

# ÇATAL HÜYÜK IN PERSPECTIVE

IAN A. TODD













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**Ian A. Todd**

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# Preface

The site of Çatal Hüyük, which lies in the Konya Plain of south central Turkey, has revealed a sophisticated Neolithic settlement dating to the seventh and sixth millennia B. C. The remarkable state of preservation of the architecture and artifacts provides an unusually detailed picture of life on the Anatolian Plateau ca. 6000 B. C. Perhaps the most surprising aspect of the excavations lies in the works of art (wall paintings, plaster reliefs, and other features) that were discovered in many of the buildings. Such evidence had never been recovered before, and it cast an entirely new light on peoples' artistic abilities and complex religious beliefs at a time when they had but recently adopted a sedentary way of life. Çatal Hüyük is unique in many ways, and the excavations there have revolutionized our thinking about the prehistory of the Near East.

The purpose of this book is to summarize available information about Çatal Hüyük, and to consider the site in the wider framework of Near Eastern prehistory. The earlier sections are devoted to a factual examination of the site and the material found on it, while the later sections relate the site to its environment and to contemporary communities. These latter aspects have received little attention in print, and much new information has become available since James Mellaart wrote his preliminary reports and monograph. Such data are essential for a more accurate and complete understanding of the interaction of man with his environment, and his ability to adapt to the changes inherent in the growth of an increasingly complex society. There is a general tendency to underrate the capabilities of people in prehistoric societies, but excavations at sites such as Çatal Hüyük and Jericho have clearly shown a high degree of sophistication, achieved under favorable circumstances long before the invention of writing and other supposed attributes of civilization.

The book has been written for the interested layperson as well as for students and scholars who do not have a detailed knowledge of the prehistory of Anatolia. But I trust that scholars in the field will also derive benefit from a new concise treatment of the subject.

Çatal Hüyük is of the greatest significance in the development of Western Civilization, and I hope that this contribution may serve to arouse students' interest and encourage further research in the field of Near Eastern prehistory.

In addition to the specific acknowledgments in the Notes, I wish to offer my sincere thanks to James Mellaart for all his help and encouragement.

Ian A. Todd  
January 1976

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*To Sally*

## About the Author

Ian A. Todd received both his B. A. and Ph. D. from the University of Birmingham, England, and he is currently Assistant Professor in the Department of Mediterranean Studies at Brandeis University. His initial field training was obtained at several prehistoric, Roman, and medieval sites in Britain, and he was a field supervisor at various excavations in Iran, Jordan, and Cyprus, as well as field supervisor at Çatal Hüyük for three years. Dr. Todd is the author of more than a dozen articles and is currently working on a computerized archaeological site-and-subject index for the Near Eastern area.

# 1

## Introduction

The purpose of this book is twofold: first, to summarize in convenient form the major information known about the site of Çatal Hüyük<sup>1</sup> in the Konya Plain of south central Turkey, and second, to place the site in perspective with other Anatolian and Near Eastern sites and culture areas. Since the excavations have revealed only a small portion of the settlement and the major part of the site remains untouched, it may seem somewhat premature to present material on the site at this point; however, excavation of the site ceased in 1965, and since that time much new material has become available concerning the earlier prehistory of Anatolia. It is therefore timely to summarize the present situation of Çatal Hüyük and to examine the various directions which future research might take.

Before proceeding to an examination of the site itself, we shall present a brief outline of the history of excavation of Neolithic sites in Turkey. This will enable the reader to follow the logical chain of events which led to the discovery and excavation of the site. In the years preceding World War II, excavation projects were begun by John Garstang (1953) at Mersin, Hetty Goldman (1956) at Tarsus, and Robert Braidwood (1960) in the 'Amuq Plain. (The dates are dates of publication, not of

## 2 Çatal Hüyük in Perspective

excavation.) All three projects encountered Neolithic material in the earliest levels of the various sites, material which could generally be related to that known from other early excavated sites in the Near East. Although the finds made on these sites provided some information concerning the types of artifacts in use during the various phases, little evidence was forthcoming about the architecture and environment of the earliest settlements. Thus early material was available for study from sites in Cilicia and the 'Amuq Plain before anything was known about the Anatolian Plateau.

The rapid progress made by Anatolian archaeology during the past two decades or so is well illustrated by the statements of Seton Lloyd who wrote in 1956:

The scene of the Neolithic Revolution seems in fact to have been an area limited to the north by the range of Taurus and the fringes of the Syrian plain. . . . Climatic conditions at which we can only guess, including perhaps the extreme cold of the Anatolian winter, must indeed be accepted as the most reasonable explanation of the geographic barrier, behind which Neolithic man seems so arbitrarily to have confined himself. (Lloyd, 1956, p. 53-54.)

In fact, a geologist located the site of Ilıcapınar on the Anatolian Plateau and published a report in 1940 (Kleinsorge, 1940). Early material had also long been known from Çukurkent (Ormerod, 1912-1913, pp. 48 ff.), but the date of additional finds made on that site and others in the Beyşehir region by James Mellaart in 1951-1952 remained uncertain.<sup>2</sup> Knowledge of the earlier prehistoric periods on the Anatolian Plateau was radically improved by the field surveys of Mellaart, French, and others during the years 1951-1958. Material bearing a clear relationship to that found in the earliest levels



at Mersin was found in the Konya Plain and the southwest Anatolian Lake District, and it thus became apparent that the plateau had indeed been inhabited in the Neolithic period (Mellaart, 1961).

Excavations began at the site of Hacilar, 26 km southwest of Burdur, in 1957 and continued through 1960.<sup>3</sup> The earliest remains on this site consisted of a settlement with at least seven phases of occupation, all of which seem from the small amount of evidence available to have been aceramic. A date of ca. 7000 B.C. has been suggested by one C-14 date. Separated from these levels by a clear hiatus, the Late Neolithic-Early Chalcolithic settlement on the same site was characterized by well-made mainly monochrome pottery in the Neolithic levels (IX-VI), and by fine painted wares in the later phases (V-I). This later settlement has been dated ca. 5750-5000 B.C., also on the evidence of C-14 dating. The Hacilar excavation thus provided information about settlement on the Anatolian Plateau both earlier and later than the main Neolithic levels of Mersin to the south of the Taurus mountains; but the crucial phase contemporary with Neolithic Mersin was absent at Hacilar, and it was to fill this gap of possibly 1250 years that excavations were undertaken at Çatal Hüyük in the Konya Plain. The site was discovered in 1958, but attention could not be transferred to it until the excavations at Hacilar had been brought to a close.

The significance of the excavations at Çatal Hüyük will become apparent throughout the various sections of this book; it is sufficient to note at this point that discoveries on the site have cast a completely new light on the achievement of man in the seventh and sixth millennia B.C. Previously formulated theories have to be adapted to take into account this new material which is of the greatest significance, not only for the prehistory of Anatolia, but also for the whole of the Near and Middle East. Much rethinking is now necessary if we are to view the achievements of the Neolithic

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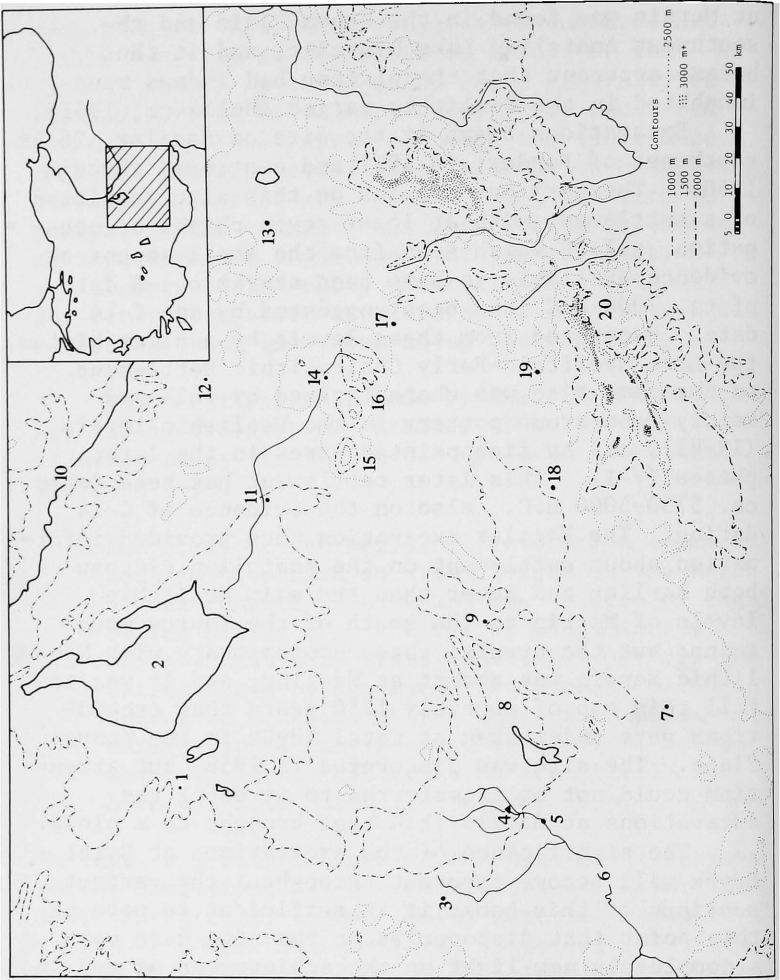


Figure 1. Topographical map (facing page) of Konya Plain and the surrounding area.

Key:

- |                 |                     |
|-----------------|---------------------|
| 1. Cihanbeyli   | 11. Aksaray         |
| 2. Tuz Gölü     | 12. Acıgöl          |
| 3. Konya        | 13. Yeşilhisar      |
| 4. Çatal Hüyük  | 14. Çiftlik         |
| 5. Çumra        | 15. Hasan D.        |
| 6. Çarşamba Çay | 16. Melendiz D.     |
| 7. Karaman      | 17. Niğde           |
| 8. Konya Plain  | 18. Ereğli          |
| 9. Karapınar    | 19. Ulukışla        |
| 10. Kızılırmak  | 20. Tarus Mountains |

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period in this region in their proper perspective. In the past there has been a general tendency to minimize the achievements of earlier village farming communities, but the excavations at Çatal Hüyük and other Near Eastern sites now provide clear proof of the developed nature of some settlements at this period. It is no longer necessary to gaze in wonder (or disbelief) at, for instance, the architecture of Jericho Pre-Pottery Neolithic A, and future excavations must be designed to elicit information about the earlier prehistoric sequence in many areas—a sequence which will probably turn out to be more complex and lengthy than was previously suspected. The time has come to give "Neolithic Man" due credit for his achievements, and to derive information from excavated material on aspects which have received too little attention in the past, such as environment and social structure.

## 2 The Site

Distances are given as the crow flies. The information listed here is usually taken from the various reports by James Mellaart unless otherwise acknowledged.

Location: In Konya Plain; ca. 260 km south of Ankara; ca. 40 km southeast of Konya; ca. 11 km north of Çumra; ca. 2 km south of Küçükköy; ca. 28 km from nearest edge of Konya Plain.

Latitude: 37°06' N

Longitude: 32°08' E

Altitude: Base of site 1004 m above sea level (Cohen, 1970, p. 130).

Administrative district: (T. C. İçişleri Bakanlığı, 1971).

İl (State) Konya

İlçe (County) Çumra

Bucak (City) Çumra

Köy (Village) Küçükköy (Administrative code number 42-6-1/17).

Map reference: Konya 59/60-Is (Harta Genel Müdürlüğü, 1945; 1:200,000 series, Konya sheet).

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Note: The location of the site to the south of Çumra on the Roadmap of Turkey (Karayolları Genel Müdürlüğü, 1975 and earlier editions) is erroneous.

- Dimensions: East mound: Approximately oval with low skirt on east side; length 500 m; width 300 m; height above plain level 17.5 m; area 32 acres.  
West mound: Circular; diameter ca. 400 m; height 7.5 m.
- Water supply: Beside Çarşamba Çay river; also wells in area. For discussion see Section 10.
- Precipitation: Average annual precipitation at Çumra 249.3 mm (de Meester, Ed. 1970, Table 1.) No figures are available for the site.
- Soils: Alluvial plain; at juncture of Çarşamba fan soil and former back-swamp soil (Driessen and de Meester, 1969).
- Condition of site: Undisturbed except for excavation areas. Not under cultivation.
- Survey: Mellaart, French, and Hall: November, 1958.
- Excavations: Directed by James Mellaart (1961-1963) and Oliver Gurney, 1965  
17th May - 29th June, 1961  
7th June - 14th August, 1962  
10th June - 30th August, 1963  
18th July - 25th September, 1965.

Location of material: Ankara Museum - Konya Museum

Site identification letters: ÇHÇ (Çatal Hüyük-Çumra)

References: Note: Only works which are principally or entirely devoted to the site are listed here. Other references may be consulted by means of the footnotes in the following sections. A note following a reference denotes the specialized subject of the work; where no such note appears the work is of a more general nature. Items are listed in approximate chronological order:

- |       |                    |  |
|-------|--------------------|--|
| 1961: | Mellaart           | (1961 c and d)   |
| 1962: | Mellaart           | (1962 a, b, c, d, and e)                                   |
|       | Bialor             | (1962): chipped stone                                      |
| 1963: | Mellaart           | (1963 a, b, c, d, e, f, g, and h)                          |
|       | Helbaek            | (1963): textiles   |
| 1964: | Mellaart           | (1964 a, b, c, d, e, and f)                                |
|       | Helbaek            | (1964): flora  |
| 1965: | Mellaart           | (1965 a): excavations on West mound                        |
|       | Mellaart           | (1965 b)   |
|       | Burnham            | (1965): textiles   |
|       | Ryder              | (1965): textiles   |
| 1966: | Mellaart           | (1966 a, b, c, d, and e)                                   |
| 1967: | Mellaart           | (1967): covers first three seasons of excavation only      |
|       | Bucha and Mellaart | (1967): archaeomagnetic measurements of baked clay samples |
| 1969: | Perkins            | (1969): fauna  |

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1969:	Heinrich and Seidl	(1969):	architecture
1970:	Mellaart	(1970 b)	
1971:	Angel	(1971):	human skeletal material
1972:	Bartel	(1972):	settlement pattern
	Ferembach	(1972):	human skeletal material

For a general treatment of the site see also the relevant sections in Mellaart, 1965 c, 1970 c, and 1972.

The double mound of Çatal Hüyük lies in the Konya Plain in south central Anatolia (also called the south Anatolian Plateau)(Figure 2). According to the available evidence the East mound was occupied in the Early Neolithic period, and only later in the Late Neolithic or Early Chalcolithic period was the settlement moved across the branch of the Çarşamba Çay to the West mound. Most excavation to date has been concentrated on the East mound, with very little work having been undertaken on the West site. In this work, unless the site as a whole is being considered, the name "Çatal Hüyük" refers to Çatal Hüyük East. It should be stressed that considerable confusion may arise if authors fail to specify the sector of the site to which they are referring. An alternative nomenclature has been used by David French who names Çatal Hüyük East as "Çatal Hüyük I," and Çatal Hüyük West as "Çatal Hüyük II" (French, 1970 and 1972).

Since the relationship of Çatal Hüyük to its environment is discussed in Section 10, the following description serves only to give the reader a general impression of the area in which the site is located. The Konya Plain (or Great Konya Basin as it is also called) forms the largest alluvial plain in Turkey, covering an area of 10,000 km<sup>2</sup>. It is entirely surrounded by mountains, which are frequently visible from Çatal Hüyük on a clear day.





Figure 2. Çatal Hüyük East and West viewed from the north. Mellaart (1967) Pl. 1.

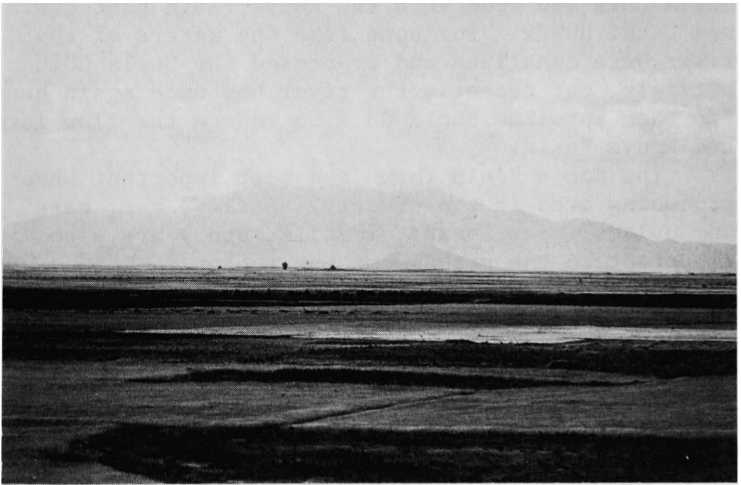


Figure 3. View to the east and Kara Dağ from the site. Mellaart (1967) Color Pl. II.

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To the north of the plain, and separated from it by a low range of hills (Boz Dağ, 1544 m), lies the Salt Lake (Tuz Gölü) Basin. The Taurus Mountains limit the plain along the whole of its southern edge, and to the west of the town of Konya the plain terminates abruptly at the foot of the southeastern end of the Sultandağları mountain range. The plain, with an average elevation of 1000 m, is divided into two major sectors centered around Konya/Çumra and Karaman by the Kara Dağ mountain (2271 m) (Figure 3). The climate of the region is continental with hot dry summers and fairly severe winters, and precipitation figures vary markedly in different parts of the plain depending on proximity to, or distance from, the encircling mountains. Rainfall occurs predominantly in the winter and spring, with only very small amounts in the months of July and August.<sup>4</sup> The plain is watered mainly by the Çarşamba River and other minor streams, some of which are only seasonal. In its natural state the Çarşamba Çay flows from Lake Beyşehir south-southeast through Suğla Lake and down into the Konya Plain past Çumra and Çatal Hüyük. For some time the waters of the river were canalized and by-passed the Suğla Gölü entirely, but recently the river has once again been fed back into the Suğla Gölü to reduce the flow into the Konya Basin.

The Konya Plain forms the most important wheat producing area in the country. Barley, rye, oats, and pulses (peas, beans, lentils, etc.) are also important to the economy of the region.<sup>5</sup> The present aspect of the plain is one of large expanses of land devoted to cereal production, with scattered villages and trees often confined to the banks of irrigation canals. The lack of trees is one of the most notable features of the landscape. Cultivation is particularly extensive in the Çumra area, but that this cultivation is, at least in part, of fairly recent origin is shown by Leake's description of "scanty cultivation" even around Çumra in 1800 (Leake, 1824, p. 94).

The present aspect of the plain cannot be taken as indicative of the prehistoric environment. The Konya Basin has no natural outlet, and it seems clear that the present irrigation system has aggravated the problems of salinity and the high water table in the area. Work is currently in progress on a drainage project which will involve pumping the surplus water from the Konya Basin into the adjacent northern Tuz Gölü Basin, and this should alleviate the problem of waterlogged areas in some parts of the plain. Even during the summer months partial flooding occurs to the south of Konya, and it would seem from reports of travelers such as Leake that a seasonal lake existed in the vicinity of Konya until fairly recent times (Leake, 1824, p. 49). It is clear that recent irrigation practices have materially changed the face of the plain.

Seven main routes give access to the plain. An easy pass over the Boz Dağ leads to the Tuz Gölü Basin in the north. To the northeast the road to Sultanhanı and Aksaray rises gently out of the plain. From the eastern end of the plain routes lead northeast past Niğde to Kayseri, and past Ulukışla through the Taurus Mountains southward to Cilicia. In the south the main route leaves the plain to the south of Karaman and passes through the Taurus, partially following the Göksu (Calycadnos) River valley. In the west the route to Akşehir and Afyon rises gradually out of the plain, while the Beyşehir road ascends steeply out of the plain to the west of Konya. The plain must have derived considerable importance in antiquity from its strategic position on the routes from western Anatolia to Cilicia, and more generally on the northwest to southeast route running through Anatolia. The densest concentrations of ancient sites lie in the Çumra and Karaman areas with only a scatter in other parts (Mellaart, 1961 a and 1963 i; French, 1966, 1970, and 1972); however, any detailed consideration of ancient settlement patterns must take

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into account recent changes in the landscape, such as that to the east of Karapınar where prehistoric material has been found below several meters of sterile windblown sand.<sup>6</sup> Possible inadequacies in the available field surveys must also be considered (French, 1970, pp. 139, 141). The settlement pattern contemporary with the occupation of Çatal Hüyük East is considered in Section 11.

### 3

## The Excavations

During the four seasons of excavation at Çatal Hüyük, work was principally concentrated on a one-acre area on the west side of the East mound (Figure 4). Only two small soundings, together covering an area of 180 m<sup>2</sup>, were made on Çatal Hüyük West (in 1961), and very little is known about this later site. The excavation area on Çatal Hüyük East was chosen after several test trenches had indicated the presence in this area of buildings grouped closely together. Before excavation commenced, burned buildings were visible on the surface of the mound, and Mellaart postulated that the earliest settlement would lie in close proximity to the river. The eroded western slope of the mound seemed to offer the best opportunity for horizontal excavation, and work was thus concentrated on this slope beginning ca. 2 m below the summit of the mound, and descending to the level of the track which runs around the foot of the mound in this area. A point of major importance is that excavation was undertaken on only this portion of the mound, and the whole of the remainder of the East site is untouched. Any evaluation of the nature of the architecture and finds within the excavated area must take into consideration what may lie outside the limits of the excavations. Mellaart rightly felt that excavation in other parts of

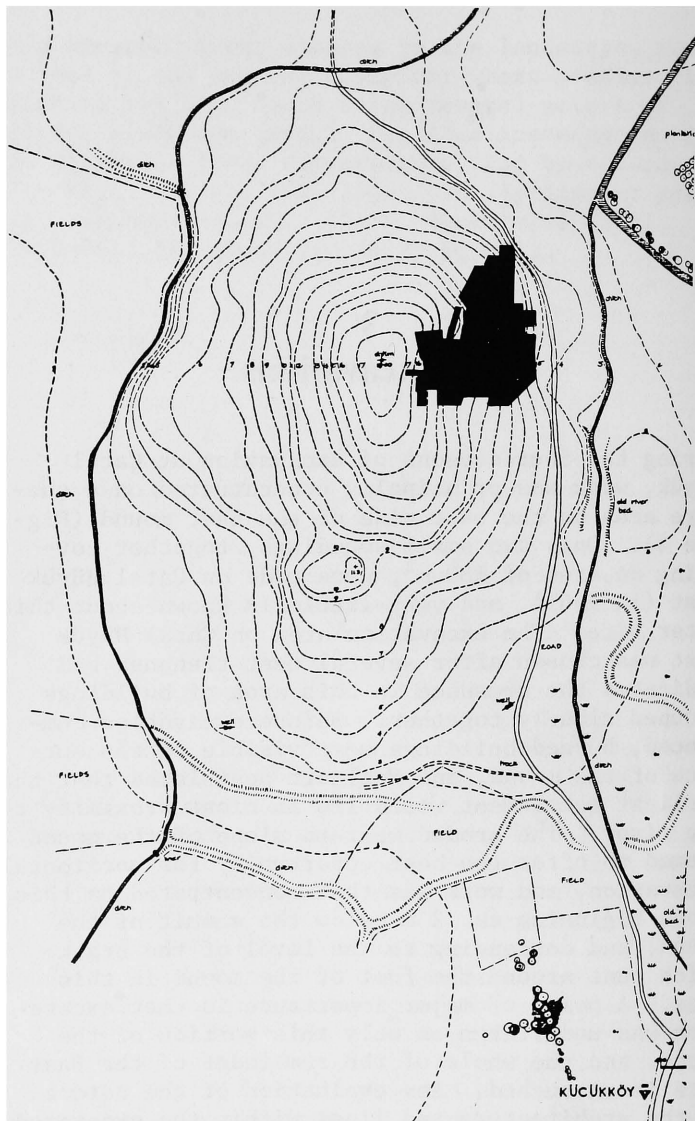


Figure 4. Site plan of Çatal Hüyük East and West showing excavated areas. Mellaart (1962 a) Fig. 2. Updated by Mellaart in personal communication, 1974.

the East site would only be of benefit if the stratigraphy of these other areas could be connected with that of the main area. Such a process was not possible with the time and resources available, and excavation was therefore limited to the one area on the west slope shown in black on the site plan, Figure 4. It should also be stressed that work was by no means completed within the major one-acre area, and that virgin soil was not reached. Because thirty-one of the thirty-two acres of the East site remain untouched by any excavation, much still remains to be learned about the history and development of this small portion of the settlement in its various phases.

The size and nature of any excavation inevitably depend on the financial resources available; the excavations at Çatal Hüyük were of modest proportions when compared to some of the major long-established excavation programs in Turkey. Approximately thirty-five workmen were employed each season, many of whom had worked for Mellaart previously at Beycesultan and Hacilar, and they were thus well acquainted with the requirements of archaeological excavation techniques. The Turkish labor force was supervised by the director, with the assistance of a varying number of site supervisors. Up to three trained conservation experts, together with an architect, were in attendance most of the time. Specialists in other fields also joined the project at intervals during the course of the excavations.

Methods of excavation on any site vary according to the goals of the particular project; Mellaart wished to expose adequate architectural plans of the various building levels and to obtain the necessary information on artifacts and the general way of life of the inhabitants of the site. In addition, it was desirable, as early as possible in the program, to define the depth of deposit and the number of building levels on the site. Çatal Hüyük, however, presented special problems in the excava-

tion of deep soundings, and two separate attempts to reach virgin soil over a sizable area were unsuccessful. The danger always exists that a deep sounding may provide an incomplete, and possibly highly inaccurate, record of the nature of the successive phases of occupation, and this was especially true of Çatal Hüyük, where a limited sounding might reveal a storeroom but totally miss the important building to which it was attached. An additional, and very important, drawback to such a method of excavation at Çatal Hüyük lies in the decoration of the various structures. This subject is more fully treated in Sections 5 and 6, and it is sufficient here to point out the problems that would arise if a sounding were to reveal, for instance, the corner of a building with painted decoration on both walls which continued beyond the limits of the excavation. If such a situation were to occur at a considerable depth, there would probably be no alternative but to save the exposed sections of wall, and to hope to be able to recover the remaining portions at a later date. Such an approach would clearly lead to the recovery of inadequate information concerning the nature of the decoration in its entirety, and some of the decoration would probably be destroyed in the process.

Once the test trenches revealed the types of material that lay immediately below the surface of the site, there could be no doubt but that horizontal rather than deep vertical excavation was required. Of the methods of excavation available to him, Mellaart chose to excavate the area building-by-building. This was usually a fairly simple procedure since mud brick walls with their plastered interior faces were clearly visible on the surface after initial scraping, and the entire plan of a structure could frequently be ascertained before any excavation took place within it. The uppermost level of buildings was cleared and recorded, and excavation then proceeded into the earlier levels. The state of preservation of the walls (in



a few cases almost up to the original roof height) usually left little doubt about the plan of a building, and the difficulties encountered on some sites with poorly preserved and collapsed mud brick walls were not encountered at Çatal Hüyük. The building-by-building excavation of the site had the advantage that each structure could be treated as a unit, and the decoration of entire walls could be exposed, conserved, and removed at the same time, unhindered by the balks required by the grid system of excavation. Such balks crossing walls and buildings would have been a serious obstacle to the conservation of the paintings and other decorative features found on the site. When exposed to the hot dry summer air the wall plaster dried and hardened very quickly, thus making it much more difficult to remove the plaster layers overlying the requisite painted surface. It was essential to reveal an entire wall painting as speedily as possible with the techniques devised at the time of the excavation, and balks would have greatly hampered this effort.

The cleaning and conservation of extensive well-preserved wall paintings at Çatal Hüyük presented problems which had never before been faced on a large scale on a Near Eastern prehistoric excavation. The discovery of wall paintings was totally unexpected, and conservation measures had to be instituted immediately to ensure their preservation. But if equipment such as an air tent, which was used in Turkey for the first time at Can Hasan III in 1969, had been available, controlled temperature and humidity could have been maintained; the paintings would thus not have dried out; and excavation and conservation work could have proceeded more slowly. In such a situation a grid system of excavation could have been employed, and the balks removed when necessary after recording the sections. Excavation of the site utilizing the grid square system would have provided a closer control on the stratigraphic

association of the various buildings and features. Few sections have so far been published in the site reports, and the final definitive volume on the first four seasons of excavation has yet to appear. The publication of further section drawings would aid in the clarification of problems raised by some scholars with relation to the stratigraphy of the site.

Excluding a number of Iron Age and Hellenistic pits near the top of the mound, Çatal Hüyük East consists entirely of Neolithic deposits. Architecture of this early period therefore lies immediately below the present ground surface, and the usual problems of later material overlying the Neolithic levels were not encountered on the site. The stratification consists of fifteen separate superimposed building levels, numbered 0 to XIII, XIII being the earliest. Level VI consists in some cases of two building levels—VI A and VI B, VI B being the earlier. These levels represent entirely new buildings, and not just the rebuilding or alteration of earlier structures. The number of building levels and the usually good state of preservation of the walls account for the accumulation of possibly 18 m or more of occupation debris within an estimated span of 1000 to 1500 years. The 1965 deep sounding reached Level XIII, but there are clearly still earlier remains to be found in this area of the site, and as we said earlier, virgin soil has nowhere been reached. The total depth of accumulation of occupation debris is therefore uncertain.

