel jar	43	18	115	EB-MB trans.
	35	PSW	Ring base	33	4	117	M-L EB
Row E ¹	Undiagnostic forms						
	36	Cream SW	Small jar	35	6	154:0	EB(?)
	37	Cream SW	Jar	—	(?)	080	(?)
	38	Cream SW	Bowl	—	(?)	082	(?)

Table B.6. Selected Sherds from Field Scatters on Terraces Around Cümcüme and Şaşkan (fig. B.28; *cont.*)

Figure B.28	No.	Fabric	Form	Form Number	Diam.	Sample Square	Date
Row E ¹	Undiagnostic forms (<i>cont.</i>)						
	39	Cream SW	Bowl	—	16	105	(?)
	40	SW	Jar/bowl	—	(?)	099	(?)
	41	SW	Small jar	35	11	072	(?)
	42	SW	Bowl	—	(?)	116	(?)
	43	Pink SW	Large jar	6	26	031	(?)
	44	Green	Large jar/tile	6(?)	(?)	027	(?)
	45	SW	Small jar	—	14	176	(?)
	46	SW	Jug handle	21	—	098	Rom-Byz(?)
	47	Pink LRC ⁵	Ring base	33	—	117	LRom-Byz
Row F	Mainly Roman-early Byzantine						
	48	Red LRC	Keel rim bowl	Hayes F3	(?)	Btw Sites 7 and 8.	6th Cent.
	49	SW	Small bowl	27	(?)	410	LRom-Byz
	50	Cream SW	Jug/amph. rim	29	8	444	Rom-Abb
	51	Brittle	Rim and handle	31	13	473	Rom-Abb
	52	Brittle	Rim	30	13	467	Rom-Abb
	53	SW	Lid/bowl	28	(?)	471	LRom-Byz
	54	Green SW	Countersunk lid	51	3.5	445	LRom-Abb
Row G	Mainly EB-MB transition						
	55	PSW	Jar rim	53	17	460	EB-MB trans.
	56	Pink PSW	Bowl	42	(?)	464	EB-MB trans.
	57	PSW	Bowl	44(?)	(?)	457	EB-MB trans.
	58	Green PSW	Bowl	42	(?)	459	EB-MB trans.
	59	PSW	Bowl	42	27	457	EB-MB trans.
	60	PSW	Barrel jar	45	23	462	EB-MB trans.
	61	PSW	Barrel jar	43	23	423	EB-MB trans.
	62	PSW	Ring base	33	3.5	466	M-L EB
	63	Cream PSW	Stand	53 (inverted)	10	Near Site 37	EB-MB trans.
Row H	Undiagnostic forms						
	64	SW	Jar	—	28	457	(?)
	65	Pink chaff	Jar	—	14	466	(?)
	66	SW	Bowl/dish	—	33	417	(?)
	67	Pink SW	Jar	—	9	457	(?)
	68	Cream SW	Jar	—	13	407	(?)
	69	SW	Jar	—	6	408	(?)
	70	SW	Small jar	35	(?)	473	(?)
	71	Cream SW	Small jar	35	9	441	(?)
	72	SW	Disc base	48	7	427	Iron Age(?)

¹Terraces around Kurban Höyük, Cümcüme, and sites 12 and 14.²SW = Simple Ware; pale brown, hard, sand tempered. Color variations as indicated.³Abb., i.e., ca. ninth-tenth centuries A.D. in this context.⁴PSW as for SW, but use is restricted to EB and MB forms.⁵LRC—see text, sites 12 and 14 and p. 283.