Despite the problems encountered in the excavation of deep soundings at Çatal Hüyük, two deep soundings were attempted, the first in 1963 and the second in 1965. The 1963 sounding, below room 8 of Level X, close to the edge of the mound, revealed a brown humus layer below the earliest buildings in this area, and this layer was preceded by a 30-cm thick deposit of a grey claylike material, possibly indicating the existence of flooding in this low-

lying sector of the site (Mellaart, 1964 a, p. 73). The lowest strata in the sounding consisted of various plaster floors with their associated features, together with the remains of decomposed mud bricks, but there was no evidence of mud brick walls in situ. The whole deposit, which also contained some stone and bone tools but no pottery, seemed to Mellaart most likely to have come from some ruined buildings nearby, but lack of time made it impossible to enlarge the excavation area to clarify any such relationship. The humus layer and the underlying claylike deposit seem to be of local significance only; they were not found in the 1965 sounding further in toward the center of the site, and there is no evidence to suggest that they represent a total break in the occupation of the site.

Work ceased on the 1963 sounding just before the end of the season when water from the nearby irrigation canal began to seep into the trench and conditions became too muddy for work to continue. Unfortunately, during 1964 when no excavation was undertaken on the site, the sounding filled with water and became a breeding ground for mosquitoes. Thus it was necessary to fill it in at the beginning of the 1965 season and to dig another sounding toward the center of the site which hopefully would not encounter the same seepage from the nearby canal.

Mellaart states that the floor of room X.8 occurred at a depth of approximately 1 m below the present plain level, and that an additional 4 m of occupation deposits were found below that. This indicates that the lowest level reached in the sounding lay ca. 5 m below the present level of the plain. On some sites this would not be surprising, but Cohen argues that the evidence of his palaeoecological research indicates that the site of Çatal Hüyük East was established on or near the present level of the plain (Cohen, 1970, p. 125). In addition, the usual depth of ground water in the Çumra area in the summer months varies between 1.5

and 1.75 m, and it never seems to be as low as 5 m or lower. Clearly the evidence of excavation here contradicts that from other sources, and Mellaart suggests that the inhabitants of the site might have dug a ditch around the settlement (Cohen, 1970, p. 125), and that the 1963 sounding was centered by chance in this ditch. While such a solution is possible, it seems somewhat unlikely, but further discussion is of little value until new evidence is available. The problem does have a direct bearing on the length of occupation of the site: if Cohen is correct and the site was founded at approximately the present plain level, the depth of deposit must approximate 17.5 m. If, however, occupation deposits occur all over the site area to a depth of at least 5 m below the present plain surface, then the total depth of deposit may be as much as 22.5 m or more. Such a total depth of deposit would also indicate that there still remain approximately 7 m of deposit below Level XII.<sup>7</sup> Although it is indeed dangerous to try to estimate chronology on the evidence of depth of deposit, such a total depth might well be taken to indicate a date for the beginning of the site of ca. 7000 B.C. or earlier.

As previously explained, the 1965 sounding was located further toward the center of the site, and no water problems were encountered. Substantial architecture was apparent in Level XII, but the sounding was suspended before the end of the season because of lack of manpower, at an elevation of approximately 2 m above the present plain level.<sup>8</sup> Despite some differences between the architecture of Levels XII-XI and of the later levels, no evidence was found of any break in the sequence; in fact, continuity seems to be a notable feature throughout the life of the East settlement.

Before turning to the architecture of the site, we must mention the notation system employed. The standard notation for any building or courtyard or artifact found therein consists of three parts.

The initial letter indicates the sector of the excavation area; the middle number in roman numerals indicates the building level; and the final number in arabic numerals indicates the room/house number. Thus F.V.1 indicates area F, Level V, house 1. Since Levels XII-VI have principally been found in area E, the area letter is omitted, and the buildings are numbered in order of discovery.

## 4

# The Architecture

Much information was obtained about the architecture of Çatal Hüyük in Levels VIII-II, but comparatively few buildings of Levels XII-IX and I-0 were excavated. Thus consideration of the development of the overall plan is hampered by a lack of evidence in the crucial early phases of the site, but available data do not indicate any radical change between the earliest buildings and those of later phases. In all levels, building plans are rectilinear and no evidence was found of circular construction. Regular use seems to have been made of party walls in the earliest levels (XII-XI), whereas double walls are usual in the succeeding phases. In the better known periods of the site (Levels VIII-II), houses and associated storerooms are built up against each other with abandoned houses and open areas serving as courtyards, refuse dumps, and probably lavatories. There is a general tendency toward a more open plan after Level VI, but some courtyards probably occurred in all phases. Within the excavated area, the architecture rises from southwest to northeast on top of the underlying earlier architectural remains. Only in the latest levels (III-I) are any spaces which resemble streets found between houses, and communication must have taken place across the rooftops, facilitated by ladders between the roofs at different elevations. Some

means must have been devised to admit daylight at least into the living rooms, but no evidence of windows was forthcoming from the excavation. Mellaart's suggestion of rows of windows set high up in the wall above the level of the roof of the adjacent structures is certainly feasible, but it cannot be proved.

Available evidence suggests that the architecture of Çatal Hüyük is divided into a number of major blocks, possibly with sizable open spaces between them, but it was not possible to delimit any particular block in its entirety. The major architectural unit of Level VI seems to have been separated, at least in part, from the southern architectural area by a 15-m-wide courtyard, but no evidence was found for very extensive open spaces. It is not known whether any provision was made for bringing animals into the settlement, but this would certainly not have been possible in the area excavated. The method of entry to the settlement is not clearly established. The Level-VI plan suggests that the west walls of the outermost row of buildings at the foot of the mound would have presented an unbroken line to someone approaching the site from the plain. No definite gate structures were located, but several possibilities were noted, such as courtyard number 39 on the plan in Figure 6.<sup>9</sup> It is unlikely that the main approach to the site consisted solely of ladders from ground level up to the roofs of the first row of buildings, and gaps at intervals in the outer wall must surely be postulated. The inherent defensive nature of such an architectural system is clear, but it is debatable whether defense against people, flood water, or other elements was desired (Mellaart, 1967, pp. 68-69; cf. Cohen, 1970, p. 124). It is possible that an additional separate defense wall existed beyond the western limit of the buildings, but excavation revealed no traces of such a structure; however, the limits of the excavation area and erosion of the architecture at the foot of the

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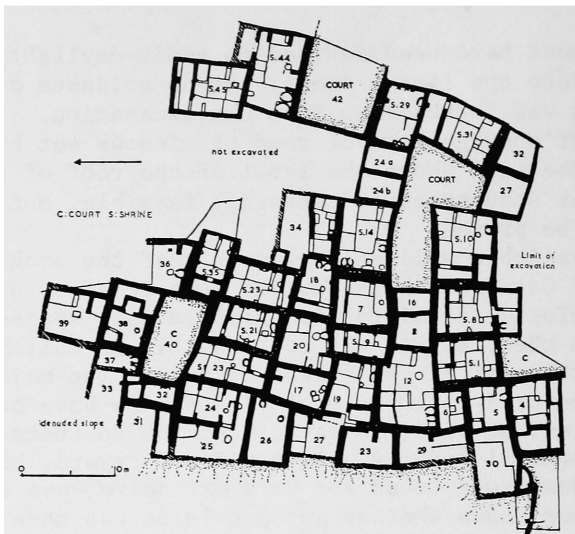


Figure 5. Plan of Level VII. Mellaart (1967) Fig. 10.

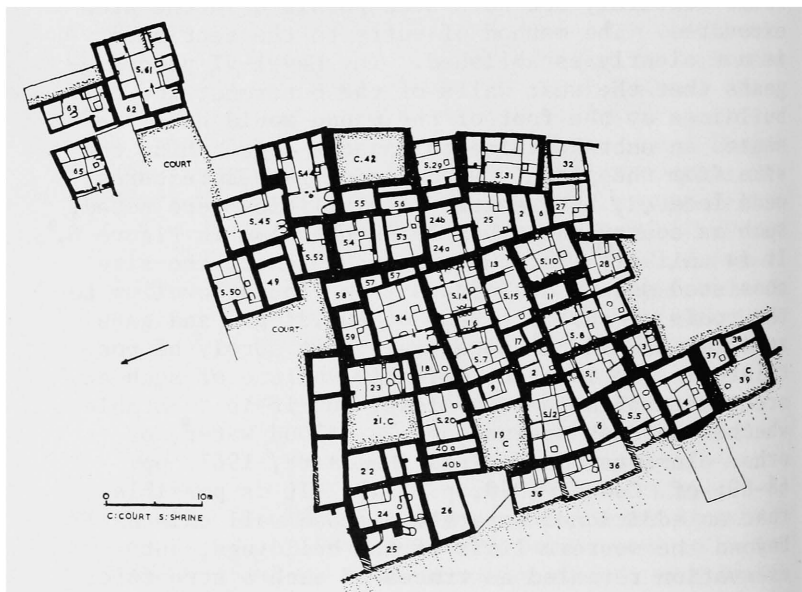


Figure 6. Plan of Level VI B. Mellaart (1967) Fig. 9.



mound make it impossible for us to gain a precise picture of the outer limit of the settlement on the west side of the site.

The houses at Çatal Hüyük are approximately rectangular in plan, although many are somewhat irregular, depending on the available space. An examination of the plan of Level VI B, for instance, reveals that true right angle corners are rare, and many walls are not straight. Although there appears to be an underlying concept of planned buildings in terraced rows from north to south and east to west, the plan clearly indicates that adherence to this idea was rather loose. The plan of a building often seems to be dictated by the shape of the immediately preceding structure in that position, and irregularities inevitably occurred during rebuilding. But the available Level-VIII plan does not suggest a greater degree of regularity in the earlier levels of the site (Mellaart, 1966 a, Figure 7). Dimensions of the houses average about  $6 \times 4.5$  m with an area of 25 to 27 m<sup>2</sup>; larger and smaller examples do occur ranging in area from 48 to 11.25 m<sup>2</sup>, and some houses are divided into separate units by partition walls of mud brick or lighter material. Long, narrow, approximately rectangular storerooms often adjoin houses, and entrance into them from the houses is by means of a small doorway, up to 77 cm in height, through which one would have had to crawl. Such doorways were, however, used only for communication between houses and storerooms, and never for access to the houses from an open area outside.<sup>10</sup>

Internal features in houses and storerooms vary considerably, especially in the earliest levels, but a certain degree of standardization is also apparent. The ladder leading up to the roof always seems to have been located against the south wall, in association with the hearths and ovens which were probably placed there to take advantage of the ventilation provided by the opening in the roof. Benches and lower platforms occur against

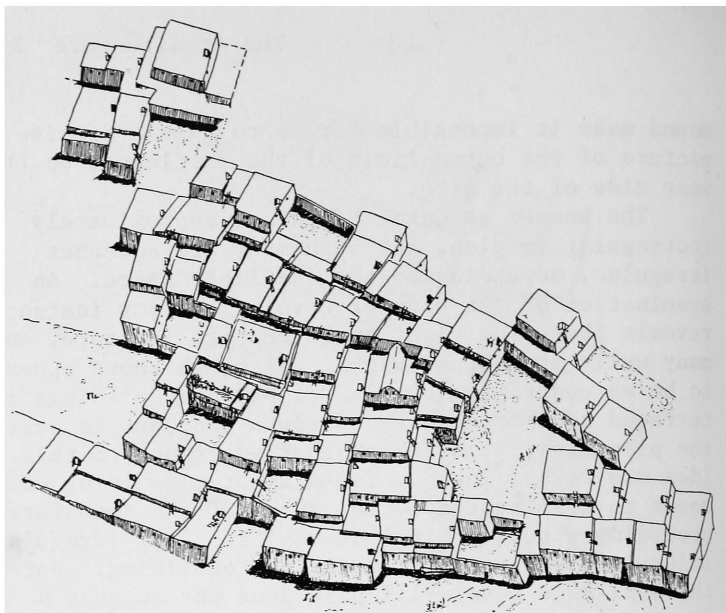


Figure 7. Reconstruction of buildings of VI B. Mellaart (1966 a) Fig. 5.

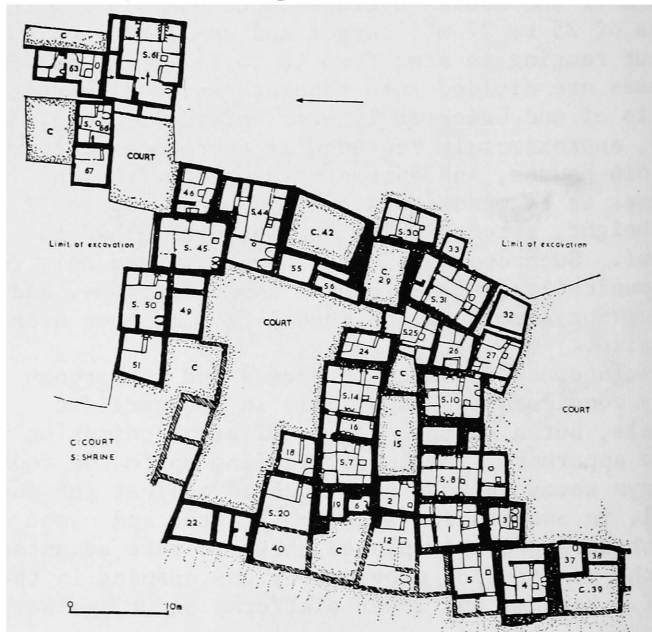


Figure 8. Plan of Level VI A. Mellaart (1967) Fig. 8.

the walls in all houses. The standard layout consists of a small square platform in the northeast corner, a longer platform to the south of it, and a narrow raised bench near the ladder on the east wall. Platforms frequently occur against the north and south walls, but the arrangement varies according to the direction of the main axis of the building. Benches may rise to a height of ca. 30 cm above the floor, and platforms to 10-20 cm. Each house usually contains a single rectangular or square hearth with raised edges, positioned close to the south wall; however, circular hearths are found in the lower levels. Ovens, often several in the same house, are characteristically oval, flat-topped, and partially set into the south wall. Other internal features found in some houses include small storage areas or cupboards recessed into the walls and querns sunk into the floor. Plastered bins for grain and boxes for tools are commonly found in the storerooms attached to the houses.

The buildings at Çatal Hüyük were constructed of sun-dried mud brick, and no use was made of stone. The bricks were formed in a mold, and usually included much straw;<sup>11</sup> they measure up to 95 cm in length and range in thickness from 8 to 10 cm. Mortar was frequently employed in thick layers between courses. Wooden beams are also a feature of the architecture; from the small amount of evidence available from the 1965 sounding, it seems that vertical posts, circular in section, were placed against the interior faces of some walls in Levels XII-XI (Mellaart, 1966 a, p. 168 and Figures 2 and 3), but the walls were not preserved to a sufficient height to indicate whether horizontal beams were also used. The building plans of Levels XII and XI are too fragmentary at present for us to be certain about the structural significance of these posts. In the following phases, extensive use was made of vertical and horizontal squared timbers as a framework for the whole building.<sup>12</sup> One or more vertical beams divides each wall into

several distinct units, which are further subdivided into individual panels by horizontal beams. In order to minimize the span of the roof, a form of corbeling was employed whereby each of the upper two panels of the wall was brought forward toward the center of the room as much as 23 cm, thus overhanging the panel below it. The middle wall panel measures at least twice the height of the upper or lower panel. The exceptional preservation of building E.VI.10 suggests an internal dimension of 3.3 m for the height of some rooms.<sup>13</sup> As Mellaart points out, this system of wooden beams and off-sets in the wall faces certainly reduced the span of the roof, but it also ensured the collapse of the structure when the beams rotted or caught fire. After Level VI the wood framework becomes structurally less significant, and little use was made of it in Level II construction.

It would seem that, at the height of its use in Level VI, the wooden framework could have stood by itself, and that the building was essentially a timber frame with mud brick filling between the beams. This suggests an earlier form of construction in which the filling between the major beams was of a lighter material than mud brick, possibly wooden planks, and thus indicative of an origin for the type outside, or on the edge of, the Konya Plain where timber was plentiful (Mellaart, 1967, pp. 63-64). A gradual change is certainly visible in the methods of building at Çatal Hüyük from Level X onward, but if it is suggested that the timber framework represents an earlier form of construction adapted for use in the Konya Plain, where reeds and mud provide the only readily available local building material, then ideally a more extensive use of timber might be expected in the buildings of Levels XII-XI. Our knowledge of these earliest levels on the site is deficient, however, and no conclusions can be drawn from the evidence. Little architectural use of wood is apparent on Anatolian sites which antedate Çatal Hüyük, but the

evidence is minimal, and much depends on the availability of local materials.<sup>14</sup> Alternatively, economic and other reasons can be suggested to account for the form of architecture and the decline in the use of wood as a building material.

The walls and floors of all buildings are plastered with the locally available ak toprak or white mud plaster which forms a suitable background for painting. Plaster layers can be counted individually; as many as 120 have been observed in some Level-VII buildings, and a thickness of 10 cm of plaster was recorded on a Level-VIII wall. The wooden beams are also covered in plaster, and, where buildings had not been burned, the plaster surrounds for the posts were frequently found, although the posts had completely rotted. The usual method of roofing was probably very similar to that employed nowadays in the Konya Plain villages; the major support consists of a number of cross beams resting on the tops of the walls with matting, lighter beams, and a thick mud coating on top. There is no evidence of an upper story, and it seems most likely that a single-story, flat-roofed building was usual. Although some of the modern village houses have angled roofs, such would not appear to have been the case at Çatal Hüyük where the roofs must have been used for communication between the various structures. Most buildings were entered from the roof, and marks are frequently found on the plaster of the south wall indicating the position of the ladder. Presumably the aperture in the roof which gave access to the ladder would have been covered by a lightly built bulkhead which would also have served to ventilate the room below. The construction of a typical Level-VI building is illustrated diagrammatically in Figure 9.

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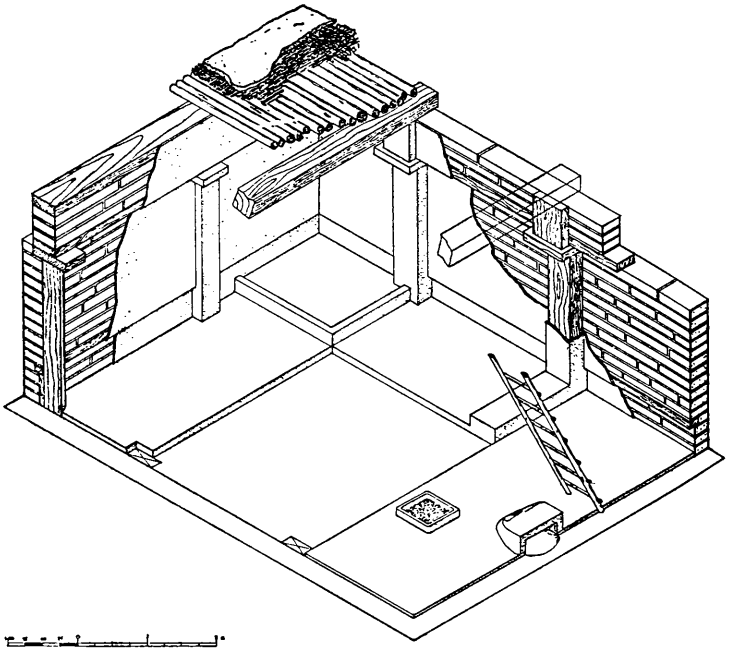


Figure 9. Reconstruction of typical Level-VI building. Mellaart (1964 a) Fig. 10.

## 5

# The Wall Paintings

The wall paintings at Çatal Hüyük East are among the earliest paintings yet found on man-made walls, and they are unique in many ways. The discovery of red-painted plaster floors at Hacilar (Aceramic), Jericho (PPNB), and Beidha had earlier indicated that true wall paintings might eventually be found in an early prehistoric context. Before the excavations at Çatal Hüyük were undertaken, knowledge of Near Eastern wall painting was limited to fragmentary evidence from prehistoric sites such as Teleilat Ghassul and Tell 'Uqair, and the more extensive later paintings of Mari and the Assyrian sites. Although wall painting must have been common in the Near East from an early period, little evidence of it has survived. Thus, for the first time, the excavations at Çatal Hüyük exposed a large number of comparatively well-preserved paintings which provide invaluable insight into the art and beliefs of this early period. Most recently, fragmentary wall paintings, with possible similarities to the Çatal Hüyük paintings, have been found at Umm Dabaghiyah to the west of Hatra in northern Iraq. These paintings may be contemporary with at least some of the levels at Çatal Hüyük East (Kirkbride, 1975). Much information about the Çatal Hüyük paintings has been published in various preliminary

reports, and we can only summarize the major aspects here, as well as include a few illustrations. Painted reliefs are discussed in Section 6.

While a number of the buildings at Çatal Hüyük were highly decorated at various times during their existence, we should point out that, for much of the time, the walls of a given building were unpainted. Several painted surfaces may be found on the same wall, but these are usually separated by many unpainted plaster layers. If Mellaart is correct in assuming that the houses were replastered annually, and that the length of occupation of a certain structure can be estimated by the number of plaster layers on its walls, it would follow that some buildings bore painted decoration on their walls for only one or two years within a life span of a century or more. The reasons for the painting of a wall and for the subsequent covering of the painting by numerous undecorated plaster layers are completely unknown.<sup>15</sup> It would be of the greatest interest to know how many buildings were decorated with wall paintings at any one time, but it is not possible to establish exact chronological synchronism among the various structures in a certain building level. It can be suggested that, after a certain time had elapsed, a particular painting would have been covered over in one building and the walls of another building painted. But the variety of subjects depicted in the wall paintings within the excavated area clearly indicates that the same subject was not merely repainted in another building of the same level. Only rarely were several paintings found with similar subject matter and layout, and these were never identical to each other. On the other hand, comparison of the paintings in the "Hunting Shrine" of Level III (A.III.1) with those of similar nature in F.V.1 indicates that some similar designs may occur in different building levels on the site.

Whatever the reason for the covering of the various paintings, it is clear that they were usually painted over while still in good condition.



Since the paintings were rarely discovered on the surface of the wall as it was uncovered, i.e., on the latest plaster layer, it was frequently necessary to remove plaster of varying thicknesses to reveal the painted layer. This overlying plaster thickness was as much as 2 cm or more in places, and the cleaning of the paintings with small dental knives was a very slow process. The undecorated plaster layers on top of the painting had to be laboriously chipped away, care always being taken that the knife did not cut through the painted surface. This procedure became more difficult when the exposed wall dried out in the summer heat and the plaster hardened. While some small paintings could be cleaned in a short time, several weeks were required to uncover a major wall painting in its entirety. Fortunately, little trouble was experienced with the paintings changing color after exposure to the air, although some fading did occur. The cleaning of the paintings was often exciting when enigmatic lines or areas of paint suddenly crystallized into intelligible forms; but imagine the feelings of the person cleaning a painting when he realizes that the decoration of an entire wall, on which he has just started work, consists solely of small circles!

The state of the walls added to the difficulties of cleaning and conservation. In some instances the plaster was heavily cracked, while in others it had buckled to the extent that one part of the painted surface had slipped down in front of the same surface below it.<sup>16</sup> Conservation measures were taken in the field in order to preserve the paintings for transport to the Ankara Museum where further treatment was applied. The conservation program continued after the end of the excavations in 1965, in order that more effective techniques for the preservation and display of such valuable material could be devised.<sup>17</sup>

The earliest evidence of wall painting at Çatal Hüyük consists of plaster fragments found in the 1963 sounding below a Level X building (X.8). Red-painted plaster was also found in structures of Levels XII-XI, but the state of preservation was extremely poor, and no evidence of pattern was found. The latest paintings were found in Level III, and this form of decoration was, therefore, employed in most, if not all, levels of the site. The majority of the paintings belong to Levels VIII-V, the most extensively excavated phases of the settlement. Tabulation of the subjects of the paintings by building level may suggest that certain scenes were only portrayed in certain levels, but a considerably larger number of paintings from all phases would be required to confirm this.<sup>18</sup>

The paint employed at Çatal Hüyük appears to have been derived mainly from minerals such as ochre, azurite, malachite, cinnabar, haematite(?), manganese, and galena,<sup>19</sup> all of which occur on the Anatolian Plateau. Red, including various shades of light to deep red and reddish-brown, is the most common color, but yellow, brown, black, grey, mauve, and blue also occur. The paintings were executed on a cream or white ground with a fine brush, the hair lines of which are sometimes clearly visible. Mellaart suggests that the plain red panels may have been painted with a cloth rather than a brush, and this also seems likely in the case of some of the large red animal figures. An isolated occurrence of the addition of mica to the paint is reported in Level VI. It seems probable that the paintings were executed on dry plaster, but no evidence is available concerning any temper which might have been used. Although the paintings are usually confined within the individual panels of a wall, there are a few notable exceptions, such as the vulture scene in E.VII.8, where the painting continues from one wall around the corner to the adjacent wall. In the most highly decorated

buildings, such as F.V.1, all four walls bear painting, but this is unusual, and the south wall was normally left undecorated.

Little information exists on the procedure adopted by the artist in the decoration of a building, but the evidence of a textile pattern on the walls of A.III.8 is of interest. The painting, which is comprised of red and white triangles and grey lines, seems to have been incomplete when the building went out of use. In some areas the composition is complete, but in others only the red triangles are finished. Clearly the red triangles were painted first, followed by other elements of the decoration (Mellaart, 1967, p. 154 and Mellaart, 1963 a, p. 48). No evidence was found on any painting of the use of a preliminary outline prior to the application of the paint.

The subjects of the wall paintings at Çatal Hüyük comprise geometric patterns, sometimes including symbols of unknown significance, animal and human figures (or a combination of both), and a possible landscape scene, in addition to the common plain red panels.<sup>20</sup> Polychrome decoration occurs frequently, but the colors are quite clearly not meant to be naturalistic. As Mellaart points out:

Prima facie acceptance of the colours as naturalistic would create a naive picture of a polychrome society of red or white women, red men with red or black hands pursuing blue cows and red and black bulls, which is anything but convincing. (Mellaart, 1967, p. 151.)

Often the reason for the use of a certain color (such as blue for a cow, which occurs once in VII.1) is far from obvious, and this illustrates the major problem faced in the interpretation of the various paintings. Almost no comparable material has ever been found, and analysis of the various compositions is inevitably highly subjective. Often the actual subject of the painting is clear, but the meaning

behind it can only be guessed. In other paintings it is not even clear what some of the symbols employed are designed to represent. Some of the paintings may be purely decorative in purpose, while the subject matter of others is strongly indicative of religious or philosophical beliefs.

Geometric patterns consist of parallel lines, triangles, crosses, four-pronged flowerlike symbols, horns, and various other motifs. Executed mainly in red, white, grey, and black, many of these designs bear close resemblance to Anatolian kilims (colorful woven mats available nowadays in Turkey), and interpretation of them as copies of woven textiles is most likely (Figure 10). It can be argued that the development of patterned textiles was inspired by such wall paintings, but the similarity of some of the borders of these compositions to stitching suggested to Mellaart that kilims provided the inspiration for the wall paintings rather than the reverse. Fragmentary textiles have been found at Çatal Hüyük (Helbaek, 1963; Burnham, 1965; and Ryder, 1965), and although these did not show any signs of colored patterns, the weaving of such mats or hangings at this period is not unlikely. It is also possible that some walls which were undecorated were originally covered with woven textiles of which no evidence has been preserved. Some small holes found in several walls may originally have served to hold supports for such hangings. Other geometric patterns include panels filled with red circles, in one case concentric, thin black sausage-like oval shapes in association with thin black circles (slings and slingstones?), various net patterns, and other designs of unknown significance.

Paintings featuring human beings, animals, birds, or a combination of these occur sporadically through most of the levels of the site. A naturalistic representation of a pair of black cranes occurs on the south wall of F.V.1, in association with paintings of a wild boar and a pair of onagers. Birds also occur in association with headless human beings in two macabre

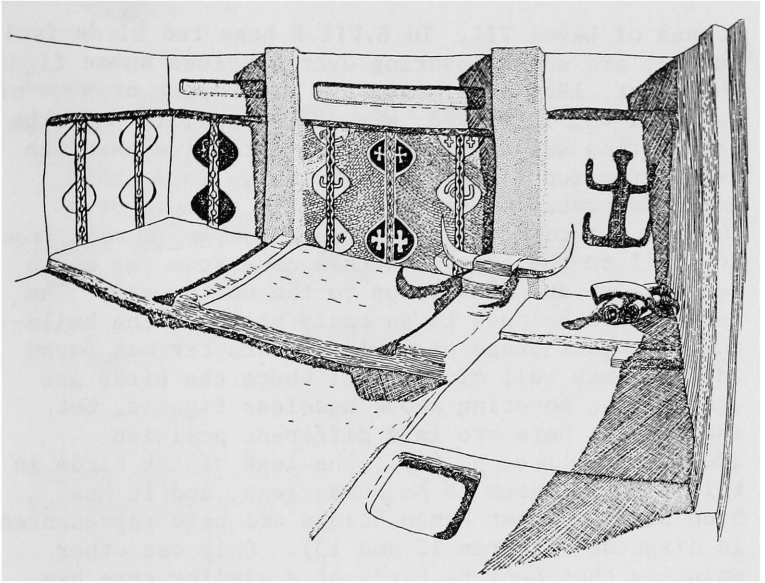


Figure 10. E.VI A.50 east wall. Mellaart (1964 a) Fig. 4.

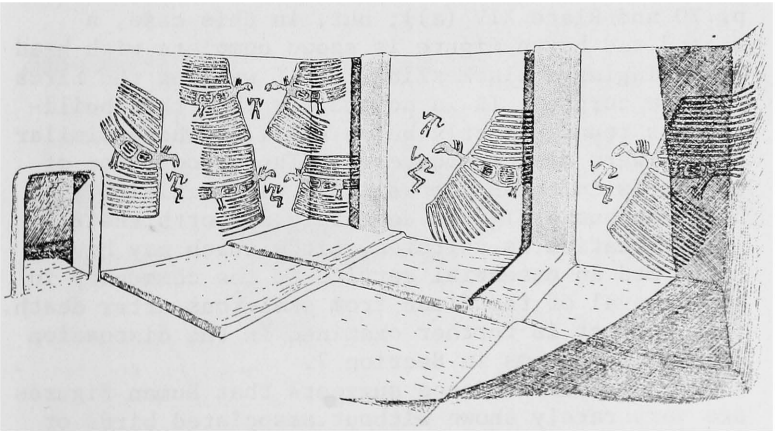


Figure 11. E.VII.8: "Vulture Shrine." Mellaart (1964 a) Fig. 20.

scenes of Level VII. In E.VII.8 huge red birds (vultures?) are shown hovering over headless human figures (Mellaart, 1964 a, p. 64); the upper part of some of the wall was destroyed, and it is possible that the composition was originally more extensive than the reconstruction (Figure 11) implies. This whole scene is probably the most notable example of a theme being carried around the corner of a room from one wall to the next — in this case from the south to the east and finally on to the north wall. The composition belongs to an early phase of the building. Another scene of similar character was found on the north wall of E.VII.21 where the birds are again shown hovering above headless figures, but the figures here are in a different position (Mellaart, 1964 a, p. 64). The legs of the birds in this painting seem to be human legs, and it has been surmised that human beings are here represented in disguise (Figures 12 and 13). Only one other painting that depicts birds of a similar type has been found. In E.VIII.8 a poorly preserved scene on the east wall shows two black birds with a headless red human figure in between (Mellaart, 1964 a, p. 70 and Plate XIV (a)); but, in this case, a second red human figure is shown complete with head and swinging a black sling, as if warding the birds off the corpse. It is noteworthy that this building was found directly below E.VII.8, where similar scenes were also encountered. The association of the birds in these compositions with definitely headless human figures certainly supports their identification as vultures, birds which may have performed an essential service to the community in the removal of the flesh from skeletons after death. This subject is further examined in the discussion of burial customs in Section 7.

Available evidence suggests that human figures are very rarely shown without associated birds or animals, but one quasi-human figure is shown on the east wall of E.VI A.50; painted in red, the figure has upraised arms and legs in a very similar

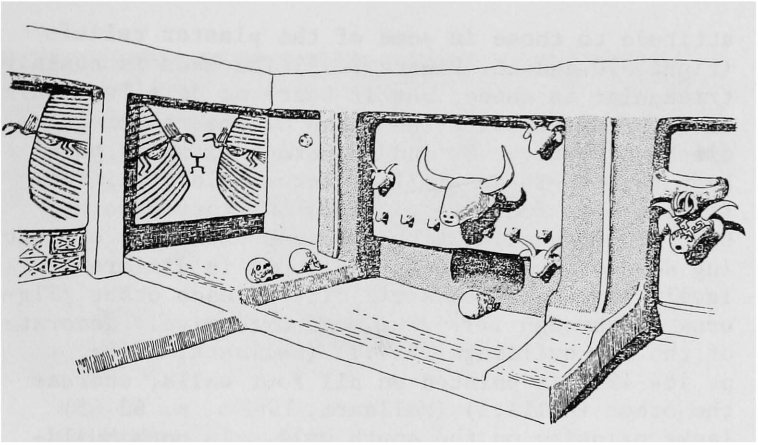


Figure 12. E.VII.21: east and part of north wall.  
Mellaart (1964 a) Fig. 22.

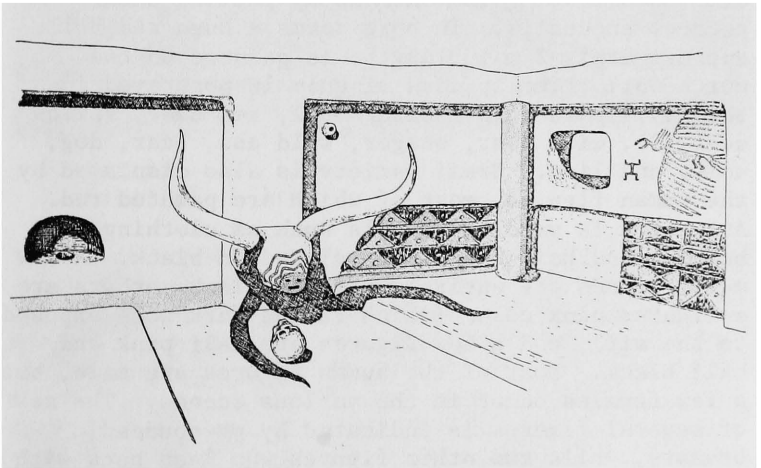


Figure 13. E.VII.21: parts of west and north walls.  
Mellaart (1964 a) Fig. 21.

attitude to those in some of the plaster reliefs (Figure 10 and cf. Figure 20.) The head is roughly triangular in shape, but it bears no details. This is unfortunate since the faces of the reliefs have all been disfigured, and no intact examples have been found. Three similar, but smaller, painted figures were found in VI A.66, but they have not been illustrated. Of the various paintings of hunting scenes, two compositions found in different levels bear a marked similarity to each other (Figures 14 through 17). The most extensively decorated of the two buildings (F.V.1) (Mellaart, 1966a, p. 184-191) is painted on all four walls, whereas the other (A.III.1) (Mellaart, 1962 a, p. 62-65) lacks painting on the south wall. In both buildings, decoration consists of several species of animals in association with human figures, many of which are shown wearing a form of spotted loin cloth. The general impression of the scenes in both cases is one of levity; some of the figures in A.III.1 seem to be dancing, while in the other building men are shown teasing the animals by pulling their tongues and tails! In both rooms a huge red bull, approximately 2 m in length, is painted on the north wall. The species of animals portrayed in the F.V.1 paintings include bull, red deer, fallow deer (?), wild boar, onager, wild ass, bear, dog, wolf, and lion. Great variety is also displayed by the human figures, most of which are painted red. Attention is paid to details such as clothing, beards, and hair which are painted in black. A few male figures are entirely painted black; others are a lighter pink color (which turned dark when exposed to the air), and a few figures are half pink and half black. Most of the human figures are male, but a few females occur in the various scenes. The sex of several figures is indicated by pronounced breasts, while two other figures who lean back with legs wide apart in a position for intercourse also seem to be female. It is interesting that emphasis was clearly placed on birth and death, but, with



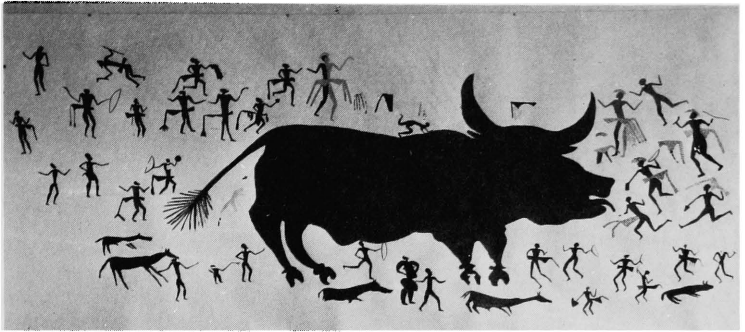


Figure 14. F.V.1: main section of north wall. Mellaart (1966 a) Pl. LIV:b.



Figure 15. F.V.1: section of west wall. Mellaart (1966 a) Pl. LII:b.

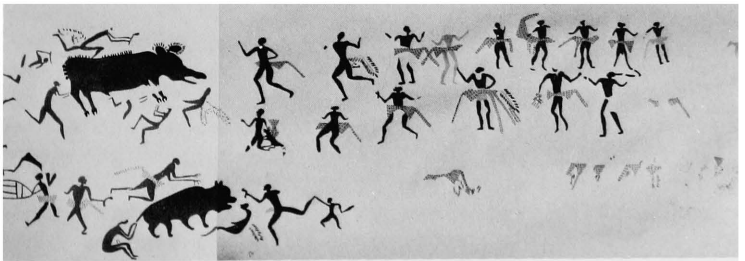


Figure 16. F.V.1: main section of east wall. Mellaart (1966 a) Pl. LXI:a.

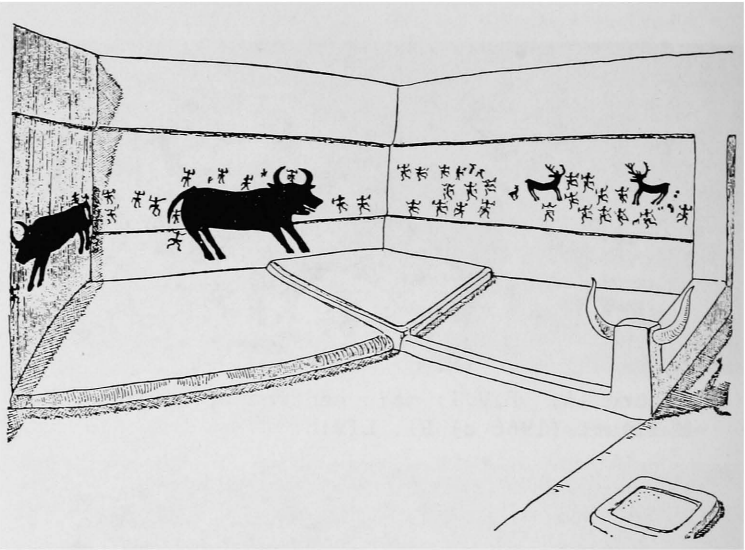


Figure 17. A.III.1: reconstruction. Mellaart (1967) Fig. 48.

the exception of these two figures, sexual scenes and portrayal of the male genitalia are noticeably absent. Hunting scenes include a fragmentary painting on the north wall of A.III.13,<sup>21</sup> which seems to show an actual hunt rather than the festivities connected with hunting. The scene, painted in red, shows a man armed with a bow and accompanied by a dog (?) pursuing a stag and a fawn. The arrow has just been released.

In addition to the human figures already discussed, several panels show human hands, by themselves or in association with netlike patterns. The hands usually have five fingers, but one painting in VI B.8 shows them with only four fingers. The colors employed are usually red and black, sometimes alternating, but a reserve technique of white hands on a red ground is also evidenced (VI B.8). The center of the hands is often unpainted, creating the impression that human hands were dipped in paint and then pressed on the walls. The size of the hands may be adult or juvenile; most are right hands, but some left hands occur. One painted footprint is also recorded. It has been suggested that the purpose of the painting of hands was to ward off evil, and it is interesting that red hand prints were still found on one of the village house doors in Küçükköy in 1965.

Two paintings may be considered architectural in nature: the first, which may show a lightly built charnel house, is considered in Section 7 in the discussion of burial customs; the second composition, found in VII.14, is without parallel on the site (Mellaart, 1964 a, pp. 52, 55; 1967, pp. 176-177). The main body of the painting is on the north wall, but it continues around the corner to end on the north end of the east wall of the room (Figures 18 and 19). The lower part of the scene consists of eighty or more dark red, approximately rectangular forms in rows close to each other; the middle of the painting consists of four rows of these forms superimposed on each other; at each end the number

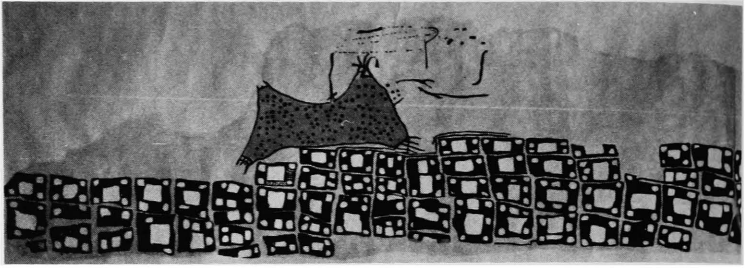


Figure 18. E.VII.14: copy of painting on north and east walls. Mellaart (1967) Pl. 59.

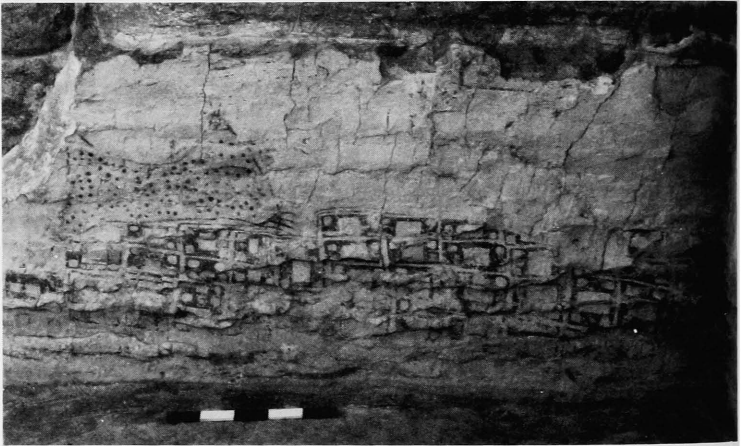


Figure 19. E.VII.14: original photograph of painting on north and east walls. Mellaart (1967) Pl. 60.

decreases to two or less. The suggestion that these forms represent houses, or house plans, is the most reasonable so far proposed, but the details cannot be correlated with actual house plans found on the site. The gradual increase in the number of rows toward the center of the composition does indeed give the impression of houses rising up toward the center of the site, just as they do in the excavated area. Immediately above these rows of "houses" is situated a twin-peaked formation painted in pink, with a red outline and covered with red dots. Above the right-hand peak red dots and lines are visible. If the lower section of the painting represents a schematic plan of the settlement of Çatal Hüyük, then the formation above it may be, as Mellaart suggests, the volcanic mountain Hasan Dağ in the course of eruption. While this is indeed a possible explanation, other double-peaked formations occur in the region. When Mellaart published the painting, he believed that Hasan Dağ was one of the sources of obsidian for Çatal Hüyük, and the mountain would thus have been of special significance to its inhabitants. But the various programs of analysis of obsidian that have been undertaken more recently suggest that Hasan Dağ never constituted a source of the material for the site. This point aside, an eruption of Hasan Dağ, which is known to have been an active volcano in the second millennium B.C., would have been an event worthy of record, and such an explanation fits the evidence of the painting.

The unique nature of the Çatal Hüyük wall paintings was emphasized at the beginning of this section. Very little comparable material exists on other sites, and it is thus not possible at the present time to trace the development of this art form in a comprehensive manner. The existence of painted plaster is attested at Hacilar and elsewhere in the Near East in the period immediately preceding the occupation of Çatal Hüyük, but no evidence has been found in Anatolia for the painting of such elaborate scenes as those just discussed. This may be due to

deficiencies in the presently available archaeological record, and paintings may exist at a site such as Aşıklı Hüyük. Ralph Solecki suggests that several animal figures painted in the interior of the cave, Kürtün İni, in the Suğla Gölü region, may be comparable in date to the Çatal Hüyük material, but the nature of these animal figures is not such as to invite close comparison, and their date is far from certain (Solecki, 1964). Other paintings have been found at Beldibi, ca. 25 km southwest of Antalya, in a rock shelter overlooking the Mediterranean, but here also the animals and symbols represented do not resemble the Çatal Hüyük types, and no close link can be postulated (Bostancı, 1959). Enver Bostancı suggests that the Beldibi paintings should be dated to phase C at the site on the evidence of painted pebbles found stratified in that layer, and a ninth millennium B.C. date may be correct. Earlier engravings on stone of animals at Beldibi (Bostancı, 1959, Plate II), and Öküzini<sup>22</sup> extend the known history of early art in Anatolia into the Upper Palaeolithic, and the wall paintings of Çatal Hüyük clearly represent a late stage in this sequence. Parallels have been noted by Mellaart between the art of Çatal Hüyük and some of the European Palaeolithic paintings. Thus, although we have sufficient evidence to indicate that a long development preceded the Çatal Hüyük paintings, we cannot at present fill the chronological and typological gaps between the known works of art in early Anatolia.

Little evidence has been forthcoming for painted plaster in the period following the occupation of Çatal Hüyük East. Many fragments of plaster painted in red with an "irrational Maeander" pattern were found in Level 2B at Can Hasan I (French, 1962, p. 33 and Plate II), but these were not found in situ on the wall, and the nature and original location of the whole composition are unknown. French suggests that perhaps only the area around doorways, windows, or other internal features was decorated with painted plaster, a practice still employed in the Konya Plain.

But it seems clear that, despite the problems of lack of preservation, the evidence from Can Hasan I, Erbaba Tepe, and Late Neolithic Hacilar, among other sites, indicates that the art of wall painting declined in the phases which followed the period of Çatal Hüyük East.

## 6

### Reliefs, Cutout Figures, and Other Features

Relief decoration occurs in many of the buildings at Çatal Hüyük, often in conjunction with wall paintings and other features. The main subjects portrayed are human figures (sometimes in association with animal heads), animal heads by themselves, complete animal figures, and rows of what seem to be human breasts.<sup>23</sup> A minority of the reliefs bear painted decoration. The representation of human figures in relief is known only from Levels VII and VI, but this distribution may be the result of the predominance of buildings of these levels excavated, rather than an actual absence of such figures in the earlier and later phases of the site. The art of relief decoration, at least in the form of animal heads, was practiced as early as Level X.

Seven examples of the most usual type of human figure were found on the east, north, or west walls of five separate buildings, and the presence of others is suspected. Several of those found are in fair condition, with the exception of the face, hands and feet which appear to have been intentionally mutilated, and they provide good evidence for the original nature of the figures. The extremities of the bodies are heavily damaged even in the best-preserved figures, whereas most of the body is in excellent condition. The fact that every relief human figure is thus damaged indicates that this is



more than coincidence. The standard type of figure consists of an approximately parallel-sided body, sometimes with a distinct swelling around the stomach, with arms and legs which branch out at right angles to the body and turn up at the ends. The body is formed of plaster molded on reeds, and it may be approximately 1 m in height. One figure (on the east wall of VII.23) was extensively painted with orange, red, and black lines, probably representing a netlike dress (Figure 20).<sup>24</sup> The navel is here accentuated by heavy concentric red circles. The plaster reliefs, like the wall paintings, were frequently replastered, and a child's red hand was found painted on an otherwise unpainted later plaster layer of the same figure. Apart from the emphasizing of the stomach, no indication is given of the sex of the figures. There are no clearly male examples,<sup>25</sup> and Mellaart interprets these figures as goddesses in a birth-giving position. In some, but not all, cases the human figure is modeled immediately above a plaster bull's head, suggesting the birth of such an animal from the female figure.

Of the seven figures already discussed, three represent the only relief human figures in a particular building, while four others occur in pairs in two separate buildings.<sup>26</sup> Where a pair of figures occurs, the two reliefs are placed side by side on the same wall. The building VII.31 and the reliefs it contained are unusual in a number of ways. Single relief figures were found on the west, south, and east walls and, since most of the central sections of the east and north walls were destroyed, there may originally have been more than three figures in the building. Reliefs, like wall paintings, were unusual on the south wall. The west wall was divided into two sections by a central vertical wooden post (Figure 21); in the northern section a relief figure is shown in association with, but not above, a plaster bull's head. The large ears shown in the reconstruction, which

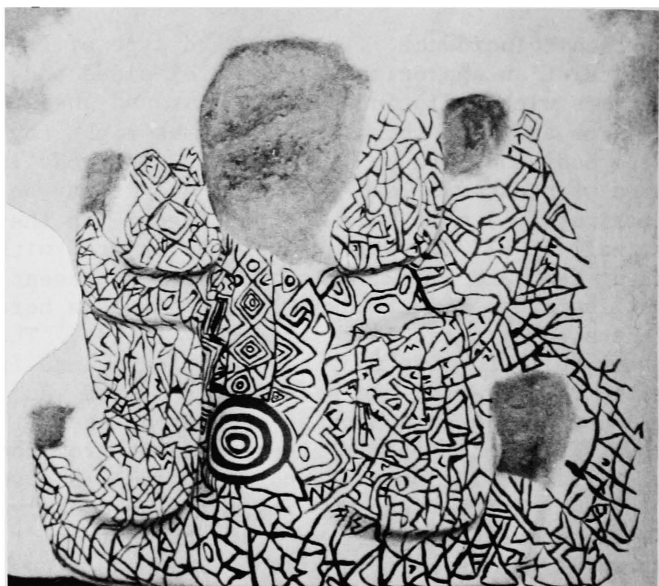


Figure 20. E.VII.23: copy of painted relief figure.  
Mellaart (1964 a) Pl. XIII:b.

give the figure a "teddy bear" appearance, are uncertain. Features were preserved in the wall plaster on each side of the head, but their interpretation is problematic. Several small holes above the head suggest that something was originally fixed above, or over, the figure. The face is heavily damaged, and the holes in the ends of the arms and legs suggest that the hands and feet were made separately; no trace of them was found. The plaster animal heads shown on the central post and in the southern section of the west wall have been restored. The molded horns were found on the wall, but the heads had been removed leaving only the scar where they had been attached to the plaster. On the south wall, a smaller figure, similar in general type to the seven discussed earlier, has similarly damaged face, hands, and feet. The figure on the south end of the east wall has legs and arms stretched straight out from the body, without upturned hands or feet. A relief feature running horizontally from the back of the head is suggestive of hair flowing behind a rapidly moving figure (Figure 23). Interpretation of the meaning of the reliefs in this building is hampered by the destruction of the main central panel of the east wall. The excavator suggests that the preserved reliefs portray the deities of the time: the "mother-goddess" on the west wall, with her two(?) daughters on the south and east walls. Her husband would be symbolized by the bulls' heads on the west wall.

One other relief composition is worthy of special mention. In the central section of the west wall of VI B.10 (Figure 24), three superimposed life-sized bulls' heads, incorporating actual aurochs' horn cores, were modeled in plaster near the floor. Above them was a small ram's head. The upper part of the composition is considerably restored and only the lower section was found in situ. Mellaart here postulates a human figure of the characteristic type with upturned hands and feet, the height

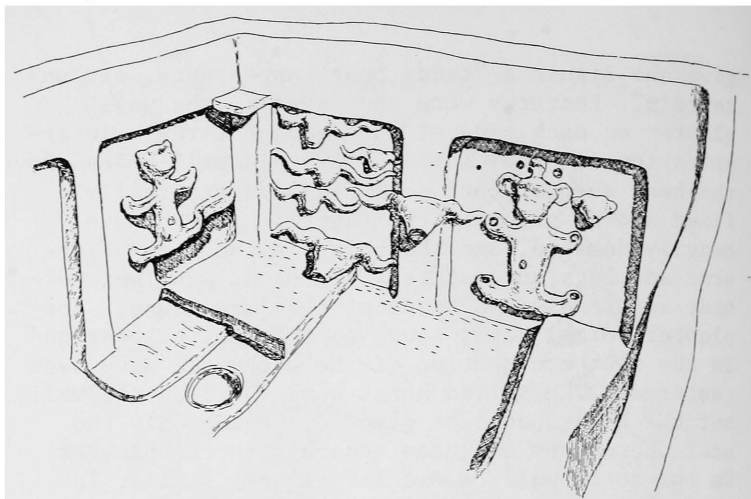


Figure 21. E.VII.31: restoration of west and part of south walls. Mellaart (1964 a) Fig. 7.



Figure 22. E.VII.31: detail of west wall. Mellaart (1964 a) Pl. IV:b.

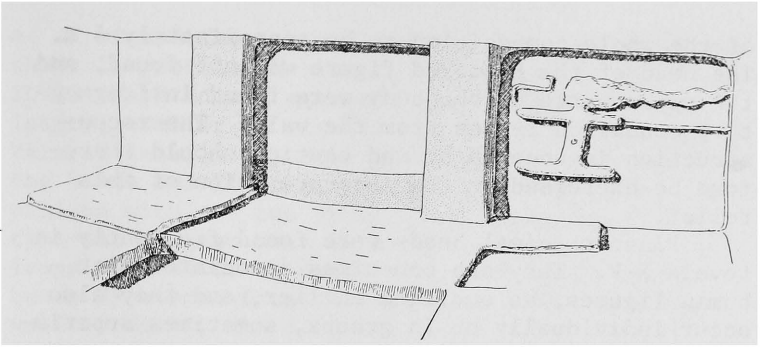


Figure 23. E.VII.31: restoration of east wall. Mellaart (1964 a) Fig. 8.

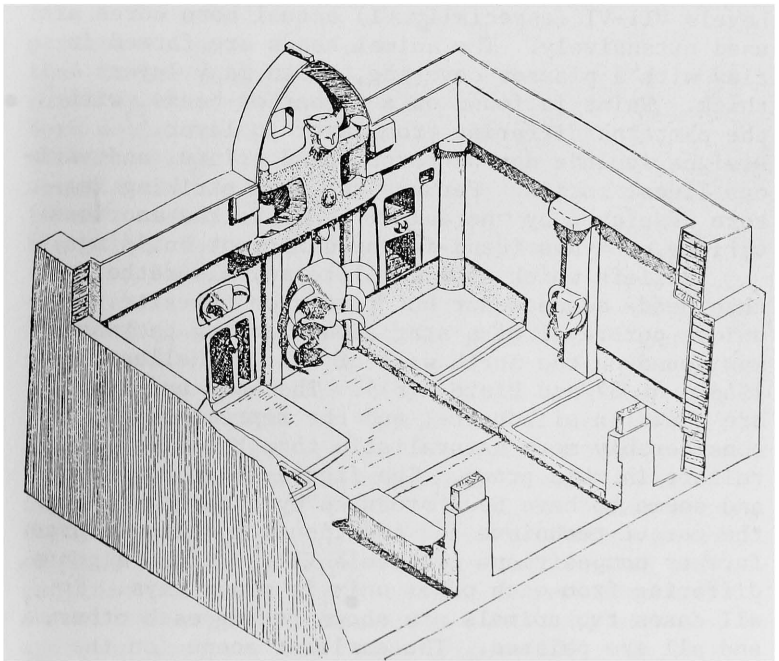


Figure 24. E.VI B.10: reconstruction. Mellaart (1964 a) Fig. 9.

of the whole composition to be approximately 4 m. The head of the restored figure was not found, and the upper parts of the body were found in fragmentary condition fallen from the wall. The reconstruction is uncertain, and caution should therefore be exercised in the interpretation of this relief.

Plaster animal heads were found frequently in Levels X-V. They are sometimes associated with human figures, as outlined earlier, and they also occur individually or in groups, sometimes superimposed at varying elevations and positions, on any wall of a building. The bull is the most commonly represented animal, but heads of rams and stags also occur. In the earlier levels the horns are usually formed of clay and plaster, while in Levels VII-VI (especially VI) actual horn cores are used extensively. The animal heads are formed in clay with a plaster covering, often many layers thick. Paint is found on a number of heads, with the patterns differing from layer to layer.<sup>27</sup> Designs include net patterns, hand prints, and various linear motifs. Perhaps the most striking feature displayed by the animal heads is the enormous variety of types found in the different buildings.

Reliefs which show complete animals rather than heads alone occur but rarely on the site. A unique portrayal of a stag shown looking backwards was found on the north wall of VII.10 (Mellaart, 1964 a, p. 57 and Plate X(b)). The body and head are shown in silhouette, and the representation is considerably more naturalistic than the other reliefs in this group. The figure is in low relief and seems to have been produced by a combination of the cutout technique and additional modeling. Three further compositions of Levels VIII-VI form a group, differing from each other only in minor ways. In all cases two animals are shown facing each other, and all are painted. The earliest scene (on the west wall of VIII.27) shows two animals facing each other with the head and front legs of each portrayed

as if viewed from above, and the tail and back legs shown in profile (Mellaart, 1966 a, p. 180 and Plate XLV). Each animal measures approximately 1 m in length, similar in size to the two later examples. Painted details are here restricted to red spots on the heads and lines around the legs and tails. Comparison with the two other known examples of this type may suggest that the animals represented are leopards, but it is noteworthy that no leopard bones have been found on the site. On the north wall of VI.44, and directly below it in exactly the same position in VII.44,<sup>28</sup> were found the other two compositions (Figures 25 through 30). In both cases, the two animals are shown facing each other with their heads pointing out to the center of the room, but their bodies are shown entirely in profile. The modeling is generally rather crude, perhaps slightly more naturalistic in Level VII than in Level VI. The position of the tails which curve up over their backs seems to be the same in both compositions, but the north wall of VII.44 was destroyed immediately above the relief, and some details are unclear. Comparison of the two reliefs is made more difficult by the extensive damage visible on the upper parts of the heads of the Level-VII relief. However, the similarity between the two reliefs is very striking, and evidence of continuity from one level to the next is increased by their relative locations, the one exactly above the other.