FIELD SCATTERS

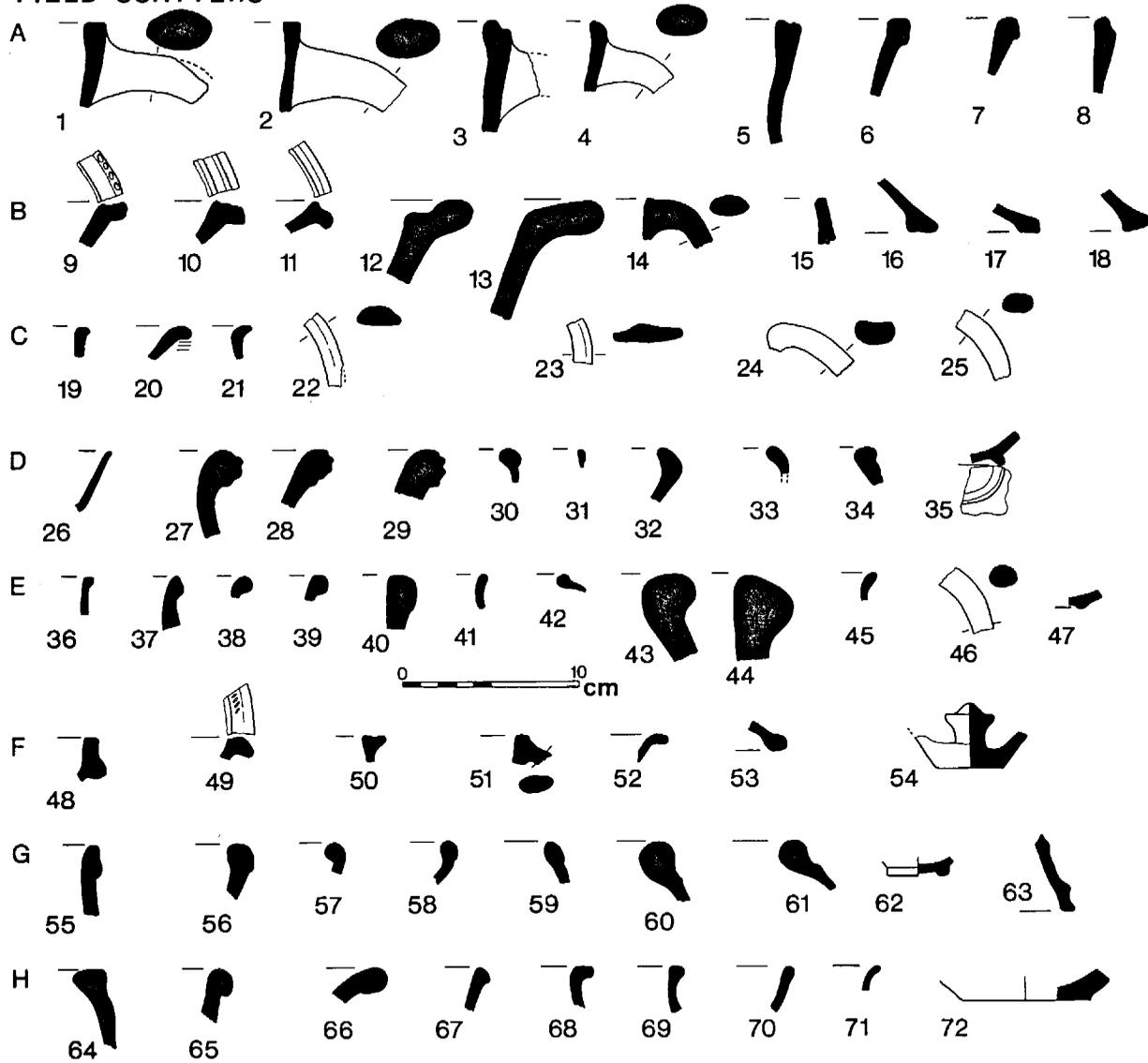


Figure B.28. Pottery from Field Scatters.

APPENDIX C

TABLE C.1: RESULTS OF THE ARTIFACT AND PHOSPHATE SAMPLING PROGRAMS.

<i>Sample Sq. No.</i>	<i>Number of Sherds</i>	<i>Number of Tiles</i>	<i>Number of Flints</i>	<i>Phosphates mg P/100 gm</i>	<i>Comments</i>
025*	41	—	5	140	—
026	46	—	2	120	—
027	37	—	—	190	—
028	29	—	1	240	—
029	48	1	5	190	—
030	40	1	5	190	—
031	46	—	1	180	—
032	36	1	—	140	—
033	22	—	2	170	—
034	34	—	2	140	+ 1 basalt quern fragment
035	38	—	1	170	—
036	25	—	1	150	—
037	18	—	1	140	—
038	26	—	—	140	—
039	17	—	—	160	—
040	2	—	—	94	—
041	44	1	1	150	—
042	40	1	—	—	—
043	18	—	—	200	+ 1 basalt quern fragment
044	33	2	3	260	Plow soil Site 23
045	37	1	—	200	Plow soil Site 23
046	12	—	—	190	—
047	40	—	2	—	—
048	30	2	—	—	+ 1 fragment of kiln waste
049	58	1	1	140	+ 1 fragment of kiln waste
050	8	—	1	140	—
051	22	—	—	—	—
052	5	1	—	190	—
053	7	—	1	82	+ 1 fragment of oyster shell
054	2	—	—	73	—
055	12	1	—	64	—
056	8	—	—	85	—
057	1	—	—	94	—
058	6	—	—	82	—
059	2	—	1	91	—
060	5	2	—	150	—
061	5	—	1	—	—
062	25	—	—	100	—
063	18	1	—	—	—
064	20	—	1	140	+ 1 basalt quern fragment
065	16	—	—	170	—