The painted decoration of both reliefs changes from layer to layer of plaster. The Level-VII composition was painted at least seven times, and the painted layers are separated by undecorated coats of plaster. The Level-VI relief bears about forty painted layers. While the decorative scheme of both reliefs is generally similar, one of the earliest phases of the Level-VII scene shows both animals covered with black lip patterns, with red spots on the paws and heads (Figure 27). In later phases this relief is decorated with rosette patterns—black with a white area left in reserve.

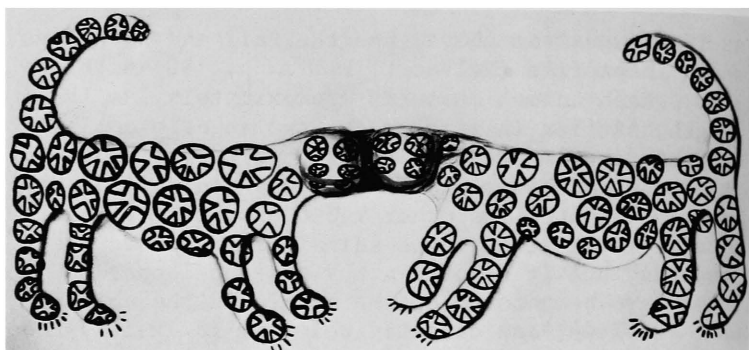


Figure 25

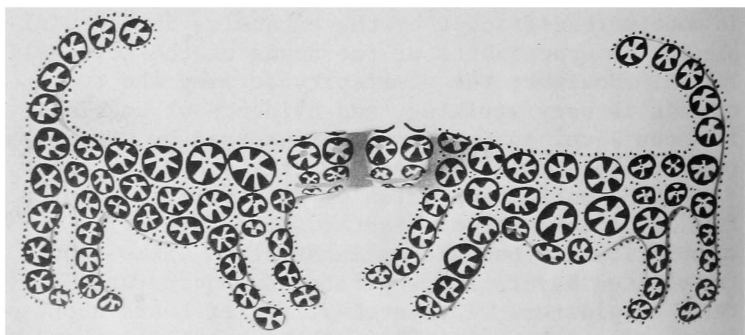


Figure 26

E.VII.44: painted relief on north wall: different phases. Mellaart (1966 a) Pl. XXXVIII.



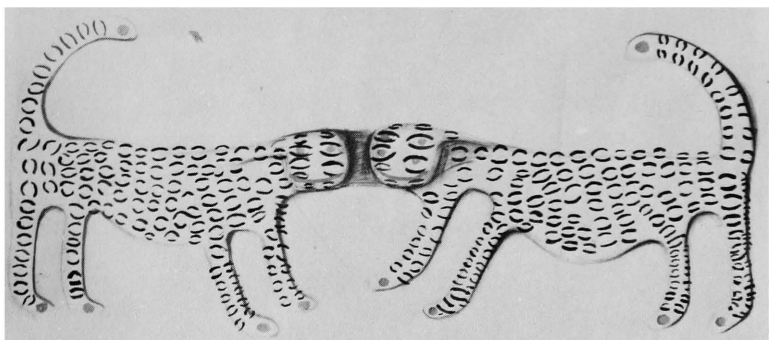


Figure 27. E.VII.44: another phase of painted relief on north wall (see facing page). Mellaart (1966 a) Pl. XXXVIII.

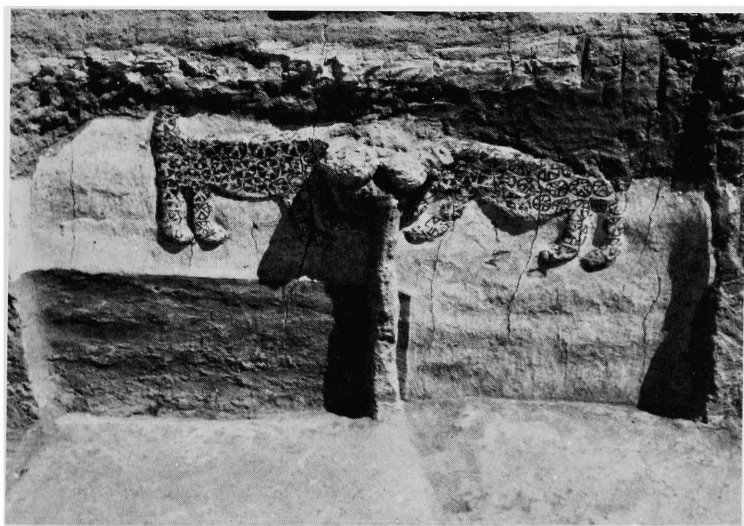


Figure 28. E.VII.44: north wall: photograph of original relief. Mellaart (1966 a) Pl. XXXIX:a.



Figure 29. E.VI.44: north wall: original relief.  
Mellaart (1964 a) Pl. II:a.



Figure 30. E.VI.44: north wall: copy of relief.  
Mellaart (1964 a) Pl. II:c.

Such decoration is common on the animals of Level VI. Below the eastern animal of the Level-VII group, two levels of painting were uncovered, similar in type to paintings found in the alcove on the east wall of the same building, which included ibex figures and what appears to be a stylized tree. A further single animal relief figure was found at the southern end of the east wall, with painted decoration very similar to those on the north wall. The east wall of the Level-VI building had been destroyed, and it is possible that VI.44 may have contained more reliefs than the one preserved panel on the north wall.

One further form of relief decoration is found in some buildings of Levels VII-VI. Circular plaster moldings, found either singly, in pairs, or in parallel rows, have been interpreted as human breasts (Figure 31, on the central panel of the east wall below three bulls' heads). Where multiple moldings occur, the number in the individual rows may be unequal. These features occur predominantly on the east walls of buildings, in association with animal heads or by themselves. While some are modeled purely in plaster, others are formed on top of the jaw bones of wild boar or the skulls of vultures, foxes, and weasels, possibly symbolizing both the beginning and end of life. In some cases the ends of the jaws of wild boar are left projecting from the nipple, and other moldings have a small central hole.

Yet another form of decoration found in a number of buildings at Çatal Hüyük consists of the silhouettes of animal heads or complete animal figures cut into the layers of wall plaster where the plaster was thick enough. This type of ornamentation first occurs in Level IX and is frequent in Levels VII and VI. The cutout technique is also combined with partial modeling of features such as horns. The bull is again the most commonly represented animal, but wild boar occur, and a feline head was found in Level IX (IX.8). These cutout

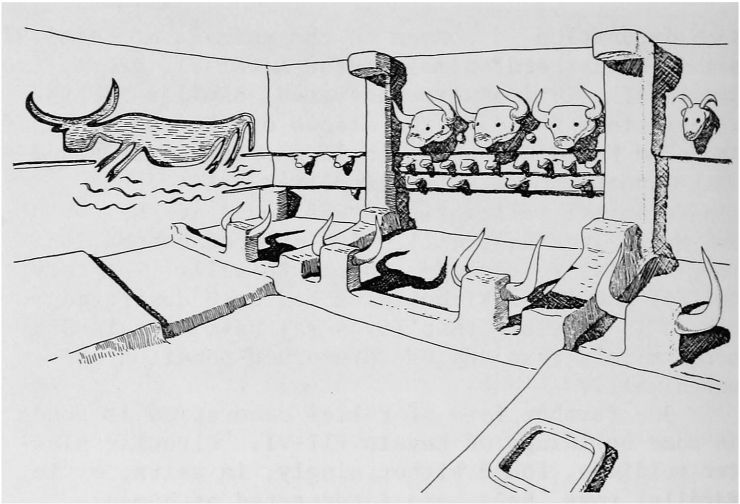


Figure 31. E.VI.8: east and part of north walls. Mellaart (1963 a) Fig. 9.

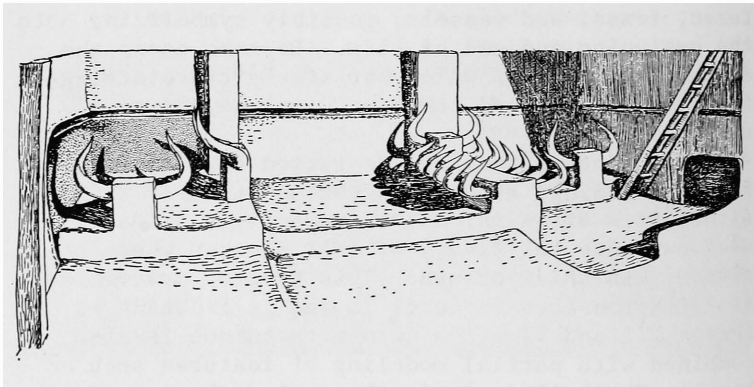


Figure 32. VI.61: reconstruction. Mellaart (1963 a) Fig. 4.

figures are usually placed on the north, east or west walls of buildings. Painting appears to be limited to complete bull's figures that are colored red or black (Figure 31), but unfortunately the only examples found of this type were damaged, since the uppermost part of the animal was missing. The forms of some cutout figures may be interpreted without difficulty, but in other cases rather more imagination is required for the recognition of the suggested animal.

The complexity of the features in some of the Çatal Hüyük buildings is further increased by the use of horned pillars and benches. The latter occur only in Level VI, but the former are found in Levels VII-II. Benches occur near the south end of most houses, set against the east wall. In a few cases opposing pairs of actual bulls' horns are mounted on each side of the bench (Figure 32). In the simplest form only one pair of horns was used, placed near the wall; but in more elaborate types, as many as seven pairs of horns are mounted along the whole length of the bench. Horned pillars occur much more frequently; they usually consist of a rectangular mud brick pillar, height ca. 50 cm, with a pair of bull's horns set in the top. These pillars, termed "bull-pillars" or "bucrania" by Mellaart, occur singly and in groups, usually along the edges of the platforms adjoining the east or, less frequently, the north wall of a building. A few horned pillars were found in structures which Mellaart classifies as private houses rather than shrines, but the horned benches and all other forms of relief decoration are confined to buildings classified as shrines. The cumulative effect of some of the various forms of decoration may be seen in Figure 31.

## Burial Customs, Demography, and Pathology

Excavations to date reveal comparatively little information about burial customs and the physical nature of the inhabitants of earlier prehistoric Near and Middle Eastern sites. The practice of burying the dead below the house floors at Çatal Hüyük resulted in the recovery of numerous skeletons in varying states of preservation, thus providing an invaluable addition to the material already available. A complete report on the burials at Çatal Hüyük has not yet been published; Mellaart summarized the material from the first three seasons in his general book on the site (Mellaart, 1967, Chapter IX), and further information is contained in various preliminary reports. Detailed description of some of the burials is not yet available, and there is no complete building-by-building list of burials with their associated finds. Physical anthropological studies of the skeletal remains were undertaken by Lawrence Angel, Enver Bostancı, and Denise Ferembach, but only two brief reports have so far appeared in print (Angel, 1971, and Ferembach, 1972). The following discussion is therefore not complete, and treatment of some aspects must await the publication of further data.

Approximately 480 burials, complete or partial, belonging to Levels XI-I, were excavated during the four seasons. All were found below house floors,

and none occurred below storerooms or courtyards. Although no evidence was found for an extramural cemetery, excavations were confined to the mound, and the possibility of a cemetery area outside it cannot be ruled out. The practice of intramural burial is of interest for the contrast that it provides to other early prehistoric Anatolian sites.<sup>29</sup> But the evidence is frequently deficient, and it is not yet possible to trace adequately the development of Anatolian burial customs during the eighth to sixth millennia B.C. Although the earliest levels at Çatal Hüyük itself are poorly known, there seems to be no major change in burial customs between Levels XI and I. Possible differences between the earlier and later levels, such as the increase in other burials in the earlier phases, may be more apparent than real.

Burials are found within most of the buildings; however, there are several exceptional cases where none were found at all (A.III.8 and A.II.1). The dead were usually placed under the platforms at a depth of approximately 60 cm, but in Level VI a lack of space below the platforms, due to the quantity of earlier burials, occasionally resulted in burials in oval graves under the central portion of the building. There seems to have been no rigid rule concerning the orientation and attitude of the bodies. Most skeletons were placed with head toward the center of the room and feet near the wall, but the opposite also occurs. They were usually contracted lying on the left side, but others were found extended on their backs, and a few burials in Levels VIII-VII were found in a vertical sitting position. In some cases later burials had considerably disturbed earlier interments, and skeletons were frequently found in rather chaotic heaps. Single burials rarely occurred under a building, and Mellaart states that the average per room was about eight. The maximum number of burials reported below any one room was forty-two (below VII.31) (Angel, 1971, p. 79), but a large number of burials was not



Figure 33. Burials below E.VI B.34. Mellaart (1964 a) Pl. XXII:a.



Figure 34. Burials below VI.61. Mellaart (1964 a) Pl. XXIII:b.



always found below a building which showed evidence of lengthy occupation. In general, the number of burials found is lower than would be expected if the buildings were permanently inhabited, and if all members of the family living in that particular building were buried underneath it.

Many burials on the site provide clear evidence of secondary burial—burial after the flesh had at least partially decomposed. While some skeletons were found intact, others were missing various bones. A piece of textile was found inside one skull (below VI.1), and a number of skeletons bear ocher or paint that was probably applied after the flesh had decayed. The tightly flexed position of the bodies can also be interpreted as an indication of this same process. However, the occurrence of anatomically intact skeletons clearly indicates that the process of decomposition had not, in these instances, progressed very far at the time of burial, if, in fact, they were not actually primary burials. No proven examples of primary burials were encountered on the site. If burial took place only at a fixed time once a year, as suggested by Mellaart, then we would expect that some bodies would be totally devoid of flesh, while those of others, who had died closer to that time, would still retain most or all of their flesh. If, however, bodies were only interred when completely stripped of flesh, inordinate care must have been taken to lay out the bones in their correct anatomical position, and this seems unlikely. The details of the burial process are, of course, unknown, but some relevant information may be contained in various wall paintings.<sup>30</sup> The scenes of vultures(?) in association with headless human figures may illustrate the removal of the flesh after death. If such a procedure was usually adopted, the existence of a special area well outside the site must be postulated for this purpose. In this context Mellaart has drawn attention to a wall painting found on the north wall of VI B.1 which may portray a lightly built structure with schematic

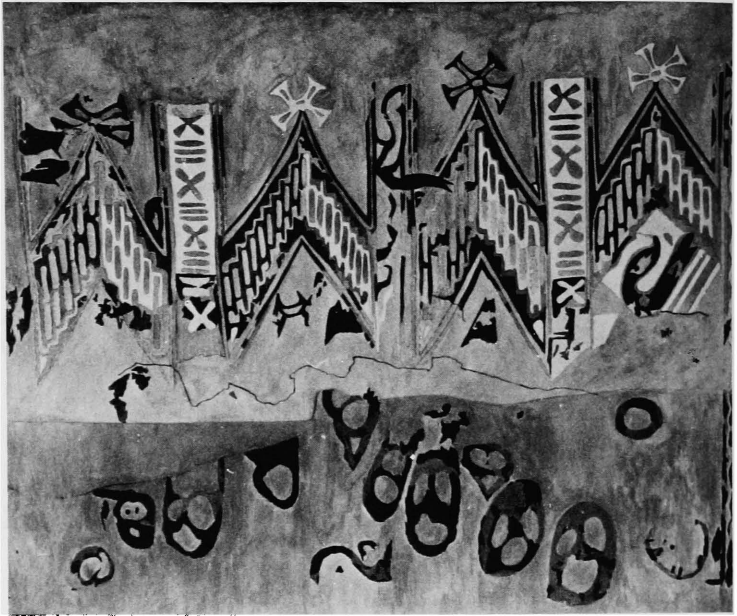


Figure 35. VI B.1: north wall: "charnel house" painting. Mellaart (1967) Pl. 8.

representations of human skulls below it (Figure 35). The building, painted in red and white, consists of four "gables" with vertical features at each end and between each gable. The gables bear netlike patterns similar to some of the designs interpreted as kilims. The whole may represent a charnel house of reeds and matting, in which the dead were laid out for excarnation. Needless to say, such an explanation is extremely hypothetical, and it is very unlikely that excavation will ever produce any proof. If the wall painting seems to indicate that the dead were laid out collectively for excarnation at Çatal Hüyük, an interesting parallel exists with Crow Indian burial customs where individual corpses were laid out in the open air on a four-footed wooden platform in association with a conical skin-covered tent (tipi). The body and platform were allowed to rot, and, at least in some cases, the remains were finally covered with a pile of stones (Lowie, 1956, p. 67 and plates opposite pp. 66-67).

Although the majority of burials at Çatal Hüyük were not provided with any grave goods, many objects were found in association with a number of graves, and sufficient evidence exists to show the categories of artifacts that were buried with the dead. The exceptional state of preservation of some burials below the Level-VI burned buildings also provides information on perishable gifts and materials which may have been commonly used, but of which little evidence has survived. Some, if not all, of the bodies were wrapped in skins or textiles, placed in baskets, or laid on mats. Some types of grave goods occur only in burials of a certain sex, but the use of others was unrestricted. Male burials were accompanied by weapons (stone mace heads, obsidian lance or spear heads, flint daggers with wood or bone handles), various flint and obsidian tools, clay seals, occasional copper finger rings, bone belt hooks and eyes, and a few beads and pendants. Female burial gifts consisted mainly of jewelry and items used for personal adornment

(numerous beads and pendants, copper or bone finger rings, cosmetic palettes for grinding paint, and obsidian mirrors), together with various bone and stone tools. Where the body of a child accompanied that of a woman, additional goods included bone spoons, spatulas, and ladles. One exception was a flint dagger which accompanied the ocher burial of a woman and child in VIII.1.<sup>31</sup> Wooden vessels, baskets, and various forms of food occurred in burials of both sexes. Pottery and figurines were never found as grave goods.

Of the total number of burials found on the site, twenty-one bore evidence of red ocher on the skulls or skulls and bodies.<sup>32</sup> These were found in all levels of the site between IX and III, with the maximum number (seven) occurring in Level VII. Sixteen of the twenty-one occurred in Levels IX-VI, and the practice of using red ocher may thus have been more common in the earlier phases of the site. Seventeen of the ocher burials were found in buildings designated by Mellaart as "shrines," while the other four were found under destroyed buildings, the original nature of which is unknown. Mellaart notes that most of the red ocher burials were female, but Angel's report clearly indicates that at least some males were treated in this manner. Red ocher was found on burials of adults, children, and one infant. Grave goods associated with ocher burials were never particularly rich, but some gifts usually occurred. Red ocher sometimes covered the entire skeleton, but it was sometimes restricted to the skull, or even to a band on the skull. One female ocher burial below VII.10 was provided with cowrie shells for eyes, a close parallel to a plastered skull with cowrie-shell eyes found at Jericho in the PPNB phase (Kenyon, 1970, p. 52). No evidence was found at Çatal Hüyük for the plastering of skulls, such as is known from Jericho PPNB (Kenyon, 1970, p. 52), Ramad I (de Contenson, 1971, p. 281), and Beisamoun (Lechevallier, 1973, p. 107 and Plate 24). Ocher burials have been reported from several earlier

prehistoric Near Eastern sites, and it may become apparent when more information is available from other sites, that this was a fairly common practice.<sup>33</sup> At Çatal Hüyük, the small number of burials treated in this way is notable in contrast to the total number of the excavated skeletons, but we do not know who qualified for such burial. Several other burials are of special interest; a mud brick which contained the bones of an infant stained with ocher and wrapped in cloth was found high in the wall of VI A.14. No other examples of this are known. Two other burials found below VIII.31 seem to have been put in place before the erection of the building above them. One adult male, age approximately 21,<sup>34</sup> was found wrapped in fiber in a vertical sitting position. The body was disarticulated, and red ocher had been applied in stripes on the skull and around the neck. Enveloped in the fiber around the burial were many skulls and long bones (but no others) of mice and one shrew. Mellaart states that there is no possibility that these were intrusive, and no parallel for such a custom was found elsewhere on the site. A second burial found below VIII.31 (which was an unusual building in a number of ways) was that of a small girl,<sup>35</sup> partly stained with cinnabar, buried in a basket, and accompanied by an unusually large amount of jewelry. In addition to red ocher and cinnabar, green paint was found on three skeletons of Levels VII-VI (male and female), blue paint was found on the lower part of the skull and neck on ten skeletons of the same levels (also male and female), and grey paint was found on skeletal material of Level V.

The variation in the number of burials associated with different buildings was mentioned earlier; while the total number of burials is generally below that which might be expected, some buildings are exceptional for their very small number of burials, and others because of a total lack of burials, or a lack under certain platforms. Mellaart postulates, on the evidence of preliminary

examination of the skeletal material found under the platforms, that the small northeast corner platform of a building was the burial place of males, whereas the larger platform to the south of it was reserved for the females of the house. Children were buried either with the females or under the remaining platforms. If, as seems apparent, many of the buildings at Çatal Hüyük cannot be considered ordinary private dwellings, then we may surmise that only special people would have been buried under some of the structures. We should not, therefore, expect a full complement of burials here such as would be found if all members of a certain family were buried below their own house. Although it is already clear that some unusual special traits pervade the whole population,<sup>36</sup> substantiation of any family relationship which might exist between the various burials found under any particular building may be forthcoming from further study. No burials at all were found under A.III.8 (decorated with a "kilim" pattern) or A.II.1 (decorated with a red-plastered hearth and floor but no wall paintings). As we have already said, VIII.31 should also be included here since no interments appear to have been made after the erection of the building. No explanation can be offered for the lack of burials under these buildings.

We might expect that burials found under structures (such as VII.8 and VII.21) decorated with wall paintings of vultures(?) and headless men—paintings clearly associated with death—would be unusual, but possible correlation between the decoration of certain buildings and the burials under them must await more detailed publication of the skeletal material. The burials below VII.8 are stated to be intact, but no information is available about those below VII.21 in which four separate skulls without associated skeletons were found on the platforms. Two buildings (A.III.1 and F.V.1) are exceptional because no bodies were found under their northeast ("male") corner platforms. The

wall paintings in both buildings consist of animals in association with various human figures, suggesting scenes connected with hunting. On the assumption that there were no male burials below either building Mellaart hypothesizes that the structures were built in memory of (presumably groups of) hunters who were killed and whose bodies were never recovered. However, an examination of the skeletal material recovered below these two buildings indicates the existence of a number of male burials in each case,<sup>37</sup> and such a hypothesis can no longer be maintained.

Preliminary publication of the study of the morphology of the population of Çatal Hüyük by Denise Ferembach (Ferembach, 1972) indicates the existence of two races: Protomediterranean (mainly dolichocephalic) and Alpine (brachycephalic). Both races occur in all levels from which skeletal material was examined. Ferembach suggests that the Alpine form is a variation of the Protomediterranean, and that the brachycephalic element may be considered to be of local origin. The average stature for men is approximately 5'7", and for women 5'2".

The report by Angel (Angel, 1971) concerning the demography and pathology of Çatal Hüyük contains many useful data, but it is unfortunately incomplete since he was unable to examine all of the skeletal material excavated on the site.<sup>38</sup> His study of 294 of the approximately 480 skeletons found on the site leads to some important conclusions, the most interesting of which is the high proportion of females to males. Of 222 adults examined, 136 are female, but male children seem to be more numerous than female. Angel suggests that the low percentage of males may not have been true of the living population, and the nature of the excavated area is such that facts and figures derived from the skeletal material found in it may well not be representative of the site as a whole. This possible bias may be especially important in studies of the demography of the site. The average age at death was 34.3 years for adult males, and 29.8 for adult females,

representing a small but significant improvement over the Upper Palaeolithic period. Such an improvement probably stems from life in a permanent settlement rather than from improved health or food supply. In fact, Angel suggests that if the population of Çatal Hüyük consisted of about 1000 families, representing a sizable increase in population density per square kilometer over the Upper Palaeolithic, it would probably not have been possible to supply such an expanded population with as much meat as had been available in the Upper Palaeolithic, although the diet was clearly rich and varied. The major problem here is attempting to estimate the total population of Çatal Hüyük on the available evidence. The whole of the East site was probably not inhabited at any one time, and it seems that current data are insufficient for accurate calculation of the total population.

The most important disease at Çatal Hüyük was porotic hyperostosis, an overgrowth of the spongy marrow space of the skull, which affected 41% of 143 adults studied. The presumed cause of this condition is moderate to severe anemia, implying the occurrence of endemic falciparum malaria. Evidence of arthritis was also found on some skeletons, and various limb fractures were noted, probably resulting from falls and other accidents. Some head injuries may indicate fighting. Teeth were found to be in generally good condition, although marked wear was apparent on some. The skeletal material of Çatal Hüyük provided no evidence of rickets, vitamin deficiencies, or skull deformation. Generally the state of health of the inhabitants of the site compares favorably with that of other early prehistoric Near Eastern sites where skeletal material has been studied, but that is not to say that disease did not afflict a sizable proportion of the population. Malaria presented the greatest threat, but some selective development of abnormal haemoglobins seems to have taken place, protecting small children against the disease.



## 8 Small Finds

Numerous varied small finds were recovered from the site of Çatal Hüyük; they cast valuable light, not only on the technical achievements of the period, but also upon the beliefs held by the inhabitants of the Konya Plain in the seventh and earlier sixth millennia B.C. The quality of the finished items is usually very fine, clearly indicating the existence of specialized craftsmen in certain materials. Unfortunately no evidence was found on the site for workshops, which must have been located outside the excavated area, and therefore we lack much information concerning manufacturing techniques and the form in which material was supplied to the site. The sources of the raw materials employed are discussed in Section 11.

Clay was mainly used for the manufacture of pottery, but it was also employed in lesser quantities for animal and human figurines, beads, stamp seals, and circular missiles. Handmade pottery was found in all levels of the site, and no levels can now be termed aceramic.<sup>39</sup> The earliest pottery on the site, which clearly does not represent the very beginning of ceramic manufacture in Anatolia, consists of a rather heavy, light-colored, burnished ware, tempered with grit and straw (Figure 36). Open bowl shapes with flat bases are predominant,

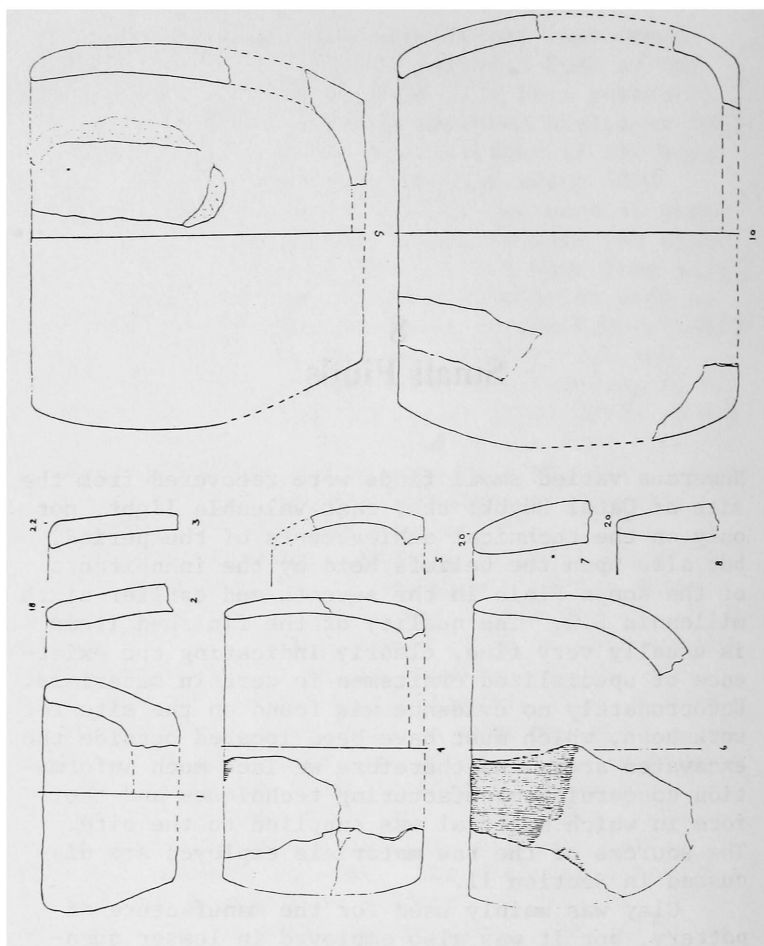


Figure 36. Pottery of Levels XII-XI. Mellaart (1966 a) Fig. 4.

and some seem to foreshadow the hole-mouth shape characteristic of Level VII and later levels (Figure 37). The firing is poor with frequent grey cores and mottled surfaces. The quantity of the earliest pottery recovered was small—only 300 sherds were found in Levels XII-VI B. Evidence of painted decoration is tenuous, consisting of blobs or amorphous areas of paint without a clear pattern. Mellaart cites parallels between the earliest wares at Çatal Hüyük East and the pottery found at Beldibi and Belbaşı on the south coast near Antalya (Mellaart, 1964 a, p. 84 and Figure 33), but such connections await substantiation by more extensive publication of the south coastal material and by discovery of similar material in the area between the Konya Plain and Antalya, especially the Beyşehir region. The most characteristic Neolithic ware appears for the first time in Level VIII and increases in quantity thereafter. This is predominantly a darker burnished ware, although, as Mellaart points out, some lighter colors occur, and the term "Dark (Faced) Burnished Ware" is a misnomer. Perhaps "Hole-Mouth Ware" might be more accurate. The ware is tempered with grits typical of a volcanic region of primary clays including white feldspar, quartz, magnetite, and other minerals. No evidence was reported of vegetable temper. The firing represents an improvement on the earlier wares, although mottling still occurs. The predominant shape is a hole-mouth jar, burnished, sometimes rather streakily, on the exterior, but otherwise undecorated. Although not particularly pleasing to the eye, this pottery is technically very competent, and it is in fact superior to some of the Anatolian Chalcolithic and Early Bronze Age wares. In the later levels of the site, pottery further increases in quantity, and lighter colors become more common. Shapes are more elaborate, and painted decoration commences in Level III.<sup>40</sup> These painted wares foreshadow, but are clearly not

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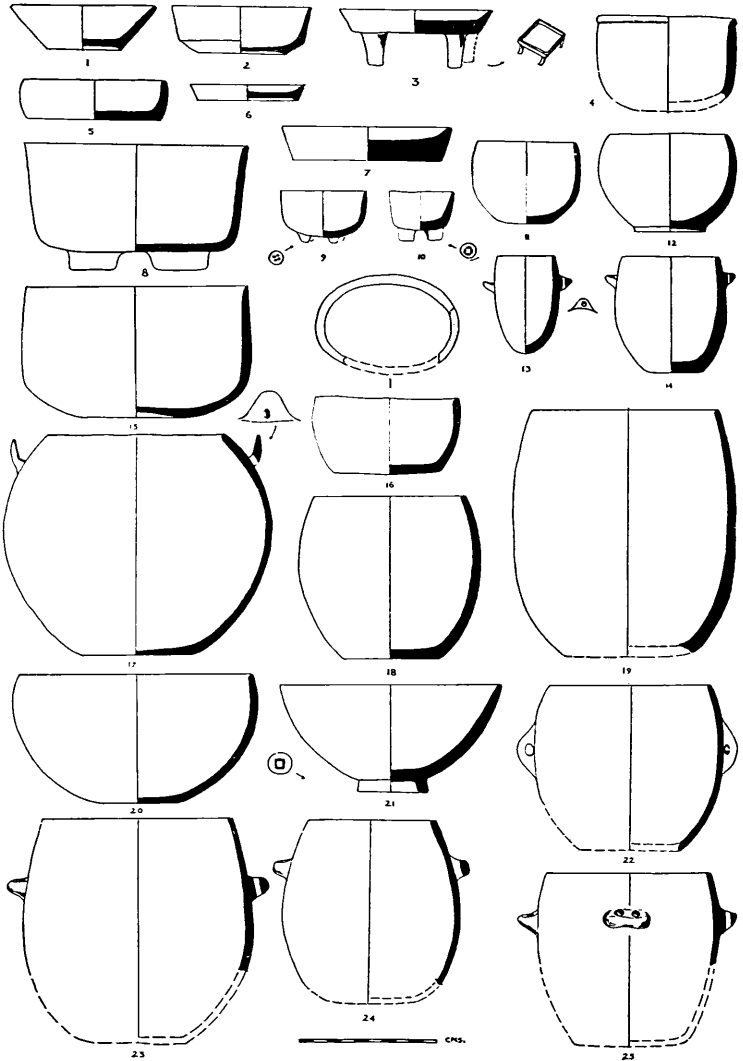


Figure 37. Pottery of Levels VI-III. Mellaart (1962 a) Fig. 9.

immediately ancestral to, the pottery of Çatal Hüyük West.<sup>41</sup> Wares similar to those of Çatal Hüyük East Levels VII-VI were found in the Beyşehir region, central Anatolia south of the Kızılırmak, Cilicia, and the 'Amuq Plain, with further connections in the Levant.<sup>42</sup> Possible parallels also now exist in Cyprus.<sup>43</sup>

Little technical information has been published about the characteristic Çatal Hüyük pottery. It is entirely handmade and appears to be mainly coil built. The thickness, 5-8 mm, is normal for vessels of this type and manufacture. Matson suggests the use of the paddle-and-anvil technique on some vessels which have thin walls (Mellaart, 1965 d, p. 220). Firing to a hardness of 2.5-3.0 (Moh's Scale) is usual, and surprisingly most vessels are evenly and thoroughly fired. The grey cores that do occur owe as much to the abundant magnetite present in these clays as to the unburned carbon.<sup>44</sup> While there is no evidence of the manufacture of pottery in the excavated area, Mellaart suggests the existence of two kilns in houses in Level VI. Certainly the lack of grey cores and the control of firing atmosphere suggest the possible use of a simple kiln.

Baked-clay stamp seals occur, predominantly in houses, in Levels VI B-II (Mellaart, 1964 a, p. 97 and Figures 40 and 41). They are usually round, oval, or subrectangular in shape, but one example is in the form of a rosette, and two resemble hands (Figure 38). The faces are deeply incised with intricate geometric patterns (spirals and other curvilinear motifs, meanders, and diamonds), and the handles usually consist of roughly formed stalk-like projections. The purpose of these seals is unknown; no colored matter was preserved on any of them, nor were any impressions of such seals found on pottery or other artifacts. While the rosette shape of one seal is paralleled by painted motifs on the walls of A.III.8, the size of the seal is much smaller than the paintings, and no evidence



Figure 38. Baked clay stamp seals of Levels VI-II. Mellaart (1964 a) Figs. 40 and 41.

exists to suggest that the seals were used in the decoration of walls. Suggested uses include the decoration of textiles and/or the human body.

The chipped stone industry of Çatal Hüyük consists principally of obsidian tools and weapons, although limited use was also made of flint or chert.<sup>45</sup> A detailed report on the lithic material from all levels has yet to be published; Bialor (1962) discussed the finds of the first season only (Levels VII-II),<sup>46</sup> and preliminary excavation reports also refer briefly to various groups of implements. In the following discussion use is also made of an unpublished report on the stone industry written by Peder Mortensen in 1964.<sup>47</sup>

In contrast to the industries of the south coast sites, the implements found at Çatal Hüyük East are usually of fairly large size although a microlithic element is present.<sup>48</sup> The rarity of cores and waste material clearly indicates that the implements were mainly manufactured in some unexcavated sector of the site. Systematic sampling of the surface material of the whole mound could provide clues to its location.<sup>49</sup> The existence of workshops seems likely, and the quality of many artifacts points to a considerable degree of specialization. Chipped stone tools and weapons occur in hoards below a few of the house floors, but more usually on the floors or discarded in the courtyards outside. Some of the finest weapons and some more mundane tools also occur as burial gifts.

Some typological changes are visible in the material from the various levels of the site. The use of flint or chert seems to be more common in the earlier levels, but it is possible that it never exceeded 15% of the total.<sup>50</sup> Extensive bifacial retouch of obsidian weapons occurs in the earliest levels, but declines in the period after Level VI. The differences indicate development of the industry rather than any major break, and the underlying continuity of artifact types is readily apparent.

The Çatal Hüyük lithic industry comprises cores and core scrapers, blades, scrapers on flakes and blades, daggers, spear heads and arrowheads, chisels, knives, firestones, borers, burins, polishers or cutters, and various flakes, some with retouch. The weapons are the most characteristic feature of the industry, and they display the highest standard of workmanship. Complete bifacial retouch is common, but flint daggers usually bear retouch on only one face previously prepared by polishing—a technique known also from the manufacture of flint daggers in predynastic Egypt and Late Neolithic Scandinavia. Arrowheads are sometimes retouched on the tip and tang only. The category of arrowheads may be subdivided into four groups: tanged, tanged and shouldered, untanged double pointed, and untanged basal rounded (Figure 39). Bialor suggests that the tanged and untanged varieties imply different methods of hafting and possibly different animals hunted (Bialor, 1962, p. 70), but Mortensen has observed that the division between these groups is frequently arbitrary, and that the first three types of point (comprising 98% of the total) were probably all hafted in the same manner. Little evidence has survived for the hafting of any of the chipped stone tools, but one fine bone dagger handle was found carved in the form of a snake (Figure 40), and another handle made of chalk also survived. The variation in the size of arrowheads is notable, suggesting to Mortensen the possible existence of both short and long bows. Circular, oval, and irregular scrapers are found on flakes with partial or complete edge retouch in addition to finer end scrapers on blades. Firestones of flint and obsidian, usually consisting of heavy blades with severe end crushing, occur in several varieties. In a number of cases, firestones occurred in graves together with a lump of sulphur, a blade knife, and a scraper. One example was found of a composite tool consisting of a steeply retouched convex scraping end on a heavy flint blade, with the



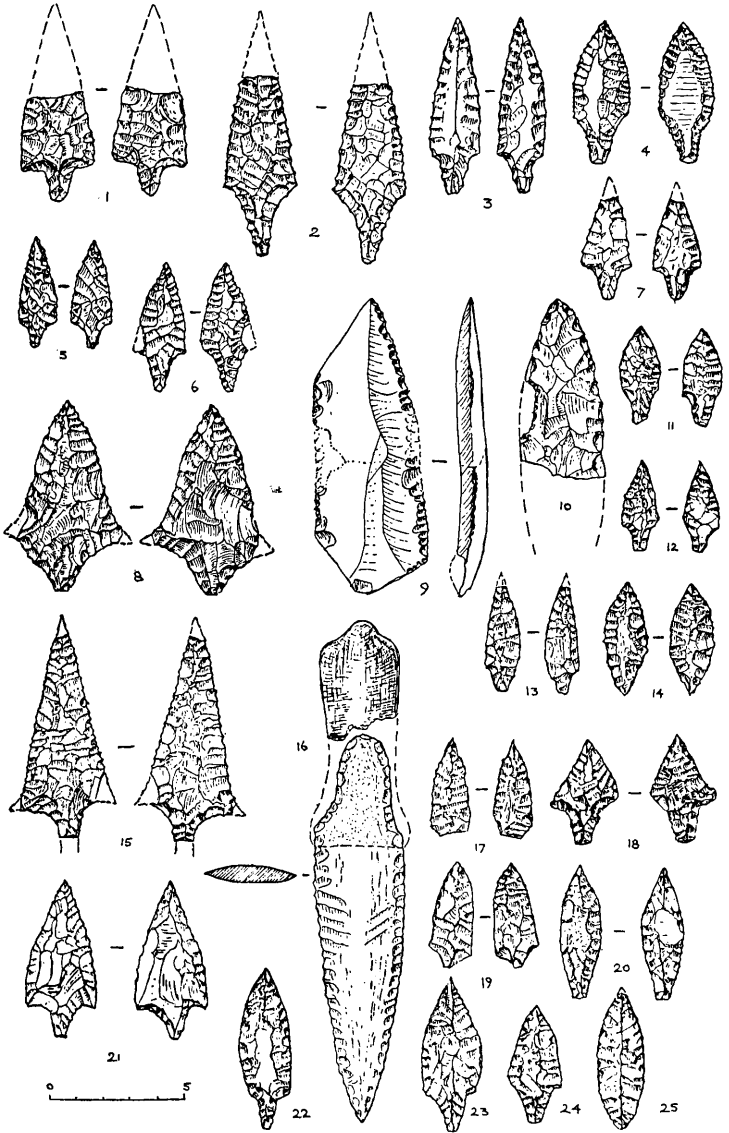


Figure 39. Flint and obsidian weapons of Levels X-VII. Mellaart (1964 a) Fig. 52.



Figure 40. Flint dagger  
with bone handle: VI A.29.  
Mellaart (1967) Fig. 54.

other end being used as a firestone and one side retouched for use as a knife—the precursor of the modern all-purpose penknife. The specialization in the use of flint for daggers, blade knives, some types of scrapers, and all specialized types of firestones, and of obsidian for all projectile points, chisels, and burins clearly indicates appreciation of the qualities of the different materials (Mortensen, 1970 b, pp. 41-42 and private communication). In addition to the flint or chert implements already mentioned, one "sickle blade" of chert bearing the characteristic gloss was found in Level VII.

In addition to being used for tools and weapons, obsidian was also employed on the site for certain less utilitarian items. Obsidian beads and pendants occurred fairly frequently in burials, and several mirrors were also found as grave goods accompanying female burials in Levels VI.B-IV. These mirrors were finely polished on the reflecting face, but the backs were only roughly shaped; one example (VI B.20) with a lime plaster backing suggests that the backs of the mirrors were not originally visible.<sup>51</sup> Perhaps more than any other artifact, mirrors with their highly polished surfaces are indicative of the mastery of working in obsidian, characteristic of the site as a whole.

The chipped stone industry of Çatal Hüyük is clearly paralleled by contemporary material found in the southwest Anatolian Lake District, central Anatolia, and Cilicia.<sup>52</sup> On most sites in these areas, obsidian is the most commonly used raw material, and retouched weapons of the Çatal Hüyük type are indicative of contacts between various regions. Outside Anatolia typologically similar industries, in flint rather than obsidian, are found in the 'Amuq Plain, Syria, and Palestine as far south as Beidha near Petra (for Beidha see Kirkbride, 1966 and Mortensen, 1970 b). The implements of the Anatolia-Syria-Palestine group, particularly the tanged arrowheads, contrast strongly

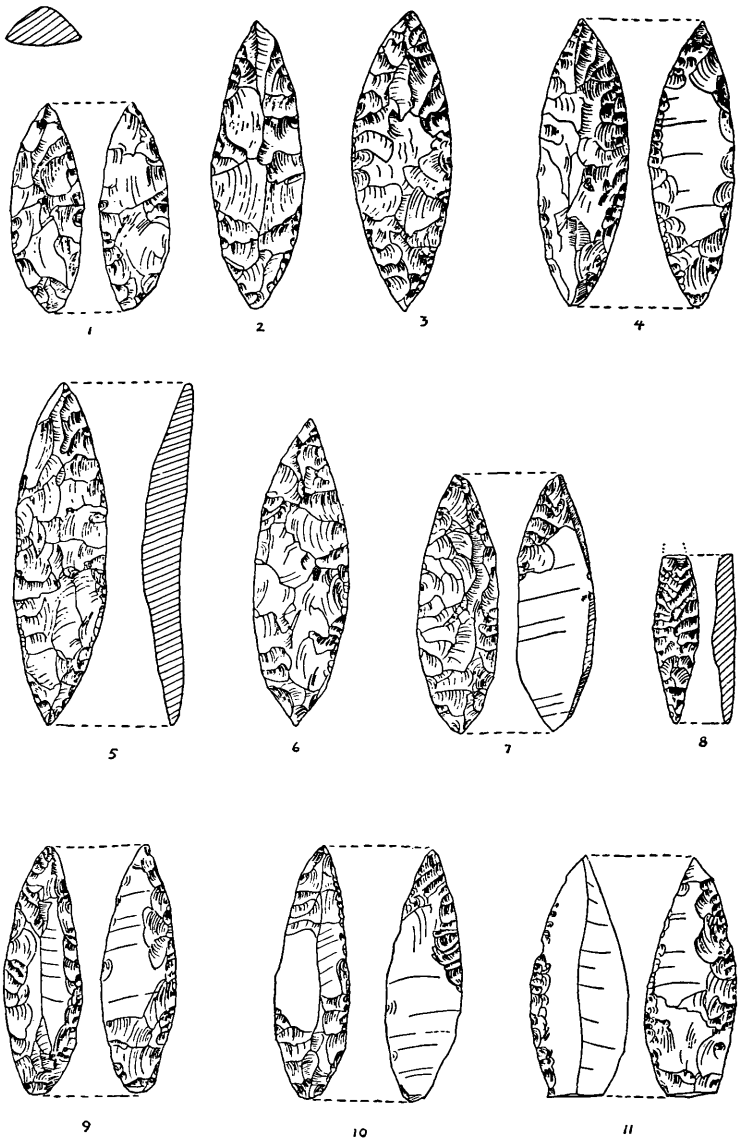


Figure 41. Obsidian weapons found in a cache in storeroom of A.III.2. Bialor (1962) Fig. 9.

with those of the Zagros and Hassunan sites of Iran and northern Iraq, with which area there seems to have been little contact.<sup>53</sup> Surprisingly there appears to be no similarity whatsoever between the chipped stone industries of Anatolia and Cyprus, although the importation of central Anatolian obsidian is well attested in the island in the sixth millennium B.C., and possible parallels in pottery types between the two areas now exist.<sup>54</sup>

The origin of the Çatal Hüyük industry is unclear, and a detailed publication of the implements from the earliest levels of the site together with those from other Anatolian sites would be of assistance. Comparison with the earlier industry of Aşıklı Hüyük reveals certain basic differences (Todd, 1966 d). At Aşıklı Hüyük, finely formed scrapers are proportionately far more common than at Çatal Hüyük, but retouched weapons are clearly rare. Such variation may be entirely due to a chronological difference between the two industries, but other geographic and economic factors must also be taken into consideration. Preliminary information concerning the Can Hasan III industry suggests some parallels to Çatal Hüyük (S. Payne in French, Hillman, Payne, and Payne, 1972, p. 190), and it is from the former site, which lies geographically closest of all the Anatolian aceramic sites to Çatal Hüyük, that information on the origin of the Çatal Hüyük industry is most likely to be forthcoming. At present we can only say that the origin seems to lie in the general central Anatolian region, and no evidence exists for a foreign derivation.

Polished stone artifacts, both utilitarian and ornamental, provide further evidence for the technical competence of the craftsmen of Çatal Hüyük. Polished stone axes occur frequently in place of the chipped flint types of more southerly areas. Small neatly faceted green stone celts are common both at Çatal Hüyük and on other central Anatolian neolithic sites. Stone beads, pendants, and bracelets of attractively colored stones were provided

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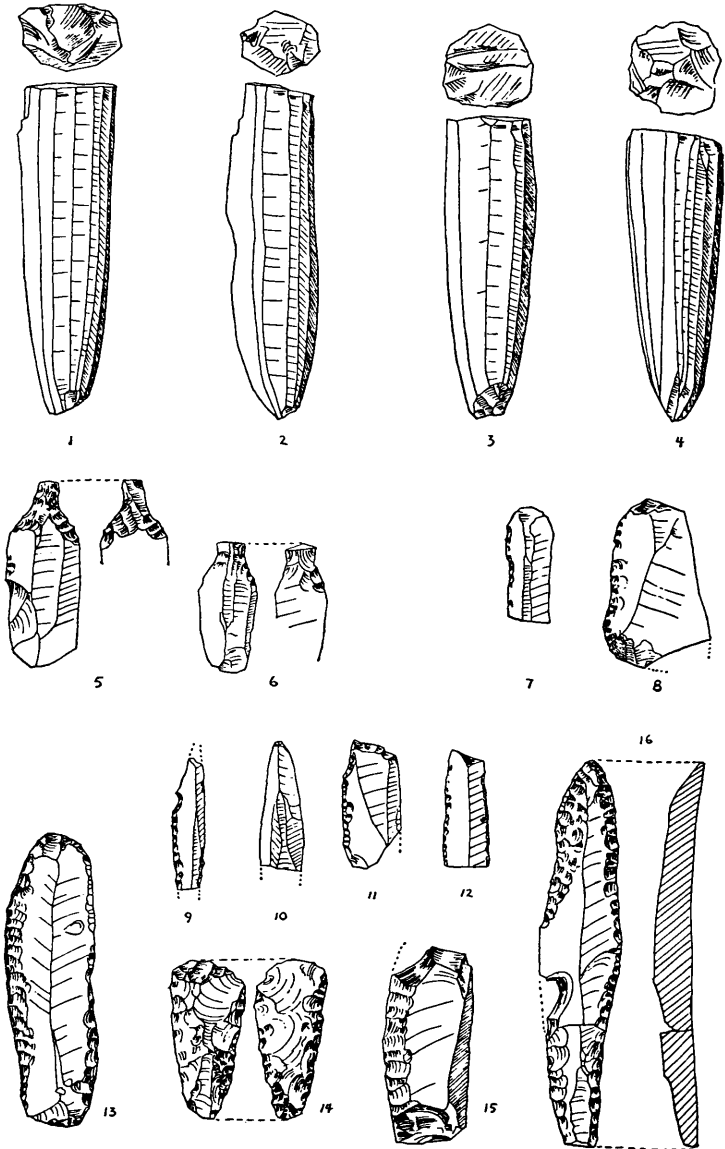


Figure 42. Various tools and cores of Levels VI-V. Bialor (1962) Fig. 4.

as gifts in burials (mainly female), together with occasional shallow stone bowls or plates, which also occurred in houses. Pierced "mace-heads" were found in some male burials, and small stone palettes for grinding of pigment accompanied female burials. In addition, heavier domestic stone equipment such as pounders, grinders, and querns occurred regularly in the houses and storerooms.

Bone was commonly utilized for tools such as awls, pins, spatulas, and spoons, and also for various forms of beads. These again display a high standard of workmanship, but they do not call for detailed examination. Incised decoration is rare, and spatulas occasionally terminate with a small carved hand. Bone belt hooks and eyes were found in several male burials (Mellaart, 1964 a, pp. 100, 103, and Figure 43). They were pierced for attachment to clothing and were found in situ near the waist of the body. The hooks were usually of simple form, but one example of a hook in the form of a wild asses' head(?) was found in the burial below VI A.29 (Figure 43). Hooks of a similar type were also found at Nea Nikomedeia (Macedonia) (Rodden, 1965, p. 88 and illustration on p. 86) and Souphli Magoula (Thessaly) (Theocharis, 1967, Plate XIV), and their interpretation as belt hooks is certainly more plausible than their interpretation as fish hooks. The finest bone artifact found at Çatal Hüyük consists of a dagger handle carved in the form of a snake, with two incised eyes and incised dots on the body, found in a male burial below VI A.29 (Figure 40). Animal teeth and shells were also used for beads, and antlers and boars' tusks were also employed on a limited scale for other items.

Despite the application of the term neolithic to the site of Çatal Hüyük East, copper and lead were also used for beads, pendants, rings, and other small items. Both metals occur for the first time in Level IX, and thereafter they are found in most levels of the site. Most copper objects are of

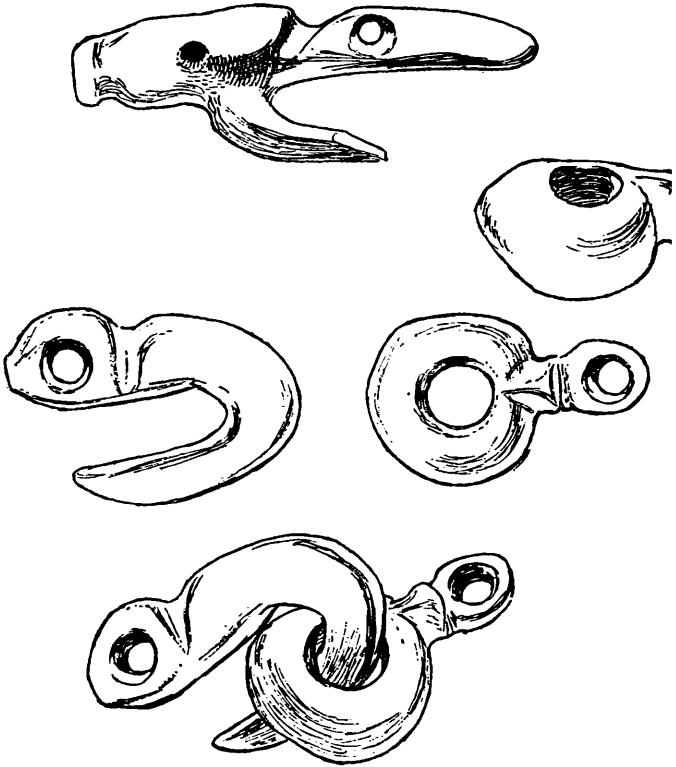


Figure 43. Bone hooks and eyes of Level VI  
Mellaart (1964 a) Fig. 44.



hammered native copper, but a lump of copper slag from VI A.1 suggests that initial steps toward true metallurgy had been taken.<sup>55</sup> It is hardly surprising that the earliest evidence for the use of metals in the Near East should come from Anatolia, a country which abounds in mineral deposits. Initially metals must have been treated as a strange form of stone which could be hammered into shape without breaking. Subsequently the properties of metal would have been realized and true metallurgy introduced. The range of metal types at Çatal Hüyük is very limited, but it is quite possible, as Mellaart has noted, that simple tools such as awls or drills might have been made in metal. Çatal Hüyük is no longer alone in providing evidence for the use of metals in an early prehistoric context. At Çayönü, close to the mineral deposits of southeastern Anatolia, several copper pin fragments and a copper reamer were found dating to the late eighth millennium B.C. (Çambel and Braidwood, 1970, p. 56 and illustration on p. 51). Three fragments of a copper wire were found in the lowest level at Suberde in the Suğla Gölü region, but analysis revealed them to contain 8.4% tin, and the excavator does not consider them to have been found in their proper context (Bordaz, 1968, pp. 50-51). Although the available evidence is still very meager, it is sufficient to indicate that the history of the use of metals in the Near East can be traced back at least to the eighth millennium B.C., and the finds at Çatal Hüyük need not be viewed in isolation.

Stone and clay human figurines were found in Levels IX-II, but the earliest types are only poorly known. The use of clay was more common in the later phases, presumably coupled with an increased familiarity with the material resulting from the greater ceramic output in these phases. Variety is a marked feature of the figurines, and it is impossible at present to demonstrate a stylistic development, for instance, from the schematic to the realistic. As Mellaart points out, some of the figurines may be

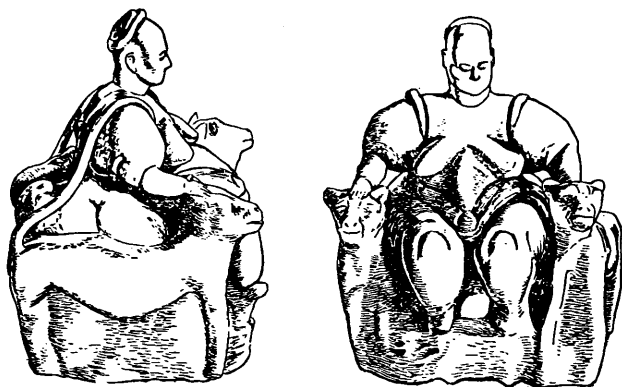


Figure 44. Clay figurine: A.II.1. Mellaart (1967) Fig. 52.

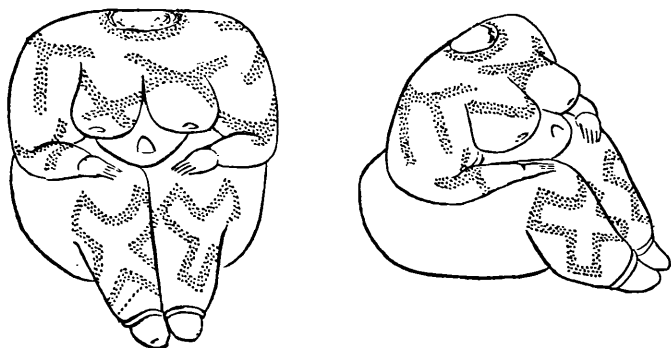


Figure 45. Painted clay figurine: VI A.61. Mellaart (1967) Fig. 50.

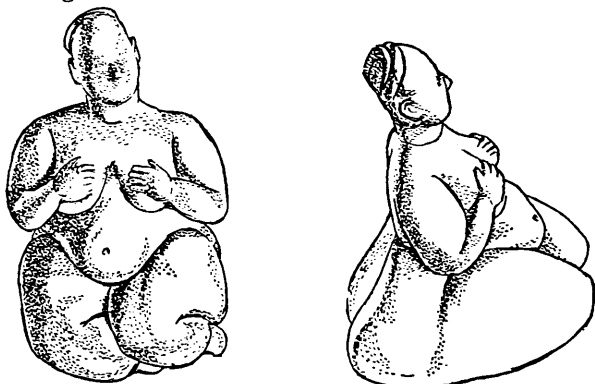


Figure 46. Clay figurines: A.II.1. Mellaart (1967) Fig. 53.

distinctly older than the context in which they were found, but insufficient material was recovered from the various levels of the site to add substance to this suggestion. The subjects portrayed need only be treated briefly since a detailed catalog of the statuettes found in the first three seasons of excavation was published by Mellaart (1967, pp. 202-203), and the 1965 season added little new material. Both male and female figures occurred, sometimes in association with animals. The incised dots covering the bodies of some of the animals suggest identification as leopards (to Mellaart), while others may be bulls. A unique stone plaque (VI A.30) shows two pairs of figures in relief; the pair on the left is shown in an attitude of embrace or copulation, while the right-hand pair may represent the mother and resulting child (Figure 48). The quality of the figures ranges from crude stone figures with coarse incision to indicate the major features, to delicately modeled clay figures which sometimes bear painted decoration. As a group the stone statuettes lack the sophistication and attention to detail which characterizes the clay types. Natural stalagmite or stalactite formations were frequently found in association with human figurines, and a few examples were roughly fashioned into partial human form.