*Sample square number locations are given on figures C.1a, b at the end of this appendix.

TOWN AND COUNTRY IN SOUTHEASTERN ANATOLIA

<i>Sample Sq. No.</i>	<i>Number of Sherds</i>	<i>Number of Tiles</i>	<i>Number of Flints</i>	<i>Phosphates mg P/100 gm</i>	<i>Comments</i>
066	2	—	—	120	—
067	16	—	—	—	—
068	25	—	—	—	—
069	14	1	—	170	—
070	18	—	1	190	—
071	9	—	—	170	—
072	14	—	—	140	—
073	9	—	—	280	—
074	10	—	—	200	—
075	2	—	—	260	—
076	2	—	1	79	—
077	3	—	1	160	—
078	12	1	4	150	—
079	7	—	3	180	—
080	5	1	1	170	—
081	9	—	2	—	—
082	9	1	—	150	—
083	6	—	1	120	—
084	8	—	5	—	—
085	14	—	1	180	—
086	12	—	3	—	—
087	12	1	2	200	—
088	14	—	2	—	—
089	9	—	1	170	—
090	14	—	1	—	—
091	5	—	2	—	—
092	7	—	1	240	Plow soil Site 2
093	66+	10	1	340	Plow soil Site 2
094	—	—	—	360	Plow soil Site 2
095	23	—	2	220	+ 1 fragment of kiln waste
096	30	—	1	220	+ 1 fragment of kiln waste
097	21	—	1	140	—
098	45	—	2	240	+ 1 fragment of basalt
099	29	—	1	180	—
100	23	—	1	140	—
101	13	—	—	110	—
102	2	—	—	140	—
103	10	—	—	170	—
104	5	—	3	300	—
105	11	1	3	150	—
106	18	1	3	160	+ 1 fragment of basalt
107	20	—	2	180	—
108	7	—	—	240	—
109	10	1	2	140	—
110	11	1	—	100	—
111	11	1	2	85	—
112	3	—	—	88	—
113	13	—	3	130	—
114	17	—	5	160	—
115	18	—	1	150	+ 1 basalt quern fragment
116	22	2	3	100	—
117	11	1	2	88	—
118	9	2	—	82	—
119	14	—	—	79	—
120	0	—	—	91	—
121	1	—	—	14	—
122	26	1	—	150	—