The statuettes have been interpreted as depicting deities of the time in various attitudes, and most were found in buildings classified by Mellaart as shrines. Little information was recovered concerning their original location, but a plastered ledge in the alcove on the east wall of VII.44 may be the place where some figurines might have been lodged, although none were found in that particular building. Statuettes were most frequently found on the floors of buildings, but several were found in grain bins or in association with deposits of vegetable matter. Groups of very crude clay animal and human figures also occurred in pits or in the walls of some buildings. Comparison of the statu-



Figure 47. Stone figurine (blue limestone): E.VI.10. Mellaart (1963 a) Pl. XXI:b.



Figure 48. Stone plaque (schist): VI A.30. Mellaart (1963 a) Pl.XXI:d.

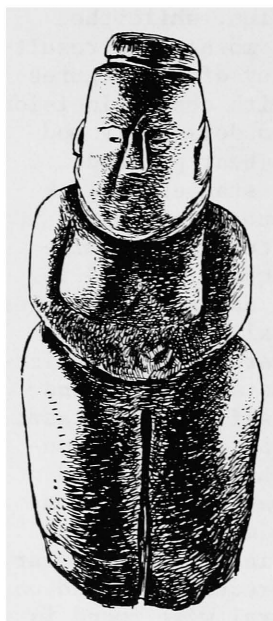


Figure 49. Stone figurine(?): E. VI.44. Mellaart (1964 a) Fig. 26.



Figure 50. Stone figurine (white marble): VI A.10 Mellaart (1967) Pl. 70.

ettes from Çatal Hüyük with those of Late Neolithic Hacilar shows clear parallels between some of the female clay figures at both sites.<sup>56</sup> But male figures were not represented at Hacilar, and the schematic group of stone figures found at Çatal Hüyük is absent from the later site. The Çatal Hüyük figurines display greater variety in type and standard of workmanship than those found at Hacilar, and they provide valuable information on the development of this early form of Anatolian art.

Despite the dampness of the strata below the surface of the site, certain perishable materials were preserved in carbonized form in the burials below the burned Level-VI buildings. These include human flesh, textiles, skins, and fur in addition to wooden vessels. Traces of unburned basketry and matting preserved in the form of silica skeletons occurred frequently in most levels of the site. Published analyses of the textiles (Figure 51) variously identify the fibers as wool or flax (Burnham, 1965 and Ryder, 1965), but there seem to be objections to both identifications, and the question must remain open. The preserved fragments indicate considerable competence in textile manufacture, and several different techniques were employed. Burnham mentions two qualities of tabby woven cloth in addition to netlike twined fabrics. Heading cords and one example of a selvage were found. No evidence was found for colored patterns, but their existence is suggested by some of the wall paintings discussed in Section 5. The wooden vessels (Figure 52) preserved in the Level-VI burials and in a few of the Level-VI houses similarly display both variety and a high standard of technical skill. Formed of fir or other soft woods, they vary in shape from large oval platters with decorative handles to circular bowls and rectangular boxes with lids. Fifteen shapes were sufficiently preserved to allow restoration on paper, and yet other shapes may be represented among the numerous fragments. The



Figure 51. Textile fragment: E.VI.1. Mellaart (1964 a) Pl. XXIV:b.

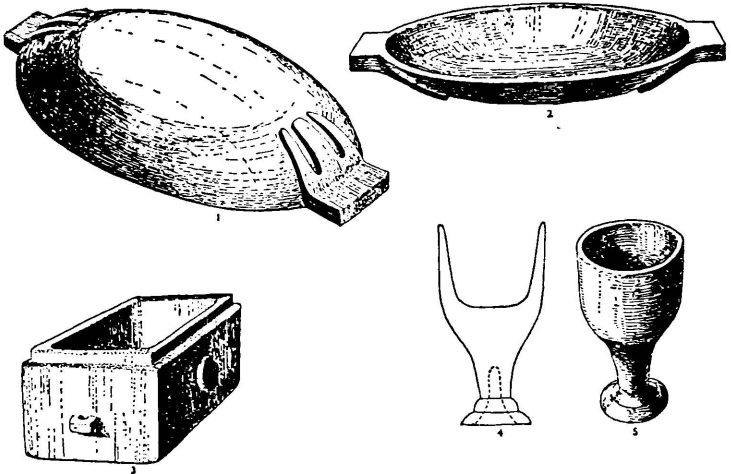


Figure 52. Wooden vessels of Level VI B-A. Mellaart (1967) Fig. 55.

vessels were carved from single pieces of wood without any use of joinery. Very similar types were made in the Bolu region of northern Anatolia as late as the middle of this century. Containers of materials other than clay were clearly not in short supply at Çatal Hüyük.

The small finds provide ample evidence of the variety of crafts practiced at the site or in the surrounding regions. The lack of workshops or evidence for the working of the various materials within the excavated area precludes certainty as to whether items such as wooden vessels were made on the site, or possibly obtained in finished form from other regions where the raw materials were more locally available. It is likely that wooden vessels were made in the well-wooded areas surrounding the Konya Plain, and that they were supplied to the inhabitants of Çatal Hüyük by trade. (The role of trade in the economy of the site is discussed in Section 11.) In addition to providing finely made examples of the categories of artifacts frequently found on earlier prehistoric sites in the Near East, the preservation of perishable materials confirmed the existence of finely woven textiles and sophisticated wooden vessels. At Çatal Hüyük we are thus able to document aspects of the material culture for which little or no evidence is usually available from the archaeological record.

## 9

# Chronology

Prior to the advent of C-14 dating, the earliest material at Mersin, Tarsus, and the 'Amuq Plain could only be imprecisely dated by relative methods. The initial step toward chronometric dating of earlier prehistoric Anatolia was the publication of a C-14 date for "basal" Mersin (obtained from charcoal collected by F. R. Matson in 1955 from ca. 1 m above the river level). While this provided a general date for one of the earliest settlements at the site, a detailed chronological scheme could scarcely be built upon the evidence of one date derived from a sample taken long after the end of the excavations. Several C-14 dates were obtained for various levels at Hacilar, indicating the approximate chronology of the site, but not all levels were dated, and the information was insufficient to provide precise chronometric dating for all phases of occupation. The date of the beginning of the Late Neolithic settlement rested solely upon a single determination for Level IX, and Mellaart originally postulated that Hacilar was reoccupied in the Late Neolithic period ca. 6000 B.C. He therefore suggested that the Çatal Hüyük sequence should basically cover the seventh millennium B.C., since there would appear to be only a brief overlap between occupation at the two sites (Mellaart,



1964 a, p. 118). The twenty-seven C-14 dates for the various levels at Çatal Hüyük East resulted in a lowering of the original guess-dates by approximately 500 years. The Çatal Hüyük sequence, in conjunction with other C-14 dates from Can Hasan, Er Baba T., Hacilar, and Suberde, now permits the construction of a comparatively detailed chronology for earlier prehistoric Anatolia.

The following list of C-14 dates provides the relevant data upon which the correlation of sites must be based. Dates for Çatal Hüyük East are quoted first, followed by those for other sites in alphabetical order. For each sample the sample number is followed by the provenance, material, date at half-life of  $5568 \pm 30$ , date at half-life  $5730 \pm 40$ , and footnote numbers for published references. In all cases dates have been converted from the 5568 half-life to the 5730 half-life by the multiplication of the BP (Before Present) 1950 date by 1.03. In the past some dates have been converted by multiplying the actual BP date by 1.03, thus accounting for the slightly higher dates in comparison with those listed in the chart.<sup>57</sup> In the discussion which follows the date list, dates are quoted according to the  $5730 \pm 40$  half-life, but no attempt has been made to convert radiocarbon years to calendar years since the published calibration curves do not extend as far back in time as the period of Çatal Hüyük.

Our limited knowledge of the earliest levels at Çatal Hüyük East precludes certainty concerning the date for the initial occupation of the site. The single available date for Level XII (P-1374) is more recent than even the lowest date obtained for Level X, and the highest date of the whole series was obtained for Level IX (P-779). The Level-XII sample consisted of charcoal from the fill of room E.XII.29; the late date may indicate that the material was derived from a context which is not truly representative of Level XII, and no great reliance should be placed upon it. A date of

Site	Material	Date at half-life 5568 ± 30	Date at half-life 5730 ± 40	Notes
<u>1. Çatal Hüyük East</u>				
P-796	A.II.1	Grain	5571 ± 77	5797 ± 79 (58)
P-774	A.III.1	Timber	5581 ± 91	5807 ± 94 (59)
P-775	E.IV.1	Timber	6087 ± 96	6328 ± 99 (58)
P-1361	F.V.1	Charcoal	5549 ± 93	5774 ± 96 (60)
P-776	E.V.4	Timber	5690 ± 91	5919 ± 94 (58)
P-827	E.VI A/B.1	Human brain	5629 ± 86	5856 ± 89 (61)
P-1375	E.VI.25	Timber	5711 ± 99	5941 ± 102 (62)
P-1363	E.VI.49	Timber	5961 ± 103	6198 ± 106 (60)
P-769	E.VI A.25	Grain	5555 ± 93	5780 ± 96 (58)
P-781	A.VI A.2	Timber	5574 ± 90	5800 ± 93 (58)
P-772	E.VI A.1	Timber	5622 ± 91	5849 ± 94 (58)
P-1365	E.VI A.70	Ladder	5779 ± 80	6011 ± 82 (62)
P-797	E.VI B.28	Timber	5679 ± 90	5908 ± 93 (58)
P-777	E.VI B.10	Timber	5754 ± 91	5985 ± 94 (63)
P-1362	E.VI B.27	Timber	5954 ± 111	6191 ± 114 (62)
P-770	A.VI B.1	Timber	5962 ± 94	6199 ± 97 (58)
P-1364	E.VI B.70	Timber	5986 ± 98	6224 ± 101 (62)
P-778	E.VII.24	Grain	5588 ± 89	5814 ± 92 (63)
P-1366	E.VIII.45	Charcoal	5734 ± 90	5965 ± 93 (62)
P-1367	E.VIII.45	Charcoal	5903 ± 97	6139 ± 100 (62)
P-779	E.IX.8	Charcoal	6240 ± 99	6486 ± 102 (63)

P-1371	E.X.29	Charcoal	5894 ± 102	6129 ± 105	(62)
P-1372	E.X.29	Charcoal	5965 ± 85	6202 ± 88	(62)
P-1369	E.X.29	Charcoal	5987 ± 109	6225 ± 112	(62)
P-1370	E.X.28	Ash	6086 ± 104	6327 ± 107	(62)
P-782	E.X.1	Charcoal	6142 ± 98	6385 ± 101	(63)
P-1374	E.XII.29	Charcoal	5807 ± 92	6040 ± 95	(64)

## 2. Aşıklı Hüyük

P-1239	Unstratified	Charcoal	6661 ± 108	6919 ± 111	(65)
P-1242	Unstratified	Charcoal	6828 ± 128	7091 ± 132	(65)
P-1241	Unstratified	Charcoal	6843 ± 127	7107 ± 131	(65)
P-1238	Unstratified	Charcoal	6857 ± 128	7121 ± 132	(65)
P-1240	Unstratified	Charcoal	7008 ± 130	7277 ± 134	(65)

## 3. Can Hasan I

P-789	2 A	Charcoal	5030 ± 79	5239 ± 81	(66)
P-793	2 B	Charcoal	4304 ± 78	4492 ± 80	(66)
P-792	2 B	Charcoal	4720 ± 76	4920 ± 78	(66)
P-791	2 B	Charcoal	4805 ± 80	5008 ± 82	(66)
P-790	2 B	Charcoal	4880 ± 78	5085 ± 80	(66)
P-795	2 B	Charcoal	4882 ± 78	5087 ± 80	(66)
P-794	2 B	Charcoal	5083 ± 89	5294 ± 92	(66)

Site	Material	Date at half-life 5568 ± 30	Date at half-life 5730 ± 40	Notes
<u>4. Çayönü</u>				
GrN-4458	T/2	Charcoal	7570 ± 100	7856 ± 103 (67)
M-1610	4-5	Charcoal	6620 ± 250	6877 ± 258 (68)
M-1609	4-5	Charcoal	6840 ± 250	7104 ± 258 (69)
GrN-4459	4-5	Charcoal	7250 ± 60	7526 ± 62 (67)
<u>5. Erbaba T.</u>				
I-5151	Earliest occup.	Charcoal	5780 ± 120	6012 ± 124 (70)
GX-2545	Earliest occup.	Charcoal	5580 ± 430	5806 ± 443 (70)
GX-2544	Earliest occup.	Charcoal	4975 ± 550	5183 ± 566 (70)
GX-2543	Latest occup.	Charcoal	5600 ± 570	5826 ± 587 (70)
<u>6. Hacılar</u>				
P-315	Ia	Timber	5040 ± 121	5250 ± 125 (71)
P-316	II	Timber	5220 ± 134	5435 ± 138 (71)
P-313A	VI	Charcoal	5400 ± 85	5620 ± 88 (72)
BM-48	VI	Timber	5600 ± 180	5826 ± 185 (73)
BM-125	VII	Timber	5820 ± 180	6053 ± 185 (74)
P-314	IX	Charcoal	5390 ± 94	5610 ± 97 (72)
BM-127	Aceramic V	Charcoal	6750 ± 180	7011 ± 185 (74)

## 7. Mersin

W-617	"Basal"	Charcoal	6000 ± 250	6238 ± 258	(75)
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## 8. Suberde

P-1389	III	Carbonized wood fragments	5634 ± 85	5862 ± 88	(76)
P-1385	III	Carbonized wood fragments	5957 ± 88	6194 ± 91	(76)
P-1386	III	Carbonized wood fragments	6045 ± 76	6285 ± 78	(76)
P-1388	III	Carbonized wood fragments	6226 ± 79	6471 ± 81	(76)
P-1391	III	Carbonized wood fragments	6299 ± 91	6547 ± 94	(76)
P-1387	III	Carbonized wood fragments	6326 ± 300	6574 ± 309	(76)
I-1867	III	Carbonized wood fragments	6570 ± 140	6826 ± 144	(77)

ca. 6500 B.C. would seem to be more likely for this level. The earliest, unexcavated deposits on the site may therefore date to the first half of the seventh millennium B.C. The Level-IX sample consisted of charcoal from the floor and fill of room E.IX.8, and the reason for the unexpectedly high date is not clear.

The date for the final occupation of the East mound is also uncertain. The C-14 dates suggest that the two latest excavated levels (I-0) may be dated ca. 5700-5600 B.C., thus allowing the possibility of a brief overlap with the earliest of the Late Neolithic levels at Hacilar (Mellaart, 1964 a, chronological table on p. 119). But the chronology of Hacilar IX itself lacks precision, and further information concerning a possible overlap may be forthcoming from the site of Erbaba T. in the Beyşehir region (Bordaz, 1973). The lower levels of this site seem to be contemporary with the later levels of Çatal Hüyük East, and the upper levels with Hacilar IX-VI. It is, however, quite possible that evidence of occupation, that is later in date than the latest material within the excavated area, may exist on Çatal Hüyük East and occupation of the East mound, after ca. 5600 B.C. cannot be ruled out. Unfortunately, very little is known about the earliest levels of the West mound, and at present no definite date can be proposed for its initial occupation. At a certain point in its development, the settlement may have moved from the East to the West mound, but contemporaneous occupation of both sites for a limited time is also a possibility. The occupation of the East mound may therefore date from the earlier seventh millennium B.C. to ca. 5600 B.C., but we cannot be more precise at this time.

The relationship of the Çatal Hüyük sequence to those of other Anatolian sites is shown in Figure 53. Brief notes will suffice here to outline the evidence upon which the correlations are based. A small number of coarse, straw-tempered, buff

	7000	6500	6000	5500	B.C.
AŞIKLI H.	[Timeline bar with a question mark at approximately 6800 B.C.]				
ÇAYÖNÜ T.	[Timeline bar with a question mark at approximately 6800 B.C.]				
CAN HASAN III	[Timeline bar with question marks at approximately 6800 and 6500 B.C.]				
SUBERDE	[Timeline bar with 'III' and 'II' labels and question marks at approximately 6500 and 6200 B.C.]				
ÇATAL H. E.	[Timeline bar with 'XII', 'VI', and '0' labels and a question mark at approximately 6800 B.C.]				
MERSİN	[Timeline bar with 'XXXIII' and 'XXVI' labels and a question mark at approximately 6200 B.C.]				
ERBABA	[Timeline bar with a question mark at approximately 6200 B.C.]				
HACILAR	[Timeline bar with 'Acer.', 'IX', and 'I' labels and question marks at approximately 6800 and 6500 B.C.]				
CAN HASAN I	[Timeline bar with '7' and '3' labels and a question mark at approximately 5500 B.C.]				

Figure 53

sherds found in the upper part of Suberde III appear to be similar to the cream-burnished ware of Çatal Hüyük XII-IX and Bordaz suggests that the upper part of Suberde III and also Suberde II may be correlated with Çatal Hüyük XII-IX (Bordaz, 1973, p. 235). The C-14 dates from Suberde III, however, span approximately 1000 years, and even if the lowest date (P-1389) is rejected, the Suberde dates still cover the period of Çatal Hüyük XII (or earlier) to VIII/VII. In view of the scarcity of ceramic material in the prehistoric layers at Suberde, together with the pottery parallels noted by Bordaz, we suggest equating Suberde III-II with Çatal Hüyük pre-XII to IX/VIII.

The chronological position of the aceramic settlement at Hacilar is difficult to estimate because of the paucity of published material. The one available C-14 date suggests that the settlement belongs to the end of the eighth or beginning of the seventh millennium B.C. The occurrence of plaster floors can scarcely be considered a chronological indicator (Bordaz, 1973, p. 285), although the red-painted plaster provides a general parallel to Çatal Hüyük VIII.31, Aşıklı Hüyük, Jericho PPNB, and Beidha. The term aceramic must indeed be used

with caution since only a small part of the settlement was excavated, but a general date of ca. 7000 B.C. does not seem unreasonable, and no good reason exists for dating the settlement as late as Çatal Hüyük VIII-VI B.

Of the other aceramic sites in Anatolia, Aşıklı Hüyük is dated by five C-14 dates taken from the exposed sections of the site. Since these are unstratified,<sup>78</sup> and since the danger of contamination exists, the dates must be used with caution. Comparison of the lithic industry of Aşıklı Hüyük with that of Çatal Hüyük, together with other factors, suggests a date of 7600/7500-6900/6800 B.C. (Todd, 1966 d), and the C-14 dates provide support for this view (Todd, 1968). The greater part of the occupation of the site probably lies within the second half of the eighth millennium B.C., but an overlap with the earliest levels of Çatal Hüyük is possible. The site of Çayönü T. in southeastern Anatolia may be approximately contemporary with Aşıklı Hüyük, but the small number and wide variation of the available C-14 dates, together with the geographical distance separating the site from those in the central and more westerly regions of Anatolia, are all factors that render comparisons difficult. No dates are yet available for Can Hasan III, and chronological placement of this site must await further publication. The dates listed for Can Hasan I are all of the Chalcolithic period, and the material excavated at Çatal Hüyük West is clearly contemporary with several phases of Can Hasan I Level 2 B (French, 1967, p. 175). Unfortunately, no dates are presently available for the earliest levels at Can Hasan I.

The consistency of the sequence of C-14 dates from Çatal Hüyük has been discussed by Mellaart, who considers the problem posed by unexpectedly early dates in some cases. He feels this may result from the reuse of timber beams (Mellaart, 1964 a, pp. 116-118). Anomalies occur throughout the



sequence, and it is surprising that greater consistency is not displayed by the dates from the various levels. The more recently published series of dates presents considerable problems for the chronology of the earlier levels. The low date for Level XII and the very high date for Level IX have already been mentioned. The five dates for Level X cover an unreasonably long period of 255 years, and several of them are later than Mellaart's original estimate for the duration of the level. While an examination of the Çatal Hüyük dates reveals a general trend toward later dates in the later levels, the numerous inconsistencies preclude precise dating of each level. Mellaart correctly stressed the necessity for sequences of dates from a site, rather than single determinations for the various levels, and this may be extended to include series of samples from the same context so that the variation within samples from the same context can be studied. It is noteworthy that the C-14 dates from Çatal Hüyük tend to support the longevity of some building levels suggested on the evidence of the numerous plaster layers on the walls, but an annual replastering of the walls remains hypothetical, and the number of plaster layers on the walls of a particular building can only serve as a general guide to its length of occupation. In summary, we can state that, while the chronology of the site as a whole can be established within reasonable limits, precise dating of individual levels remains uncertain.

## 10

# Environmental Studies

At the time of the excavations at Çatal Hüyük, comparatively little material relevant to environmental studies was available. Although general geological surveys had been undertaken in the Konya Plain and surrounding regions, no thorough and up-to-date survey either of the Konya Plain or of the Çumra area had been published. This situation has been radically altered by the work of the Agricultural University in Wageningen, Holland, and the final results are now available in a series of monographs (see Note 4). Further palaeoecological work was undertaken by the late Harold Cohen of the University of Manchester (Cohen, 1970). As a result of these studies, we can now examine various environmental aspects of the site and gain valuable insight into the reason for the location of the settlement and the relationship of the settlement to its surroundings. Such considerations are essential to a full and accurate understanding of any ancient site and, all too frequently, discussion of such topics, if present at all in excavation reports, has been very limited in scope.

While consideration of the site of Çatal Hüyük in relation to its environment has been considerably facilitated by the aforementioned studies, lack of published material from other approximately con-

temporary Anatolian sites makes it impossible to arrive at a detailed understanding of the region as a whole. The publication of Helbaek's report on the flora of Hacilar provides many useful data (Helbaek, 1970), and it is to be hoped that similar detailed reports will be published for other relevant sites. Although the flora of a site constitutes one important aspect, what is needed is an overall detailed study of the whole area in which a site is located. A short-term project of this type was undertaken in the Aşvan area near Elâzığ, now flooded by the rising waters of the Keban Dam, and an interim report indicates the variety of disciplines which can be utilized in an attempt to understand a site and its interaction with the environment (French et al., 1973). No such studies have been published for any early prehistoric Anatolian site, but this situation may be partially rectified by the final publication of Can Hasan I and III.

Although some studies that might be considered an integral part of a current research design have not been undertaken in the Çatal Hüyük area, some data are now available concerning the climate, hydrology, geology, flora, and fauna of the site and the ecological zone in which it is situated. The climate of the Konya Plain is Xerothermomediterranean, matching that of the Tuz Gölü Basin, bounded on all sides by a cold steppic zone. The bioclimatic map suggests that Çatal Hüyük lies approximately at the point of transition between the two climatic zones, but we consider the Çatal Hüyük area part of the Konya Plain climatic zone rather than part of the surrounding area that borders the edges of the plain. The rapid change in climate that occurs away from the shadow of the mountains surrounding the plain is evident from comparison of the average annual precipitation figures for the town of Konya, on the very edge of the plain (315.1 mm) and for Çumra, the nearest town to the site of Çatal Hüyük (249.3 mm) (de Meester, Ed.,

1970, Table 1). In fact, the Çumra figures are considerably lower than those published for any other district center in the whole of Turkey,<sup>79</sup> a fact to be borne in mind when considering the motivation behind the original choice of the site. A further factor is the variability of rainfall from year to year. Within the period 1955-1965, the annual precipitation at Çumra varied from less than 200 mm to more than 350 mm, and a figure of less than 200 mm was recorded for two years running (de Meester, Ed., 1970, Figure 14). No precipitation figures are available for the site itself, but little climatic variation is to be expected within the 11 km distance that separates it from Çumra. The mean temperature at Çumra is 11.1°C with an extreme maximum of 37°C and extreme minimum -26.8°C (de Meester, 1970, Table 1). The evaporation average for the Konya Basin is approximately 930 mm per year, exceeding the average annual precipitation. The climate of the Çumra-Çatal Hüyük area does not, therefore, seem to be particularly encouraging to early settlement, and other factors must have governed the choice of location. Possible changes in climate must also be taken into account, but there is currently no good evidence for any major change in climate in this area within the past 8000 years, although it has frequently been proposed that changes occurred in the several millennia that preceded this period (de Ridder, 1965, p. 225). Further palaeoclimatological research should be directed toward the elucidation of possible climatic change. The climatic situation of Çatal Hüyük is of relevance to studies such as those of Raikes in which an attempt has been made to correlate prehistoric sites with climatic belts (Raikes, 1967). Raikes, using the rainfall parameter, suggests that the transition from collecting to sowing occurred in areas that lie between the 300 and 500 mm isohyets, and he illustrates the distribution of early sites in relation to these isohyets. He admits, however, that these boundaries are

generalized, and local variations may occur. The evidence of Çatal Hüyük seems to indicate that areas with an average precipitation of less than 300 mm per year were chosen for early settlement if other factors, such as an ample water supply and abundance of animals, were present to counteract this deficiency.

The main water supply of the Konya Plain is provided by the Çarşamba Çay which flows from Lake Beyşehir, through Suğla Gölü and down into the Konya Plain southwest of Çumra. Additional streams enter the basin from a number of the surrounding upland areas. Beyond Çumra the Çarşamba Çay splits into three main branches, with the central branch passing close to Çatal Hüyük and Küçükköy.

The water supply for many of the modern villages in the Konya Plain consists solely of wells, and wells may also have been important at the time of the occupation of Çatal Hüyük. Small irrigation canals also run between the East and West mounds and in other places at the foot of the site. Mellaart considers that the old bed of the river Çarşamba Çay lies between the East and West mounds, and it seems clear that a branch of this river did indeed flow through the Çatal Hüyük-Küçükköy area before the hydrology of the whole region was considerably altered by the construction of an irrigation system in 1912 (Cohen, 1970, Figure 3). However, a sounding drilled by Cohen approximately 200 m southwest of the main mound revealed no indication of fluvial activity, and only lake-bottom clay with an underlying deposit of sand was found (Cohen, 1970, p. 124). The sounding was undertaken in the area through which the river should have flowed if its original course lay between the two mounds, or at least to the west of the earlier East mound. Thus further evidence is required before we can be sure that the site was originally situated on or close to the stream bank. As we mentioned in Section 3, the proximity of the lake-bottom deposits to the present ground surface (only 15 cm below it)

together with the high level of the water table (less than 1 m below the surface) strongly suggest that the site was originally established on or near the present level of the plain—a view at variance with Mellaart's assertion that the 1963 deep sounding penetrated 5 m below the present level of the plain without reaching groundwater or virgin soil. Cohen states that a depth of groundwater as low as 5 m has never been recorded in the Çumra area. Further work is clearly needed to clarify this important point.

The palaeoecological research of Cohen, Erol, and Franks has also focused attention on the possible relationship of the location of the original settlement at Çatal Hüyük to the Pleistocene lake which is known to have existed in the Konya Basin. Oğuz Erol has been able to trace several distinct lake levels in the basin, and he postulates that the land around Çatal Hüyük was established at approximately the same time that the 1002-m level of the lake was formed. This he dates ca. 6750-6500 B.C. in this region (Cohen and Erol, 1969, p. 394). If this is correct, the earliest settlement at Çatal Hüyük was probably established only a fairly short time after the lake had receded from the area, and the settlement may have lain only 6 km or so from the lake shore at the 1002-m contour. Erol's date does, however, indicate that the occupation of the site cannot extend as far back as the beginning of the seventh millennium B.C. as has been suggested (see Sections 3 and 9). This suggestion rests, however, on the uncertain evidence of the depth of deposit remaining below Level XII. On the other hand, further confirmation would be welcome for Erol's dating of the formation of the 1002-m lake level and for the establishment of the area around Çatal Hüyük.

Cohen has also suggested that there may have been more moisture present in the soil in the Çumra area at the time of the occupation of Çatal Hüyük than is the case today. It is notable that the site

was founded on the edge of the area surrounding the village of Küçükköy—termed "former backswamp" by Driessen and de Meester—an area with moderate-to-fairly-poor drainage (Driessen and de Meester, 1969). A further possible indication of moisture in the region is provided by the evidence for porotic hyperostosis, which J. L. Angel takes to imply the occurrence of endemic falciparum malaria amongst the population of Çatal Hüyük, resulting from close contact with anopheline mosquitoes. The source of the mosquitoes may have been the backswamp areas to the north and west of the site.

A major problem connected with the hydrology of the area is that of salinity. It is generally agreed that the irrigation system constructed earlier this century has contributed greatly to increased salinity in some areas and to a general rise in the water table. The available evidence indicates that the Pleistocene lake water in the Konya Basin was fresh, this despite the fact that the lake had no surface outlet (de Ridder, 1965, p. 225). The major source of salinity in the Çumra area is the evaporation of saline groundwater, and Driessen and de Meester estimate that the Çarşamba Çay contributes approximately 100,000 tons of salts annually to the Konya Basin. Before the construction of the irrigation system, the Çarşamba Çay flowed through the Suğla Gölü thus reducing the amount of water which finally reached the Konya Plain. Upon construction of the irrigation system, the flow was canalized to bypass the lake and thus increase the amount of water available for irrigation. Most recently the river has been diverted back to its former course to reduce the quantity of water and to alleviate the problems of salinity and high water table in the Konya Plain. A system has further been devised whereby the surplus water can be pumped from the Konya Plain northwards into the Tuz Gölü. An examination of the soil map of the Çumra area reveals that the region around Çatal Hüyük is classified as slightly or moderately salt

affected (Driessen and de Meester, 1969, loose folding map), and there is some indication that some areas in the fairly close vicinity of the site suffered from salinity at the time the site was occupied. Helbaek has reported the presence of the halophytic Erysimum sisymbrioides among the floral material recovered from the site (Helbaek, 1964, p. 122), and Cohen reports the presence of pollen from halophytic plants in the core taken at the site (Cohen, 1970, p. 129). It seems, therefore, that the process of salinization of at least parts of the Konya Plain has been going on for the past 8000 years or more. It may be postulated that at least parts of the backswamp area to the north and west of the site provided suitable conditions for halophytic plants as well as mosquitoes.

Although some of the former backswamp areas in the vicinity of the site may seem, from the foregoing discussion, to have been somewhat unattractive for agriculture, these soils are classed generally by Driessen and de Meester as Class II, "good soils with moderate limitations or risks of damage," and they can by no means be considered as unsuitable for agriculture. They are not, however, suited to irrigation since, when they are moistened, they swell and prevent the penetration of the water. Only a small area to the southeast of the site consists of Class III soil—former backswamp—the agricultural value of which is low because of poor drainage conditions. Two types of Çarşamba fan soils also occur within the vicinity of the site. These are also good soils, but they are differentiated from the former backswamp soils in that they are suitable for irrigation. As Cohen has pointed out, the location of the site of Çatal Hüyük at the junction of two basically different categories of soils is unlikely to be purely accidental, but it is not clear why proximity to the poorly drained backswamp soils should have been deemed an advantage. A location centered entirely within the Çarşamba Fan soils closer to the town of Çumra would seem more



advantageous from an agricultural viewpoint. Other motivations behind the choice of settlement site must therefore be involved.<sup>80</sup>

We may now examine the evidence for the flora and fauna that existed in the region at the time of the first settlement at Çatal Hüyük. Cohen proposes that the region in which the site was founded was grassland, and that the grass cover served to reduce the rate of evaporation and to facilitate the absorption of moisture. Such a grass cover might account for the greater moisture content of the soil in the Çumra area, which he proposes on the evidence of the Çatal Hüyük fauna. That the plain can easily revert to grassland if protected from human agencies has been clearly shown by the erosion control project undertaken in the very heavily eroded area to the south of the town of Karapınar (Groneman, 1968). Evidence for the existence of such a grass cover at the time of the earliest settlement at Çatal Hüyük should become available from the careful collection and analysis of samples of soils that occur directly beneath the earliest evidence of occupation and above the lake-bottom clay. Further evidence of the nature of the Konya Plain vegetation in antiquity could be derived from analyses of samples containing pollen obtained from archaeological contexts and from cores taken in the area surrounding the site.

Discussion of the prehistoric flora of the Konya Plain must also include a brief examination of the difficulties posed by the natural habitat zone of the various cereals. Several forms of wheat and barley have been found at Çatal Hüyük, and Helbaek has indicated that the plant husbandry of the site must have a long prehistory in another area, since at least some of the wild progenitors would not be native to an area such as the Konya Plain. Helbaek's distribution maps for wild wheat and barley do, however, indicate that central Anatolia as a whole forms part of the native habitat zone for Hordeum spontaneum (the ancestor of domesticated barley) and Triticum aegilopoides (the

ancestor of einkorn) (Helbaek, 1959, Figure 1), and the origin of the Çatal Hüyük cereals might therefore not lie too far from the site. The later maps published by Harlan and Zohary do not include central Anatolia and the Konya Plain in the area of distribution of wild wheat or barley,<sup>81</sup> suggesting that the prehistory of the Çatal Hüyük plants must lie at a greater distance from the site. Cohen is correct in stating that it is unwise to base discussion of the wild habitat zones of plants on the modern ecological aspect of an area such as the Konya Plain, but the balance of the evidence suggests that wild cereals were not part of the prehistoric landscape of the Konya Plain or surrounding regions.

It is usually assumed that the early prehistoric tree cover of the hills and mountains surrounding the Konya Plain was denser and more extensive than it is at present. Evidence for this was found at Çatal Hüyük in the form of seeds for almond, oak, pistachio, apple, juniper, and hackberry, and Mellaart postulates that these were brought from the Taurus mountains to the south of the site (Mellaart, 1967, p. 224). But no evidence has been published concerning possible tree cover within the Konya Plain itself. It is quite possible that the tree cover of the hills surrounding the plain spreads for some distance into the plain, but further information is required on this point. Clearly an adequate supply of large timber for building construction was available to the inhabitants of the site, and analysis of samples of wooden beams indicates the use of oak and juniper for this purpose.

The prehistoric flora of the Konya Plain is also of great significance in determining the faunal resources available to the earliest inhabitants of Çatal Hüyük. The quantities of cattle bones recovered from the site from the earliest levels onward indicate an abundant supply in the areas adjacent to the site, but the question may here be raised about the type of habitat preferred by wild cattle. Cohen

contrasts the views of Butzer, who states that wild cattle favored woodland or forest as a habitat (Butzer, 1971, p. 546), with those of Higgs who has demonstrated a convincing connection between drier climatic periods and large bovines which followed the grassland areas as they moved with climatic change (Higgs, 1961). If it could be proved that cattle always prefer one type of habitat to another, we would clearly have a useful indicator for the vegetative cover of the Konya Plain, but it seems more likely that the habitat varied considerably, and that the presence of large herds of cattle near Çatal Hüyük is not indicative of any particular type of vegetation.

Whatever the nature of the plain, several types of animals were clearly available to the inhabitants of the site. The faunal sample published in brief by Dexter Perkins, Jr. includes sheep and goat, red deer, wild boar, onager, and dog (Perkins, 1969). It is particularly interesting to note that a number of the animals represented in the paintings and reliefs on the site occur rarely if at all in the faunal material recovered so far.<sup>82</sup> This may be partially due to the nature of the area excavated, but Perkins is correct in pointing out that the frequent depiction of certain animals on wall paintings and in reliefs does not necessarily provide an accurate reflection of the economic importance of such animals to the site.

## 11

# Economy, Trade, and Settlement Pattern

Throughout the preceding sections, we have presented evidence indicating the prosperity of the settlement of Çatal Hüyük East, as shown by its architecture, arts, and crafts. This settlement flourished for perhaps one millennium in an area that climatically might be considered less than ideal. At present nothing is known of the reasons necessitating the movement of the settlement to the West mound; an obvious factor in the decision was the gradually increasing height of the East mound, but it is likely that more important considerations were responsible for the change. Very little is known about any aspect of the settlement on the West mound, and only further work can reveal the reasons for the final abandonment of the whole site, probably during the first half of the fifth millennium B.C.<sup>83</sup> In addition to the problems we have concerning the movement of the settlement to the West mound, our consideration of the economic development of the site is hampered by the scanty evidence available for the earliest and latest phases of the East mound. Much information is available for the economic basis of the middle levels of the East mound, but sufficient evidence is not yet available to place it in the wider perspective of the evolution and development of the site as a whole. A

further problem is the possible bias of the data retrieved from the excavated area. Despite these limitations, we must try to arrive at an understanding of the economy of the settlement and to view Çatal Hüyük within the context of the wider cultural system of which it was part.

Presently available evidence indicates that the economy of Çatal Hüyük was based on domesticated cattle, a certain amount of hunting, domesticated cereals, collection of some wild plants, and trade. The importance of plants and animals is fairly clear from the excavated material, but the role of trade, while clearly significant, is more difficult to assess. Wide-ranging trade contacts are displayed by the raw materials used for the manufacture of the various artifacts found on the site, but interpretation of the mechanics of the trade in the various commodities and the part played by Çatal Hüyük within the system as a whole remain hypothetical.

Preliminary publication of the comparatively small faunal sample recovered from Çatal Hüyük indicates the presence of domestic cattle in Level VI, and Perkins suggests that cattle may have been domesticated as early as Levels XII-X (Perkins, 1969). That cattle were domesticated in Level VI has been inferred from the size of the humeri which approximates those found on other Anatolian sites where we presume cattle to have been domestic, in contrast to the larger humeri from Suberde where the cattle are presumed to have been wild. Perkins interprets the lack of limb bones of cattle at Suberde to indicate that the animals were killed at some distance from the site, and thus were wild (Perkins and Daly, 1968). The frequency with which limb bones of cattle occur in Level VI of Çatal Hüyük, on the other hand, indicates (according to Perkins) that cattle were slaughtered close to the site, and were thus probably domesticated. The figures for Levels XII-X are inconclusive, but they suggest that the cattle of these levels were either domestic or killed close to the site. The possibly

more accurate and less subjective technique for determining whether animals were domesticated by studying thin sections of bone under polarized light does not seem to have been applied to the Çatal Hüyük faunal material.<sup>84</sup> The existence of other domestic animals is not confirmed by Perkins' analysis.<sup>85</sup> A few sheep specimens which seem to be from animals smaller than the Anatolian moufflon are reported from Levels I-III, but the size of the sample precludes certainty as to whether the animals were domesticated. Bones of goats are stated to be extremely rare on the site. The lack of certain evidence for domestic sheep and goat is surprising in view of the existence of such domestic animals at other contemporary and earlier Anatolian sites as Er Baba, Çayönü, and possibly Suberde, as well as at sites in other areas of the Near East. Sebastian Payne has argued that the evidence from the aceramic Anatolian sites suggests that the pattern of settled village life dependent on domestic plants and animals including sheep and goat was already established in central and western Anatolia in the seventh millennium B.C. (Payne, 1972). We assume that the absence of domestic sheep and goat at Çatal Hüyük is the result of the area excavated and the sample collected, and that this sample does not accurately reflect the true situation on the site as a whole.

Although cattle seem to have formed the major component of the meat diet at Çatal Hüyük, there is also evidence for the hunting of red deer, wild boar, and onager in small quantities. Small mammals, birds, and fish are also represented in the faunal sample, but no details have been published. The high percentage of the total meat diet of the people of Çatal Hüyük provided by cattle (91.2%) does suggest that cattle rearing was of major economic importance, and that hunting was rather less significant than has been implied by some authorities.<sup>86</sup>

Determination of the economic importance of cereals and other plants at Çatal Hüyük is also limited by the brevity of publication to date and the lack of statistical information. Helbaek's preliminary analysis of the floral material recovered from the site in 1961-1962 revealed the presence of cultivated einkorn, emmer, naked six-row barley, and pea (Helbaek, 1970). The small size of the einkorn grains is indicative of recent domestication, but the emmer grains are very large. The field pea is the most common on the site, but some examples of the purple pea (Pisum elatius) were also found. Some possible evidence for bread wheat was recognized in Level VI, but Helbaek has some reservations about this. Bitter vetch (Ervum ervilia) is also attested in Level VI. Plants probably gathered from the area around the site include two-row barley (Hordeum spontaneum), a vetch (Vicia noeana), Shepherd's Purse (Capsella bursa-pastoris), Erysimum sisymbrioides, two grasses (Taeniatherum and Eremopyrum), lesser bindweed, and two rootstock tubers of sea club rush in addition to those seeds (mentioned in Section 10) that may have been brought from the Taurus mountains. Helbaek suggests that the occurrence of certain marsh plants indicates the existence of a rudimentary form of irrigation, but it seems likely that such plants might be found in parts of the area of former back-swamp near the site, and that irrigation was probably unnecessary. Whether or not flax occurred on the site is still unknown; Ryder has identified some of the Çatal Hüyük textiles as flax by means of optical and chemical analysis (Ryder, 1965), but other authorities have identified them as wool.<sup>87</sup> Final publication of the floral material will certainly increase the number of plants listed here, but it is already clear that cereals were widely grown and that the diet was supplemented by various plants and seeds collected locally and brought from the mountainous areas around the plain.

Before discussing the significance of trade in the Çatal Hüyük economy, we must attempt to estimate

the size of the population of the site in relation to the carrying capacity of the area. Calculation of population size is dependent on a number of variables, most of which are unknown. The whole area of the East mound may not have been occupied at one time; thus an estimate of 31 to 45 rooms in the excavated area (approximately 1/30 of the site) in Level VI does not necessarily indicate a total of a little over 1000 rooms for the whole site at this period. Furthermore, the figure of 31 to 45 rooms includes from 11 to 15 buildings interpreted by Mellaart as "shrines," and it is far from certain that a reasonably accurate population estimate can be achieved by the simple multiplication of the number of rooms by a figure of 5+ for the normal family size. But using such methods, Angel estimates the population of the site at between 5000 and 6000.<sup>88</sup> Cohen reports an estimate of "well over 5000" in correspondence with Mellaart, but the basis for this figure is not given (Cohen, 1970, pp. 122-123). Population estimates based on numbers of burials are equally liable to give false results as Sherburne Cook has stated (Cook, 1972); the total number of burials has not been published for any particular level of the site, but Mellaart has commented that the number of burials is generally below the figure that might be expected. On the assumption that the dead buried below the shrines are part of the population of the houses, Mellaart estimates a figure of 28 dead per house (in Level VI B and A) spread over six generations. (This equals 4-5 dead per generation per house) (Mellaart, 1967, p. 206). Such a figure can be taken as representative of the average building on the site, but it does not take into account those killed away from home and whose bodies were either not recovered, or at least not brought back to the site for burial. As stated previously we cannot be certain of even the approximate number of buildings on the site at any one time. An estimate of approximately 1000 buildings might suggest a population of 4000 to



5000, but Mellaart has also suggested on the evidence of the platforms within buildings that a family might have consisted of up to eight individuals. A considerably higher population figure might thus be appropriate. Without more extensive excavation on the site and detailed burial figures, it seems fruitless to try to achieve greater precision than this considering the number of variables. We would therefore suggest a population of between 5000 and 10,000 with preference being given to the lower end of the scale. Only when we know the extent of the settlement in any given period, the area of the settlement that represents living quarters in that period, and the number of burials per dwelling unit in that period can we obtain the greater precision that is essential if we are to understand the relationship of the population size to the carrying capacity of the region around Çatal Hüyük.

In order to define the carrying capacity of the Çatal Hüyük area, we can analyze the territory within a 5 km radius of the site.<sup>89</sup> Various works suggest that the exploitation of areas at a distance greater than 5 km would not be economically feasible. The exploitation territory of Çatal Hüyük should perhaps be more accurately limited, as Chisholm suggests (Vita-Finzi and Higgs, 1970, p. 7), by walking time rather than by an artificial 5-km limit, but for the purpose of this study such a limit will suffice. The radius around the site encompasses two main types of soils—former backswamp and Çarşamba fan soils (Driessen and de Meester, 1969, loose folding map). The backswamp soils, unsuitable for irrigation, are classified in five types, some moderately and some poorly drained. Melons, cereals, and sugarbeets are grown on them nowadays and a few saline areas are used for grazing (Driessen and de Meester, 1969, p. 37). The Çarşamba fan soils are classified in three types, all with adequate drainage. Irrigation is possible, but dry farming also occurs. The main crops are wheat, barley, sugarbeet,

melon, oats, and alfalfa (Driessen and de Meester, 1969, p. 33). Of the 7850 hectares (ha)<sup>90</sup> within the 5-km radius of the site, the majority of the area would have been suitable for cereals, while some small poorly drained areas would probably have been utilized only for grazing. The total cultivable land available to the inhabitants of the site was probably approximately 7500 ha. If we accept that some fallowing system must have been used to maintain soil fertility (one year of cropping followed by one year fallow?), the total land area available each year would approximate 3750 ha. Allan suggests a figure of approximately 600 kg of grain per hectare as the general yield level (Allan, 1972, p. 214), and this compares with a figure of more than 1100 kg per hectare for modern crops in the Konya Basin without fertilizers but employing a fallow system (Janssen, 1970, Table 22, p. 73). But if the 600 kg figure is retained, a total yield of 2,250,000 kg of grain might be postulated annually. An annual grain requirement of approximately 300 kg per head of the population suggests that the exploitation zone of Çatal Hüyük could have supported a population of 7500. If calculation is based on the figure of 1.5 ha of cultivable land per head of population, based on a fallow system, the carrying capacity of the Çatal Hüyük region would be approximately 5000 people (Allan, 1972, p. 214).

We cannot estimate the number of cattle kept by the inhabitants of Çatal Hüyük accurately. Based on a figure of 3750 ha of fallow land each year with a density of approximately one animal per hectare, the total herd could have numbered 3750. In fact, if the conditions in the Çatal Hüyük area were as favorable for cattle rearing as some authorities have suggested (Cohen, 1970, p. 123), the density might have been considerably higher. It does, however, seem unlikely that the herds were as large as this considering the necessity for storage of food for the winter months when pastures might be covered with snow. Angel has pointed out that a population

at Çatal Hüyük of 5000 to 6000 would have required three head of cattle per day (or almost 50 sheep or goats) to supply adequate meat protein for all (Angel, 1971, p. 89), and it is certainly unlikely that the herds were so large that more than 1000 cattle could be slaughtered per year without seriously depleting or annihilating the available livestock. The evidence of dental disease also supports Angel's contention that the daily meat ration at Çatal Hüyük was in the order of 1/5 or 1/10 of the optimum of the Upper Palaeolithic. We suspect that flocks of sheep and goats were kept beyond the 5-km radius of the site, but the osteological evidence actually found on the site is so scanty and difficult to interpret that we can draw no important conclusions from it.

The preceding evidence suggests that the carrying capacity of the Çatal Hüyük area must lie between 5000 and 7000 people, or approximately one person per hectare. Angel has stressed the high rate of increase in the population based on his analysis of the human skeletal material. He estimates an annual increase of 0.8%, which would result in the population being doubled in less than a century (Angel, 1971, p. 82). If we assume an initial settlement of about 50 people ca. 6500 B.C., the carrying capacity of the area would have been reached ca. 5800 B.C. if not earlier. In fact, Zubrow mentions evidence to indicate that emigration from a certain site may begin as soon as population pressure begins to be felt, before the carrying capacity is reached.<sup>91</sup> Thus the turning point at Çatal Hüyük may have occurred about 6000 B.C. Is it purely an accident of the archaeological record that Level VI seems to mark the height of the settlement on the East mound? Only further excavation can provide the answer.

The importance of trade in the economy of Çatal Hüyük has been stressed by Mellaart, and it can clearly be seen from a brief examination of the objects found on the site and the materials employed.

Reeds, clay, and small timber were probably available locally, but all other materials must have been imported from the area surrounding the plain as well as from farther afield. The following list, which is not comprehensive, indicates the variety of the imports.<sup>92</sup> In most cases, possible or probable sources have been indicated by Mellaart in his various publications, and these need not be repeated here. But scientific analysis should be undertaken to locate sources more precisely. Imported materials include: obsidian, flint, chert, marble, alabaster, calcite, limestone, red ocher, slate, mica, schist, serpentine, chalk, pumice, malachite, apatite, rock crystal, carnelian, jasper, chalcidony, lazurite, fossil coral, greenstone, various volcanic rocks, stalactites, vermilion, sulfur, iron oxides, cinnabar, copper ores, haematite, limonite, manganese, galena, lignite, various shells of Mediterranean and Red Sea type, salt, timber, and foodstuffs. In addition to these items, other perishable materials of which no clear trace has remained in the archaeological record may have been imported. It is also possible that objects such as wooden vessels may have been made in the hill country and imported in finished fashion to Çatal Hüyük. Little information is available concerning items supplied in exchange for the raw materials, but finished goods, food, and textiles were probably the main commodities traded.

The extensive use of obsidian for the manufacture of chipped stone tools and other objects, such as mirrors, was discussed in Section 8. Since Mellaart published his reports, more detailed information has come to light concerning the various obsidian sources in Anatolia, but major problems still exist in determining the role played by Çatal Hüyük in this trade. Two major groups of sources exist within central Anatolia, one near the small town of Acıgöl between Aksaray and Nevşehir, the other near the village of Çiftlik northwest of Niğde.<sup>93</sup> In both cases, several distinct sources

have been located within each area. It is not yet possible to determine precisely from which obsidian source material was derived for a certain artifact found on a site. Several research programs have recently been undertaken to try to determine the provenance of obsidian artifacts found on sites in Anatolia and other areas of the Near East. Material collected from obsidian sources has been analyzed by neutron activation and by optical spectrographic methods, and the results of these analyses have been compared with those of artifacts from the various archaeological sites. In a number of instances we can now state with reasonable certainty from which source(s) a certain site obtained its raw material. Obsidian from the Acıgöl area has been found as far south as Byblos on the Lebanese coast, and that from Çiftlik reached Beidha near Petra in southern Jordan. The Çiftlik source seems to have been the more important in the earlier prehistoric period in supplying sites south of the Taurus mountains. A small amount of obsidian from the east Anatolian sources has also been recorded at sites in Syria and Jordan, such as Ramad and Beidha.

Several obsidian samples from Çatal Hüyük East were analyzed by the Renfrew, Dixon, and Cann program (Renfrew, Dixon, and Cann, 1966, p. 44). The published results show that three of the four samples analyzed derive from the Acıgöl area, while analysis of the fourth indicates a composition similar to material from east Anatolian deposits. No other evidence exists to support the idea that any material was derived from eastern Anatolia,<sup>94</sup> and no great significance should be attached to this sample. It is important to note that in almost all cases only a few samples of obsidian have been analyzed from the various sites, and the picture of early prehistoric Near Eastern trade therefore rests on rather slender evidence. It is now necessary to test large numbers of samples from each site and, if several sources are represented, to find out in what proportions the various sources were utilized.

Although three of the four Çatal Hüyük samples tested by Renfrew et al. seem to be conclusively of Acıgöl origin, analyses undertaken by Gary Wright indicate that the material on the site cannot at present be positively identified with that from any of the known sources (Wright, 1969, p. 21), and much further analytical work is necessary before a complete and accurate picture will be available. Further analysis of obsidian from Acıgöl and Göllü Dağ (Çiftlik area) by Dr. Mahdavi of the Tehran University Nuclear Center indicates a considerable similarity between the sodium and manganese content of samples from both areas.<sup>95</sup> In addition to these uncertainties, a further problem exists. A recent study has shown that considerable variation in composition may be encountered among samples derived from the same source (Bowman, Asaro, and Perlman, 1973), and this further reinforces the necessity for the testing of large numbers of samples from every source and site, and not just the usual three or four as has been done in the past.

In view of these uncertainties, any discussion of the role of Çatal Hüyük in the obsidian trade must be mainly hypothetical. Even if we accept that most of the obsidian used at the site was obtained from the Acıgöl area, we still cannot paint a convincing or coherent picture of the trade. From the analyses of Renfrew et al., it seems that the Acıgöl obsidian was exclusively used in the western part of the Konya Plain and the Lake District, but the number of sites is small and the amount used in those areas is not such as to bestow great wealth on the major supplier nearer the source. On the other hand, the aceramic site of Aşıklı Hüyük south-east of Aksaray seems to have obtained its obsidian from the Çiftlik source area (Renfrew, Dixon, and Cann, 1968, p. 321), and is well situated in a position to control the Çiftlik sources and the large amounts of material extracted from those sources destined for sites to the south of the Taurus mountains. We have suggested elsewhere that

extraction of obsidian from a source may have been undertaken by the inhabitants of a site located close to the source, and that such a site may have been controlled by a major central site farther away from the source.<sup>96</sup> This is a possible explanation for the relationship of Tepecik-Çiftlik to Aşıklı Hüyük. It can also be suggested that the site of İğdeli Çeşme near the Acıgöl sources possesses a similar relationship to Çatal Hüyük, but this is scarcely borne out by the lack of Çatal Hüyük type pottery at the former site.<sup>97</sup> Proprietary rights may have been exerted over the obsidian sources by a few major sites together with their satellite communities, but evidence for this will be extremely difficult to obtain from the archaeological record. The detailed mechanics of the obsidian trade will be discussed at greater length in the forthcoming final publication of the author's survey material from central Anatolian sites.

Earlier in this section, attention was drawn to the rapid population increase at Çatal Hüyük. It was stated that the carrying capacity of the area may have been reached, or at least that emigration from the site may have begun, after Level VI, and this would presuppose the existence of a number of smaller settlements in other parts of the Konya Plain and the surrounding area. Such sites have been located near the eastern end of the Konya Plain, in the Lake District to the west of the plain, in central Anatolia south of the Kızılırmak River, and to the south of the Taurus Mountains in Cilicia. The location of these various sites must now be examined in relation to Çatal Hüyük, to see whether we can observe a meaningful settlement pattern and relationship.

In a recent paper on this subject, Bartel uses factor analysis of pottery and stone tools to arrive at the four groups of sites already mentioned (Bartel, 1972). He states that the sites are spaced in a circle centering upon Çatal Hüyük, and that nearest-neighbor-analysis shows the sites to be

"spaced uniformly in this circular region approaching hexagonal fields, which allow optimal interconnection between parts ...." It is indeed likely that Çatal Hüyük represented a large central place and that it acted as a form of "gateway town" to those approaching the central Anatolian source area from the west. Clearly it must have provided a center for local exchange of obsidian and for trade in raw materials and finished products. But the major problem concerns the extent to which we can hypothesize, on the available evidence, a pattern of interaction spheres. It must be clearly understood that no sites with clear affinities to Çatal Hüyük have been found in western Anatolia to the west of the Lake District, in northwestern Anatolia, in central Anatolia to the north of the Kızılırmak River, or in any plateau region to the east of Kayseri. We are thus presented with groups of sites in four separate, but adjacent, regions that are clearly linked on artifactual evidence. But at present this "supra-community" (as Bartel terms it) stands in a total vacuum. It is as if the map of Anatolia is brightly illuminated in the area of the Konya Plain and immediately adjacent areas, with the rest of the map in darkness. Thus, while we can formulate hypotheses concerning the relationship of the sites within this particular interaction sphere, we have no knowledge whatsoever of any interaction which may have taken place with the other contemporary spheres that may have existed. It can be argued that other spheres did not exist, and that much of Anatolia was not occupied at this period, but common sense and the scanty archaeological evidence available militate against this. If there is any validity in theories which postulate early prehistoric connections between the Anatolian Plateau, Macedonia, the Peloponnese, and Crete,<sup>98</sup> settlements approximately contemporary with Çatal Hüyük must have existed in western and northwestern Anatolia. It can only be stated that the artifactual evidence of such occupation has not yet been recognized.



While we believe that further research will probably substantiate the basic model proposed by Bartel to account for the similarities observed between the various sites, the need for further data cannot be overemphasized. It is clearly necessary to have at least some understanding of the nature of the sites themselves before they can be incorporated into such a model. No excavations have yet been undertaken on any of the sites at the eastern end of the Konya Plain or in the central Anatolian area south of the Kızılırmak. These sites are mainly known from the author's field survey, and there are strong indications that some of them do not represent permanent agricultural communities. In several cases there is no evidence of the deep occupation deposit which would suggest permanent settlement; in other cases the location of the sites may be dependent on proximity to the obsidian sources. Only when such information is at hand can the techniques of locational analysis be safely applied, and the validity of the model verified.