APPENDIX C: RESULTS OF THE ARTIFACT AND PHOSPHATE SAMPLING PROGRAMS 295

Sample Sq. No.	Number of Sherds	Number of Tiles	Number of Flints	Phosphates mg P/100 gm	Comments
123	45	7	1	82	—
124	32	2	—	97	—
125	38	4	—	73	+ 1 fragment of kiln waste
126	38	3	—	73	—
127	20	3	—	70	—
128	4	—	—	64	—
129	13	—	—	79	—
130	36	3	—	100	—
131	46	3	3	130	—
132	37	1	—	120	—
133	26	1	—	—	—
134	16	—	—	79	—
135	28	2	—	21	—
136	12	—	—	82	—
137	3	1	—	88	—
138	6	2	—	—	—
139	33	4	—	97	+ 1 fragment of kiln waste
140	17	1	—	73	—
141	2	—	—	73	—
142	6	2	—	180	—
143	5	—	—	—	+ 1 fragment of kiln waste
144	1	—	—	—	—
145	11	1	1	180	—
146	75	5	—	220	—
147	140*	8	—	220	*4 x 5 x 5 m sample sq.
148	72*	—	—	280	*4 x 5 x 5 m sample sq.
149	61	2	—	88	+ 1 fragment of kiln waste
150	20	6	—	58	—
151	1	—	—	18	—
152–158	allocated elsewhere				
159	§ 17	2	—	76	—
160	§ 17	1	—	73	—
161	§ 19	—	—	82	—
162	§ 7	—	—	94	—
163	§ 4	—	—	64	—
164	§ 19	—	1	82	—
165	§ 18	1	3	85	—
166	§ —	—	—	340	Site 14, phosphate only
167	§ —	—	—	340	Site 14, phosphate only
168	§ 21	1	—	82	—
169	§ 1	—	—	40	—
170	§ 17	2	1	88	—
171	§ 10	—	—	46	—
172	§ 15	—	—	88	—
173	§ 6	—	—	76	—
174	§ 6	—	2	70	—
175	§ 5	—	—	—	—
176	§ 9	—	—	91	—
177	§ 10	1	—	88	—
178	§ 2	—	—	39	—
179	§§ 10	—	1	79	—
180	§§ 18	—	3	82	—
181	§§ 14	1	2	88	—
182	§§ 7	2	7	76	—

§ Field scatter around Site 14.

§§ Field scatter around Site 12.

TOWN AND COUNTRY IN SOUTHEASTERN ANATOLIA

Sample Sq. No.		Number of Sherds	Number of Tiles	Number of Flints	Phosphates mg P/100 gm	Comments
183	§§	5	—	2	85	—
184	§§	0	1	1	76	—
185	§§	5	2	2	91	—
186	§§	0	3	—	82	—
187	§§	6	—	3	—	—
188	§§	4	—	—	—	—
189	§§	4	—	—	82	—
190	§§	5	1	1	—	—
191	§§	0	—	—	—	—
192	§§	2	—	—	91	—
193			—	—	97	Site 12, phosphate only
194			—	—	97	Site 12, phosphate only
<i>Control Samples from Terrace I and Limestone Hills</i>						
201		—	—	—	240	—
202		—	—	—	120	—
203		—	—	—	61	—
204		—	—	—	76	—
205		—	—	—	64	—
206		—	—	—	340	—
207		—	—	—	82	—
208		—	—	—	100	—
<i>Kurban Höyük</i>						
350		—	—	—	360	Base of Kurban Höyük in
351		—	—	—	360	trench A09 (fig. 1.7A)
352		—	—	—	190	Trench A09: buried soil
353		—	—	—	110	Trench A09: subsoil
354		—	—	—	88	Trench A09: subsoil
355		—	—	—	76	Trench A09: subsoil
356		—	—	—	150	Section at G: plow soil
357		—	—	—	94	G: red-brown subsoil
358		—	—	—	67	G: Euphrates sand
359		—	—	—	97	G: red-brown subsoil
360		—	—	—	170	G: red-brown subsoil
362		—	—	—	320	Pit C (fig. 1.7): soil wash
363		—	—	—	260	Pit C (fig. 1.7): from mound
<i>Field scatters</i>						
374		43	—	3	150	+ 1 kiln waste, 1 basalt fragment
375		47	2	2	180	+ 1 kiln waste, 1 basalt fragment, 1 tessera
376		51	1	3	190	+ 2 kiln waste, 1 basalt fragment
377		13	—	3	110	—
378		8	—	2	91	+ 1 basalt fragment
379		9	1	—	120	+ 1 basalt fragment
380		39	2	1	150	—
381		34	—	—	140	—
382	§§	8	—	1	85	—
383	§§	6	—	2	88	—
384	§§	6	—	1	76	—
385	§§	0	—	—	76	—
386		58	4	3	180	+ 1 tessera
387		79	12	2	130	—
388		23	1	1	85	—

§§ Field scatter around Site 12.

APPENDIX C: RESULTS OF THE ARTIFACT AND PHOSPHATE SAMPLING PROGRAMS 297

Sample Sq. No.	Number of Sherds	Number of Tiles	Number of Flints	Phosphates mg P/100 gm	Comments
389	38	5	1	110	+ 1 kiln waste, 1 basalt fragment
390	8	1	1	73	—
391	6	1	—	70	—
392	10	1	2	100	—
393	4	—	2	94	—
394	4	—	2	170	—
395	§ 3	—	—	82	—
396	§ 20	—	—	67	—
397	§ 8	—	1	67	—
398	§ 17	1	1	85	—
399	§ 21	1	2	79	—
400	§ 13	1	1	58	—
401	§ 13	1	3	70	—
402	§ 12	1	1	67	—
403	—	—	—	380	Base of Kurban Höyük, C 1
404	—	—	—	200	Figure 1.7B: disturbed soil
405	—	—	—	380	Modern ash fertilizer
<i>Field scatters: Şaşkan area.</i>					
406	12	1	—	—	—
407	22	—	1	—	—
408	17	—	3	—	—
409	54	1	4	—	+ 1 basalt fragment
410	19	—	1	—	+ 1 basalt fragment
411	32	—	2	—	+ 1 basalt fragment
412	30	—	2	—	—
413	9	—	2	—	—
414	12	1	1	—	—
415	8	—	2	—	includes flint sickle
416	63	1	7	—	+ 1 basalt fragment
417	55	1	3	—	—
418	42	3	1	—	—
419	30	1	—	—	+ 1 basalt fragment
420	11	—	2	—	—
421	25	2	2	—	+ 1 basalt fragment
422	34	1	1	—	+ 1 basalt fragment
423	60	3	6	—	+ 1 basalt quern, 1 basalt bowl, 1 kiln waste fragment
424	46	1	2	—	—
425	49	—	3	—	+ 1 marble tessera
426	49	1	5	—	—
427	53	—	1	—	+ 1 basalt fragment
428	58	1	1	—	—
429	41	—	1	—	—
430	—	—	—	—	not used
431	25	—	2	—	+ 1 basalt quern fragment
432	29	2	1	—	—
433	33	4	1	—	—
434	28	1	11	—	—
435	42	3	42	—	+ 1 tessera
436	39	3	2	—	—
437	25	—	—	—	—
438	14	1	—	—	—
439	40	2	—	—	—
440	35	4	—	—	—

§ Field scatter around Site 14.

TOWN AND COUNTRY IN SOUTHEASTERN ANATOLIA

Sample Sq. No.	Number of Sherds	Number of Tiles	Number of Flints	Phosphates mg P/100 gm	Comments
441	37	—	7	—	—
442	24	—	—	—	—
443	57	4	2	—	—
444	22	2	—	—	—
445	35	1	1	—	—
446	39	5	3	—	—
447	45	4	1	—	—
448	61	3	4	—	+ 1 basalt fragment
449	33	—	—	—	—
450	16	1	—	—	—
451	60	3	1	—	—
452	36	1	—	—	—
453	17	—	—	—	—
454	37	1	—	—	—
455	13	—	1	—	—
456	54	1	—	—	—
457	79	4	—	—	—
458	48	4	1	—	—
459	53	2	2	—	—
460	59	—	2	—	—
461	18	1	1	—	—
462	20	2	2	—	—
464	24	2	1	—	+ 1 basalt fragment
465	34	2	3	—	—
466	57	1	—	—	—
467	73	5	1	—	+ 1 fragment kiln waste
468	55	2	—	—	—
469	53	2	2	—	—
470	18	1	1	—	—
471	18	—	2	—	—
472	31	4	3	—	—
473	16	1	—	—	—
474	8	—	—	—	—
<i>Field Scatters at Akpınar</i>					
475	24 (6)	—	—	—	475–83 field scatters
476	8 (2)	—	—	—	at Akpınar, Site 37.
477	24 (6)	—	—	—	10 x 10 m equivalents.
478	48 (12)	—	—	—	All counts from 5 x 5 m squares
479	0 (0)	—	—	—	given in brackets.
480	56 (14)	—	—	—	—
481	24 (6)	—	—	—	—
482	16 (4)	—	—	—	—
483	16 (4)	—	—	—	—
<i>Samples from Kurban Höyük</i>					
484	—	—	—	380	MRN** 13285 ash
485	—	—	—	340	MRN 12109 red-brown clay
486	—	—	—	360	MRN 13284 gray soft loam
487	—	—	—	320	MRN 11689 soft brown loam
488	—	—	—	280	MRN 12867 soft brown loam
489	—	—	—	280	MRN 13230 ashy and fibrous
490	—	—	—	220	MRN 11969 reddish clay
491	—	—	—	91	MRN 18222 compact brown