An understanding of social organization within the interaction sphere would also be of assistance in determining the relationship among the various sites. But the problem here is twofold: first, the lack of data from the sites themselves, and second, the lack of agreement on terminology. Early farming communities with no evidence of social differentiation have been termed "egalitarian tribes" while communities with extensive evidence in the form of differentiated architecture, grave goods, and other features have been discussed in the framework of "hierarchical societies" or "chiefdoms."<sup>99</sup> We have argued elsewhere that the concept of an "egalitarian" community seems to have little validity except in a restricted economic sense, and that the chiefdom category has been so loosely defined and is so widely applicable that it is seriously in need of amplification if it is to be of service to prehistoric archaeology (Todd, 1974). Evidence of chiefdoms has been seen in the Halafian sites,<sup>100</sup> in the

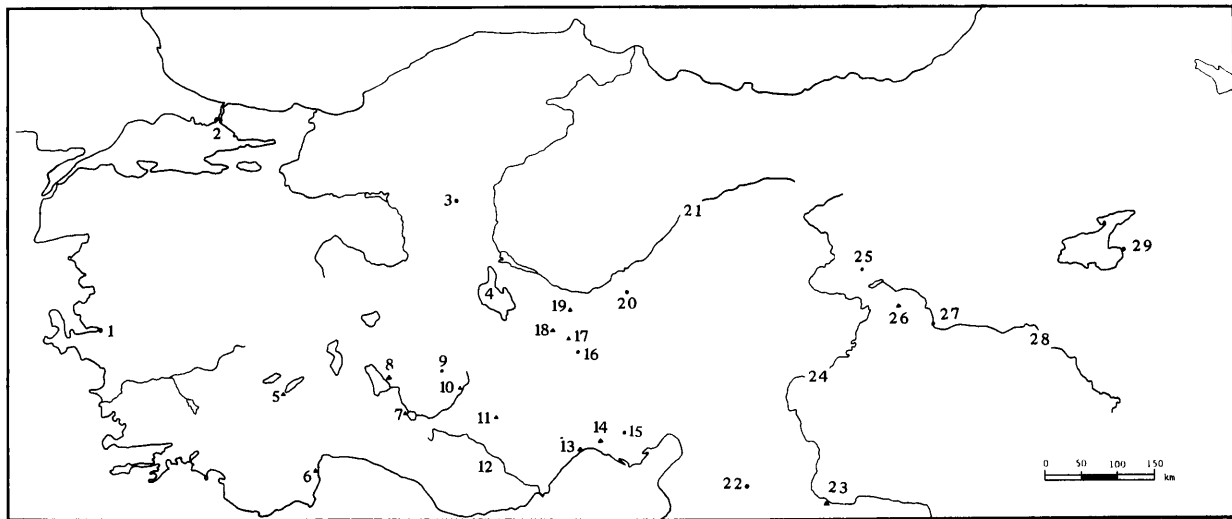


Figure 54. Map of major early prehistoric sites mentioned in the text. Key:  
 1. Izmir 2. Istanbul 3. Ankara 4. Tuz Gölü 5. Hacılar 6. Beldibi 7. Suberde  
 8. Erbaba 9. Konya 10. Çatal Hüyük 11. Can Hasan I-III 12. Tarus Mountains  
 13. Mersin 14. Tarsus 15. Adana 16. Niğde 17. Tepecik-Çiftlik 18. Aşıklı H.  
 19. İğdeli Çeşme 20. Kayseri 21. Kızılırmak 22. Aleppo 23. Abu Hureyra  
 24. Euphrates 25. Elâzığ 26. Çayönü 27. Diyarbakır 28. Tigris 29. Van

Aegean and Near East in the third millennium B.C. (Renfrew, 1972, Chapter 18), and in numerous other contexts differing widely in date and geographical location. In fact, the chiefdom category could be applied to Jericho PPNA as loosely defined by Renfrew, and Çatal Hüyük could be viewed in a similar manner. Interpretation of the data from Çatal Hüyük is once again seriously hampered by the nature of the excavated area. Since a complete cross section of the site has not yet been excavated, we do not know to what extent evidence of social stratification may be found there. Further excavation may reveal areas of poorer dwellings without the refinements frequently seen in the buildings excavated to date. Burials in such an area might show marked differences from those already uncovered, and thus more solid evidence would be provided for a clearly hierarchical society. That the complex nature of the site of Çatal Hüyük presupposes a considerable degree of social organization cannot be doubted, but whether the society was indeed matriarchal as has been suggested is unknown. Analysis of this most important aspect of the site and of the interaction sphere as a whole must await further data from excavation designed with this problem in mind.

## 12

# The Place of Çatal Hüyük in Anatolian and Near Eastern Prehistory

The excavations at Çatal Hüyük have revolutionized our views of prehistoric Anatolia and the Near East as a whole. Although partially contemporary excavated sites, such as Suberde, Erbaba, and Mersin, exist in various parts of Anatolia, none have produced evidence of the high level of achievement that is apparent at Çatal Hüyük. The site itself is the largest known early prehistoric settlement in the Near East, and the area of architecture uncovered to date is more extensive than elsewhere for this period. The regularity of the town plan indicates a sophistication seldom visible on other sites, and many of the artifacts display the highest standard of skilled craftsmanship. The wall paintings and relief figures are mostly without parallel. Mellaart has commented that the "neolithic civilization revealed at Çatal Hüyük shines like a supernova among the rather dim galaxy of contemporary peasant cultures" (Mellaart, 1965c, p. 77). The preeminence of Çatal Hüyük in many fields of endeavor is clearly apparent, but this does not preclude the discovery of other similar sites in other regions of Anatolia or the Near East. Similarly favorable conditions to those which governed the location and growth of the site in the Konya Plain may have existed in a number of different regions, and future excavation

will likely reveal other "urbanized" settlements of this early period. In his consideration of the Konya Plain sequence as a whole, French notes that the settlement at Çatal Hüyük East was preceded by a small site (Can Hasan III) and was succeeded by small sites (e.g., Çatal Hüyük West and Can Hasan I), and that large sites do not reappear until the third millennium B.C.<sup>101</sup> Such a simplified scheme may be accurate for the Konya Plain, although it does not allow for the lack of excavated data. Only five sites have been excavated in the plain (Can Hasan III and I, Çatal Hüyük East and West, and Karahüyük-Konya), and the evidence of a surface survey of sites can be highly misleading (French, 1970, p. 142, note 4). But even if the Konya Plain lacks any large sites immediately before or after the period of Çatal Hüyük, available evidence already indicates that this is not the case in other parts of Anatolia. The unexcavated site of Aşıklı Hüyük (Todd, 1966 d), southeast of Aksaray, is a large one-period aceramic site with extensive evidence of mud brick architecture and the manufacture of obsidian artifacts. C-14 dates obtained from samples taken from the eroded river sections provide confirmation of the pre-Çatal Hüyük date initially suggested by the lack of pottery and the lithic typology (Todd, 1968). Although evidence of the economic basis of the site can only be revealed by excavation, it is very likely that the role of Aşıklı Hüyük ca. 7000 B.C. would have been somewhat similar to that of Çatal Hüyük ca. 6000 B.C. Aşıklı Hüyük may well have served as the central place within a "supra-community," of which Can Hasan III might be considered a part, but known sites of the aceramic phase are few in number, and the available data are insufficient for the formulation of a detailed model. Be that as it may, the Aşıklı Hüyük evidence clearly points to the existence of large sites before the time of Çatal Hüyük, and others will probably be found in the future for succeeding periods.

No suitable candidates have yet been found for the post-Çatal Hüyük East period. The available data from the later sites of Hacılar, Çatal Hüyük West, and Can Hasan I certainly do not suggest that all three sites formed part of the same interaction sphere, and their relationship is uncertain. Furthermore, none of them provide evidence of sufficient complexity to suggest that they were anything but part of interaction spheres, the centers of which still remain to be located. The nature of and reasons for the end of settlement on Çatal Hüyük East are unclear. Mellaart has suggested that the site with its successors "burnt itself out," and French questions whether this might be a suggestion that Çatal Hüyük East "collapsed because it had overreached itself" (Mellaart, 1965 c, p. 77 and note 101 of this book). In fact, it would seem from the analysis in the previous section that Çatal Hüyük East began to "burn itself out" sometime after Level VI, but only further excavations can throw light on this. Whatever the reasons for the final abandonment of the site area, Mellaart is correct in stating that the site "left no permanent mark on the cultural development of Anatolia after ca. 5000 B.C." (Mellaart, 1965 c, p. 77), although we must not forget the paucity of evidence for the period ca. 4500-3500 B.C. in Anatolia.

When compared with contemporary sites in other parts of the Near East, Çatal Hüyük East still retains its preeminent position. Sites of the period are known in a number of regions and different ecological zones, varying from well-watered situations beside rivers such as Abu Hureyra, beside the Euphrates in northern Syria, to the site of Umm Dabaghiyah west of Hatra in Iraq which currently has no water supply at all. These sites do not display the sophistication and complexity of Çatal Hüyük, but final reports must be available for cases such as Abu Hureyra before adequate comparisons can be made. It is indeed likely that complex "supra-communities" may exist in favorable regions of the

Near East outside Anatolia, and there is reason to hope that excavation combined with suitable analytical techniques will bring these to light in the future.

There is already evidence that Çatal Hüyük, with its probable precursor, Aşıklı Hüyük, does not provide the earliest evidence for such a system. The PPNA settlement at Jericho with its extensive fortifications and sizable tower, dated ca. 8000 B.C., may be more intelligently interpreted in the light of the evidence from Çatal Hüyük. Much discussion has centered upon the economic basis of the site, and various authorities have favored trade or efficient agricultural practices coupled with irrigation to account for the clear evidence of economic surplus (Anati, 1963, pp. 241-250). While both of these aspects seem to be partially responsible for the complexity of the site (although extensive irrigation seems dubious), they do not provide the whole answer. Comparison with Çatal Hüyük suggests that the inhabitants of Jericho not only exploited the surrounding area with great efficiency, but that the site itself served as the center of a much larger group of sites united by common artifact types and, to a certain extent, also by trade. The parallel between Jericho PPNA and Çatal Hüyük may be further strengthened in that Jericho may also have acted as a "gateway town" in proximity to the natural resources of the Dead Sea area. Viewed in such a light, the settlement at Jericho does not seem so astounding; it merely supports the evidence of Çatal Hüyük that a combination of certain extremely favorable conditions may result in the growth of a sizable and highly complex society whatever the period or area. Whether the end of the PPNA settlement at Jericho is in any way parallel to that at Çatal Hüyük East remains to be analyzed when more data are available. But it is clear that while Çatal Hüyük was totally abandoned about the middle of the fifth millennium B.C., the site at Jericho continues to be occupied (with gaps) until the present.

In assessing the position of Çatal Hüyük within the wider framework of Near Eastern prehistory, we must examine briefly the relationship that has been postulated with the Halafian "culture" centered in southeast Anatolia, north Syria, and northern Iraq. Mellaart draws attention to supposed Anatolian features to be found in the Halafian tradition, and he cites religion (including a bull cult), metal-working, weaving, and fine painted pottery as reminiscent of the Anatolian sites. He further suggests a possible relationship between the demise of the Anatolian sites and what he regards as a "shift of the cultural centre of the Near East eastward," to be followed in time by a further shift to southern Mesopotamia (Mellaart, 1965c, p. 125). We feel, however, that the supposed Anatolian features in the Halafian assemblage are just as likely to be of local inspiration, and that the recently proposed high chronology for Halafian sites does not support the view of "cultural shift." It has been suggested that the earliest Halafian material may date back to almost 6000 B.C. (Mortensen, 1970 b, p. 137), and the Halafian sites would thus form a contemporary sequence to the Anatolian sites of Çatal Hüyük East and West, Hacılar, and Can Hasan I. We disagree with Braidwood's view that "the Çatal Hüyük materials suggest a westerly variant of the assemblage known in the upper Tigris-Euphrates region as the Halafian ..." (Braidwood, 1967, p. 125). The connections between the two areas are tenuous at best, and due note must be taken of the geographical distance which separates the two regions (approximately 1250 km from Konya to Mosul by road). Formulation of connections between such widely separated areas must rest on firmer evidence than that presented so far.

In conclusion, it may be stated that the major contribution to the excavations at Çatal Hüyük to Near Eastern prehistory, and to the history of mankind as a whole, lies not so much in the light cast upon the artistic achievements of a people who lived



on the Anatolian plateau approximately 8000 years ago, but more importantly in the insight that has been provided concerning the ability of man at this early period to adapt to a certain environment and to utilize the available resources to the maximum. The various works of art discovered at Çatal Hüyük are, indeed, of great value for the history and development of western art, but the significance of the site is far deeper. Western civilization can be traced back to its prehistoric Near Eastern origins, and Çatal Hüyük, perhaps more than any other Near Eastern site, has contributed to our knowledge of man at the time when he had but recently adopted a settled form of existence dependent on domesticated plants and animals rather than on hunting and gathering. The settlement represents an early and very successful example of man's ingenuity in coming to terms with his environment—an effort that still continues today.

## Notes

1. Modern Turkish spelling of place names has been used throughout this book. For the pronunciation of the Turkish letters c, ç, i, ı, ö, ş, and ü, see Lewis (1967). Çatal should be pronounced as if spelled Chatal. Several Turkish words occur frequently in the text and may be translated as follows: çay = stream; çeşme = fountain; göl = lake; hüyük = mound; in = cave; ova = plain; pınar = spring; dağ = mountain; tepe = hill; tepecik = small hill.
2. For the first preliminary report on Mellaart's survey, see Mellaart, 1954.
3. For the preliminary reports see Mellaart, 1958, 1959, 1960, and 1961 b. For the final report see Mellaart, 1970 a.
4. The climate of the plain is classified as Xerothermomediterranean in UNESCO-FAO, 1963, matching that of the Tuz Gölü Basin and a short stretch along the Kızılırmak River from south of Kırşehir to approximately east of Bala. According to Köy İşleri Bakanlığı, 1968, Table 4, the average annual precipitation at Konya is 315 mm, Çumra 214 mm, and Karaman 342 mm. de Meester, Ed., 1970 quotes a figure of 249.3 mm for Çumra based on nine years of observations. See de Meester, Ed., 1970, Table I,

pp. 30-33 for a useful tabulation of climatic data for the Konya Plain region. For the publication of various soil studies undertaken in the Konya Basin by members of the Agricultural University, Wageningen, the Netherlands, see de Ridder, 1965; Groneman, 1968; Driessen and de Meester, 1969; de Meester, Ed., 1970; Driessen, 1970; Janssen, 1970; and de Meester, 1971.

5. For agricultural production maps of Turkey see Tanoğlu, Erinç, and Tümertekin, 1961.

6. Information and material from Professor H. Bowen Jones. For a study of the Karapınar area see Groneman, 1968.

7. As Mellaart stated in 1966 a, p. 167. Parts of four Level-XII structures were excavated to floor level, and only the tops of Level-XIII walls were uncovered.

8. For a description of the sounding see Mellaart, 1966 a, pp. 166-169.

9. For discussion see Mellaart, 1966 a, p. 172.

10. Mellaart (1962 a, Figure 4) originally believed that doorways giving access to the courtyard outside, existed in some houses. He later stated (1963 a, p. 52, note 12) that this view was erroneous, and that the gaps which he had taken to be doorways were due to later disturbance.

11. Sandy bricks without straw were also used in Level III.

12. Wood samples from A.VI.1 (=VI.61) were identified as oak and juniper.

13. Mellaart, 1967, p. 63. Elsewhere (1962 a, p. 70) a figure of 2.7 m is quoted.

14. No evidence for the use of wood in architecture is reported for the sites of Hacılar (Ac ceramic), Suberde, and Can Hasan III. The postulated use of perishable material above the stone foundations at

Çayönü in Phase II ("grill building" level) does not suggest any parallel to Çatal Hüyük. Nothing is known of the architecture of Aşıklı Hüyük since it has not been excavated.

15. A parallel for the replastering at Çatal Hüyük is to be found in the Pueblo kivas in the Southwestern United States. Watson Smith states that the practice of replastering kivas was widespread, and in some cases more than 100 layers of plaster were recorded (Watson Smith, 1952, p. 19 and Figure 34:c). In Room 218 at Awatovi more than 100 layers of plaster occurred, 26 of them painted. The total thickness of plaster recorded here (11 cm) approximates the greatest thickness found on the walls at Çatal Hüyük. It is suggested that while seasonal replastering may have been customary in some of the Hopi kivas, it is unlikely that any of them would have been occupied for as long as 100 years, and that in at least one instance replastering must, therefore, have taken place more frequently. The reason for the replastering is uncertain, but ritual obliteration is a possibility, and modern analogies have been recorded. It is interesting to note that in a number of cases the wall paintings were visible only for a very short time, and such may have been the case at Çatal Hüyük.

16. The "town-plan" painting is a good example. See Mellaart, 1967, Plate 60.

17. For a note on recent conservation work on the paintings see Pratt, 1970.

18. Mellaart, 1967, p. 81, Figure 13 contains such a tabulation which covers only the material found during the first three seasons of excavation.

19. Mellaart, 1967, p. 131. But a small amount of light pink paint, which turned dark on exposure to air, seems to have been organic.

20. The plain red panels continue in use in Level II. One example of a black panel was found on the

north wall of VII.21 below the vulture painting.

21. Mellaart, 1967, p. 170 and Plates 56-57. For a color photograph see Mellaart, 1965 c, illustration 50. In the original publication (Mellaart, 1963 a, p. 49 and Plate V(a)), the room was numbered A.III.11.
22. Kökten, 1961. For a general discussion see also Anati, 1968.
23. For tabulation of data concerning the reliefs found in the first three seasons of excavation, see Mellaart, 1967, p. 81, pp. 102-103.
24. Published in color in Mellaart, 1967, Plate VII.
25. In his preliminary discussion of the pair of figures found on the north wall of VI B.12 (originally published as VII.1) Mellaart suggests that one figure might be male and one female, but the evidence is inconclusive.
26. Only one figure was found on the west wall of VII.1, but the asymmetrical position of that figure in relation to the bull's head below it, and the damage to the plaster beside the figure, suggest that there were originally two figures side by side.
27. The best example of this occurs on the east wall of VI.8. Mellaart, 1963 a, Figure 13.
28. Some of the captions to the relevant photographs in Mellaart, 1967 and 1966 a, state that the animals are on the west wall. This is erroneous. The opposing pair of animals was found on the north wall in both VII.44 and VI.44, and there is an additional relief animal on the east wall of VII.44. No animals were found on the west wall.
29. Mellaart suggests the existence of an extra-mural cemetery at Hacilar (Aceramic). Several skulls were found but no associated skeletons. However, the excavated area was small, and the evidence is not conclusive. The same may be said for Can Hasan III from which no human skeletal material has been

reported. No burials have been found at Çayönü where a sizable area has now been excavated. Similarly, burials have not been found in situ at Erbaba Tepe. No burials were encountered in the Late Neolithic levels of Hacilar, and an extramural cemetery must here be postulated.

30. For discussion of one further wall painting from E.IV.1 which may represent part of a funerary rite, see Mellaart, 1967, p. 168 and Plates 50-51.

31. These skeletons were not examined by Angel.

32. For details of the other burials see Mellaart, 1966 a, p. 183.

33. Other burials have been found at Jericho PPNB, 'Eynan, Nahal Oren, Ramad I, and T. Abu Hureyra.

34. This burial was originally published as female (Mellaart, 1966 a, p. 182). cf. Angel, 1971, p. 79 and Plates I and III.

35. This burial was not available for examination by Angel. The provenance for 60 CH (Angel, 1971, Plate II, bottom left) should be VII.31 and not VIII.31.

36. Personal communication from Dr. Angel.

37. In a list which Dr. Angel very kindly made available to me the ten burials below A.III.1 comprise four adult males, three adult females, one adolescent, and two children. The sixteen burials below F.V.1 comprise five adult males, ten adult females, and one child.

38. Dr. Angel thoroughly examined all the skeletal material available to him for pathology and demography, but the statistics quoted in his report indicate that some material was not available to him. The following information is mainly derived from Angel's published report.

39. Mellaart, 1966 a, p. 170. This corrects an earlier view (Mellaart, 1964 a, *passim*) that some of the earlier levels were aceramic.
40. A unique painted sherd with red and black decoration on a cream slip was found in VI B.70 (Mellaart, 1966 a, Plate XLIX:b).
41. For a description of the Çatal Hüyük West pottery see Mellaart, 1965 a.
42. Beyşehir region: Mellaart, 1961 a. For related material at Er Baba T. see Bordaz, 1969 and 1973. Central Anatolia: Todd, 1966 a. Final publication is forthcoming in the series *Studies in Mediterranean Archaeology*, Göteborg. Cilicia: Garstang, 1953; Mellink in Goldman, 1956. 'Amuq: Braidwood and Braidwood, 1960. Levant: Mellaart, 1970 c, p. 313.
43. Watkins, 1969, p. 37 and Lehigh, 1974, p. 96 and Plate I.
44. I am greatly indebted to Professor Jay D. Frierman for this information.
45. Bialor, 1962, mentions the use of both flint and chert. Mortensen informs me that the material used for daggers and knives is exclusively a fine type of tabular flint. While chert occurs commonly in many parts of Anatolia, true flint seems to be rare or absent on the Anatolian Plateau. Bordaz, however, mentions the possibility of the existence of flint deposits to the west of Lake Beyşehir (1969, p. 61). Since flint is only a specialized refined form of chert, and since both terms have been used very loosely in the past, it might be best to abandon one or the other term unless scientific analysis is available. I am indebted to Elizabeth French and Yvonne Wells for information on this subject.
46. The Level-VIII material discussed by Bialor was subsequently redated to Level VII (Mellaart, 1964 a, p. 111).

47. My thanks are due to Peder Mortensen and James Mellaart who kindly allowed me to make use of this synopsis. I am also grateful to Peder Mortensen who provided some of the information contained in this section in private communication.

48. Mellaart, 1964 a, p. 105, 107, and Figure 47. Microlithic industries have been reported at Baradız (northeast of Burdur), the Macun Çay valley (west of Ankara), and the Fındıcak valley near Tekeköy (Samsun area). Little information has been published and these industries cannot be accurately dated. Microlithic tool types seem to be very rare at Aşıklı Hüyük.

49. Compare the "stratified unaligned systematic" sample employed by Redman and Watson at Girik-i-Hacıyan (Redman and Watson, 1970).

50. Mortensen quotes the following figures for the percentage of flint: II-4%; III-3%; IV-3%; V-4%; VI A-B-8%; VII-9%; VIII-9%; IX-11%; X-12%; XI-0%. These figures may, however, be changed by a complete analysis of all the excavated material.

51. For a color photograph of the mirror in situ see Mellaart, 1967, Plate XII. For other mirrors see Mellaart, 1963 a, Plate XXV:b. After this text had been completed, Sebastian Payne of the British Institute of Archaeology at Ankara informed me of the existence of an obsidian source in the Göllü Dağ region where lumps of obsidian occur naturally with very smooth, highly reflecting surfaces. The Çatal Hüyük mirrors may therefore have been formed on such lumps, and need not have required the very extensive polishing suggested in this work and also by other authorities.

52. See note 42 for references. For central Anatolia add French, 1964; Todd 1965 a and b, 1966 b and c, 1967; Todd and Pasquare, 1965.

53. Isolated western types, possibly imports, have been found at Ali Kosh (Bus Mordeh phase), Hole,



Flannery, and Neely, 1969, p. 91 and Figure 32:c; at Tell Hassuna (Ia), Lloyd and Safar, 1945, Figure 22:8-10; and at Umm Dabaghiyah (phases 12-6), Kirkbride, 1972, p. 11 and Plate XVII:6-8.

54. See note 43. Analysis of obsidian from Khirokitia indicates that it was derived from the Çiftlik source in central Anatolia (Renfrew, Dixon, and Cann, 1968, p. 322, samples 358-361). Obsidian has been found in Neolithic Ia contexts at Khirokitia, Troulli, Petra tou Limniti, Apostolos Andreas, and Cape Andreas, and the predominance of parallel-sided blades of Anatolian type suggests that the blades were imported into Cyprus in finished form. Such parallel-sided blades are noticeably lacking in the inventory of lithic types formed of the locally available material. For a description of the Khirokitia chipped stone industry (approximately contemporary with the later part of Çatal Hüyük East), see Stekelis in Dikaios, 1953.

55. For analysis and discussion of the metal finds from Çatal Hüyük, see Neuninger, Pittioni, and Siegl, 1964.

56. Cf., for instance, Figure 44 of this work with Mellaart, 1970 a, Plates CLVI-CLVII and Figure 228.

57. I am indebted to Elizabeth Ralph for clarification of this matter. In a personal communication she cited P-1239 as an example. The sample was dated in 1967, and the value for the 5730 half life was calculated:  $(6661 + 1967) \text{ times } 1.03, -1967 = 6920$  in whole integers. Calculation with the BP 1950 date resulted in a slightly lower figure:  $(6661 + 1950) \text{ times } 1.03, -1950 = 6919$ . To avoid confusion it seems best to retain the BP 1950 date in all calculations.

58. Stuckenrath and Ralph, 1965, p. 192; Mellaart, 1964 a, p. 116.

59. Mellaart, 1964 a, p. 116. Not listed in Stuckenrath and Ralph, 1965, or Deevey, Flint, and Rouse, Eds., 1967.
60. Stuckenrath and Lawn, 1969, p. 156.
61. Stuckenrath and Ralph, 1965, p. 192.
62. Stuckenrath and Lawn, 1969, p. 155.
63. Stuckenrath and Ralph, 1965, p. 191; Mellaart, 1964 a, p. 116.
64. Stuckenrath and Lawn, 1969, p. 154.
65. Stuckenrath and Lawn, 1969, p. 153; Todd, 1968, p. 157.
66. Stuckenrath and Ralph, 1965, p. 193; French, 1967, p. 174.
67. Vogel and Waterbolk, 1967, p. 127.
68. Crane and Griffin, 1968, p. 109.
69. Crane and Griffin, 1968, p. 108.
70. Bordaz, 1973, p. 287. The unpublished dates were kindly supplied by Jacques Bordaz in a personal communication.
71. Ralph and Stuckenrath, 1962, p. 146; see also Kohler and Ralph, 1961, p. 360; Mellaart, 1961 b, p. 74; and Mellaart, 1964 a, p. 116.
72. Ralph and Stuckenrath, 1962, p. 145; see also Kohler and Ralph, 1961, p. 359; Mellaart, 1961 b, p. 74; and Mellaart, 1964 a, p. 116.
73. Deevey, Flint, and Rouse, Eds., 1967, p. 17; Barker and Mackey, 1960, pp. 29-30; Mellaart, 1961 b, p. 74.
74. Barker and Mackey, 1963, p. 108.
75. Rubin and Alexander, 1960, p. 183; Braidwood and Braidwood, 1960, p. 504.

76. Stuckenrath and Lawn, 1969, p. 154; Bordaz, 1973, p. 285. Some of the dates at the 5730 half life published in Bordaz, 1968, seem to be erroneous, having been recalculated by multiplication by 1.03 without the required addition of 1950 to the 5568 half life date. In a personal communication Jacques Bordaz informed me that all of the Suberde samples consisted of carbonized wood fragments.
77. Bordaz, 1973, p. 285.
78. The samples were not obtained during preliminary excavation as stated in Stuckenrath and Lawn, 1969, p. 153. No excavation has taken place on the site.
79. See the Monthly Bulletin of Statistics published by the State Institute of Statistics, Turkey, for figures for the rest of the country.
80. Webley has pointed out a remarkably similar situation in Palestine. He states that "two different soils per site is the most common situation, one being freely and one poorly drained." He reasons that "game would be attracted and pasture would be favoured in dry seasons by the wet soil." In areas of minimal rainfall, cereal production would be made possible on the adjacent soils which would be moistened by capillary action (Webley, 1972, p. 170). Another very similar observation concerning the location of sites near two different soil types has been made by Ellison and Harriss with reference to southern England. They remark that their analysis suggests "that most sites in all periods provided access to more than one class of land, and ... that sites were often located close to the junction between two different land categories" (Ellison and Harriss, 1972, p. 937).
81. Harlan and Zohary, 1966, Figure 1, 3-4; see also Zohary, 1969.
82. Perkins, 1969. Bones of red deer, wild boar, and onager are rare on the site, and no leopard bones have been found.

83. For a chronological chart illustrating the relative position of Çatal Hüyük West, see French, 1967, p. 175.
84. For notes on the method see Drew, Perkins, and Daly, 1971.
85. Perkins, 1969, p. 179, note 14. This is contrary to the statement of Mellaart (1967, p. 223) that domestic sheep and goat occur even in the lowest levels.
86. The lack of bones of hunted animals within the sample recovered (see note 83) may be due to the bias of the sample. Alternatively it may reflect the economic insignificance of these animals. The wall paintings and reliefs clearly show, on the other hand, that such animals were of great significance to the inhabitants of the site in other ways.
87. Burnham, 1965. Helbaek, 1963. See also Mellaart, 1967, p. 219.
88. Angel, 1971, pp. 82-83. For the number of buildings see Mellaart, 1967, p. 70.
89. For site catchment analyses of sites in the Mount Carmel area, see Vita-Finzi and Higgs, 1970. See also Webley, 1972.
90. One hectare is the equivalent of 10,000 m<sup>2</sup> or 2.471 acres.
91. Zubrow, 1971, p. 130. I am indebted to Howard Pomerantz for this reference.
92. My thanks to Mary Santini Ritt who assisted in the compilation of this list.
93. Although obsidian exists in the Hasan Dağ area, analysis does not suggest that material from this source was ever used for the manufacture of implements. For the Acıgöl and Çiftlik sources, see Renfrew, Dixon, and Cann, 1966, pp. 38-39. See also Todd, 1967, p. 12, and Todd in Renfrew, Dixon and Cann, 1968, p. 320.

94. Bialor (1962, p. 67) suggests that one unworked flake of black obsidian mottled with red may have come from an east Anatolian source. This is unlikely since I have found deposits of similar material in the Acıgöl area.
95. Unpublished. I am grateful to Richard Watson for this information.
96. In a paper presented to the symposium, "Recent Research in Anatolian Prehistory," held at the 72nd Annual Meeting of the American Anthropological Association in New Orleans, December 1973. For a summary of the symposium see Todd and Bartel, 1974.
97. For references to the central Anatolian sites, see notes 42 and 52.
98. Payne, 1972. For possible parallels between Çatal Hüyük and Nea Nikomedeia, see Rodden, 1965.
99. See, for example, Renfrew, 1974, and Service, 1971.
100. Paper by Patty Jo Watson and Steven LeBlanc. See note 96.
101. French, 1972, p. 235. The terms large and small are used here as defined by French. They denote complexity (or lack of) rather than just size.

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