**MRN = Master Register Number.

APPENDIX C: RESULTS OF THE ARTIFACT AND PHOSPHATE SAMPLING PROGRAMS 299

<i>Sample Sq. No.</i>	<i>Number of Sherds</i>	<i>Number of Tiles</i>	<i>Number of Flints</i>	<i>Phosphates mg P/100 gm</i>	<i>Comments</i>
492	—	—	—	360	MRN** 13481 mud; fibrous and ashy
493	—	—	—	380	MRN 13178 brown, ashy
494	—	—	—	380	MRN 13284 ashy lumps
495	—	—	—	340	MRN 11750 reddish clay
496	—	—	—	380	MRN 13242 gray brown loam
497	—	—	—	340	MRN 11615 compact ash
498	—	—	—	260	MRN 11714 reddish clay
499	—	—	—	380	MRN 11806 soft brown loam
500	—	—	—	320	MRN 12455 soft brown clay
501	—	—	—	380	MRN 13658 brown with clay
502	—	—	—	380	MRN 12735 dung lumps
503	—	—	—	380	MRN 13285 soft gray loam
504	—	—	—	380	MRN 11870 brown soft loam
505	—	—	—	380	MRN 13481 gray brown fiber
506	—	—	—	380	MRN 12611 gray brown ashy
507	—	—	—	380	MRN 12735 gray ashy
508	—	—	—	380	MRN 13154 gray brown ashy

**MRN = Master Register Number.

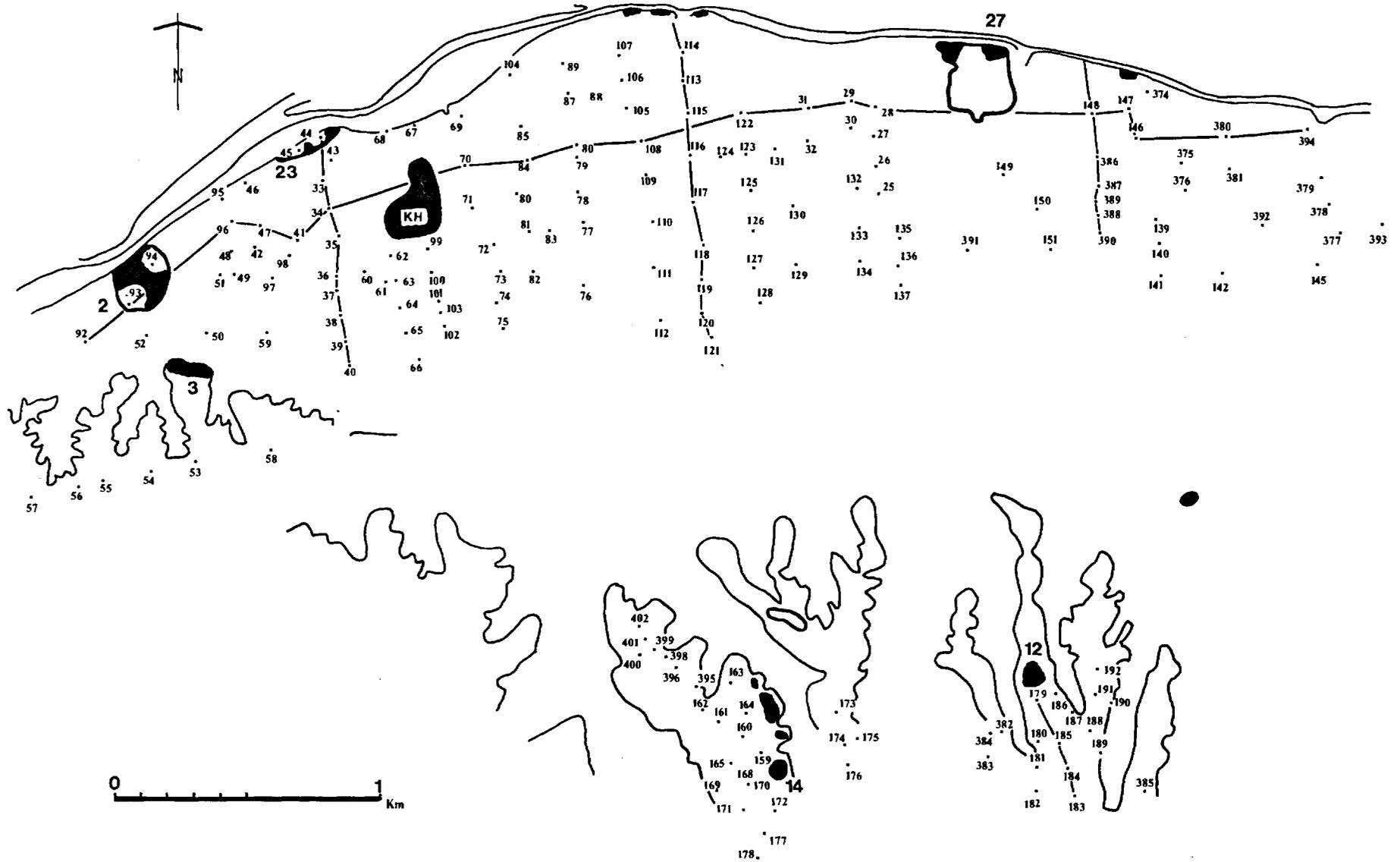


Figure C.1a. Location of Sample Squares for Field Scatters and Soil Phosphate Analysis in the Kurban Höyük Area.

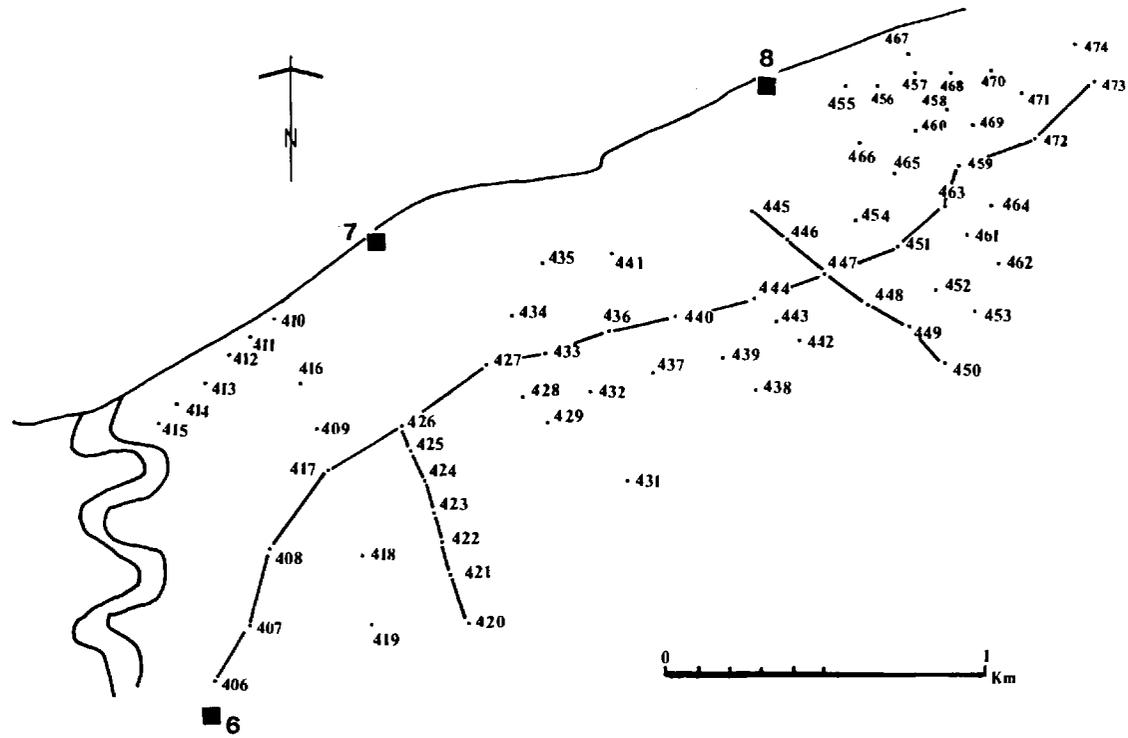


Figure C.1b. Location of Sample Squares for Field Scatters and Soil Phosphate Analysis in the Şaşkan Area.

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