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EXCAVATIONS AT HACILAR

(I)

to the memory of
John Garstang and
Francis Neilson

EXCAVATIONS AT HACILAR

JAMES MELLAART

(I)

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Foreword

This is the final report on four short seasons of excavation at Hacılar in the years 1957–60, conducted by the author under the auspices of the British Institute of Archaeology at Ankara.

I am greatly indebted to the Council of the British Institute of Archaeology at Ankara without whose prompt support the site might well have been ruined. I also want to place on record my gratitude to the Institute's former Director, Professor Seton Lloyd, for his encouragement and advice as well as to the late Mr Francis Neilson and the following Institutions: The Russell Trust, the University of Edinburgh, the British Academy, the Ashmolean Museum, Oxford, and the University of Manchester for donations towards the cost of excavation and publication.

We are greatly indebted to the General Directorate of Museums and Antiquities of the Turkish Republic and its then Director, Bay Kamil Su, for granting us the privilege of digging this site. At Burdur, the successive valis, Bay Mehmet Ali Çeltik, Bay Turhan Kapanlı and Bay Ziya Önder, the Commander of the Jandarma and the Maarif Müdürü, as well as numerous other officials, gave much help and assistance to the expedition, for which we are very grateful.

Our representatives of the Department of Antiquities were Bay Osman Aksoy (1957–9) and Bay Ismet Ebcioğlu (1960), then Director of the Antalya Museum, and their efficiency, interest, and courtesy were deeply appreciated.

With a stiffening of veterans from Beycesultan, trained by Professor Seton Lloyd, we employed local workmen from the villages of Hacılar and Karaçal to the number of about forty.

Our small staff of British volunteers was carefully selected and their efforts and devotion ensured the success of the Hacılar dig. Throughout the four seasons, the author was in charge, ably assisted by Mrs Arlette Mellaart. Miss Elizabeth Beazley was the architect/surveyor in 1957 and 1958, Miss Clare Goff in 1959 and 1960. Mr David Stronach was field assistant and photographer from 1957–9, after which Mrs Mellaart took over the photography. Mr David French dealt with the pottery from 1958–60. Mr Seton Lloyd was adviser during the 1958 season and Mrs Seton Lloyd kindly drew the collection of clay statuettes from the final season. Among those who contributed to the preparation of material for publication were Mrs Oliver Gurney, Miss Elisabeth Burney, Mr Charles Burney, Mr and Mrs Seton Lloyd, and

Miss Grace Huxtable. And last, but not least, I am grateful to Bay Ibrahim Şadi Balaban, then teacher of history at the Burdur Lisé, to whom the credit of discovering Hacılar is due, when on that dull December afternoon in Burdur in 1956 he drew my attention to something spectacular that neither he, nor any Anatolian archaeologist, had ever previously seen.

At the beginning of 1960, the British Institute of Archaeology at Ankara decided to close the Hacılar excavations on the ground that enough had been found and that further work on the site would only yield repetitive results of no great scientific value.

However, one final, short season of excavations was carried out in the summer of 1960, which in my opinion proved to be the most successful and interesting season of all, but there was neither time nor funds to explore the Aceramic levels or the outlying parts of the mound and surrounding area.

Having reached virgin soil, thus completing the archaeological sequence of the site, we regretfully had to leave Hacılar in September 1960. I understand that soon afterwards large scale illicit digging began both on the mound and in the outlying cemeteries, thus ruthlessly destroying unique archaeological evidence. Objects said to be from Hacılar flooded the antiquities market.

The destruction of the Hacılar cemeteries is one of the most tragic chapters in the history of archaeology.

James Mellaart

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For the greater convenience of the reader all the plates and figures have been collected together in Volume Two with the exception of the six colour plates, the drawings and distribution plans which form the pottery inventories in Chapter 3 and which are outwith the numbering system of the other figures, and the plates and figures belonging to Part 3, Dr Helbaek's study of the Hacılar plant husbandry. In addition, the four basic site plans and two pottery tables have been repeated in this Volume. In order to facilitate the location of plates and figures in Volume Two, marginal page references have been inserted at appropriate points throughout this Volume.

Plates

Introduction

DISCOVERY OF THE SITE

During the archaeological survey of south-west Turkey undertaken by the writer in 1951 and 1952, a number of painted potsherds of a new type were found in the vilayets of Burdur, Afyon, and Antalya.[1] At the time little could be said about the date of these sherds except that they did not fit into the pattern of bronze age archaeology as it was then known.

In subsequent years, nothing similar was found in the Beycesultan excavations of the British Institute of Archaeology at Ankara – excavations which established the entire sequence of bronze age occupation in the area; nor did anything similar occur in the late chalcolithic layers. In 1956 these layers had not yet been reached, but they were known from a neighbouring site, Ömerköy.

In December 1956 I went back to Burdur with the purpose of finding more of this painted pottery. There I met Bay Ibrahim Şadi Balaban, a local history teacher, who showed me a photograph of two painted pots, found the year before in the village of Hacılar, 25 km to the west. A visit to the site confirmed the alleged provenance and I returned with two intact pots – now in the Ankara Archaeological Museum – and a number of sherds collected on a mound west of the village from which the complete pots had come.

Here, then, was a mound earlier than any known at that time on the Anatolian plateau. Upon my return to Ankara, a report was sent to the BIAA Council in London, urging the importance of a dig at this new site, and the Council put £250, donated by Mr Francis Neilson in memory of Professor J. Garstang, at our disposal. The Turkish Department of Antiquities granted a permit to excavate, and in September of the following year we started the first season at Hacılar.

PURPOSE OF EXCAVATIONS – SEASONAL OPERATIONS

The discovery of Hacılar held the promise of delving deeper into the Anatolian past than had been possible before. Nowhere else had a site with painted pottery been discovered which was so accessible and which had no overlying deposits. Moreover, the Hacılar pots were unusual in other ways – in their oval shapes, their brilliantly polished surfaces and their weird and strange designs, more reminiscent of Peruvian pottery than anything which had yet come out of the Near East. What was associated with these pots in cultural remains? What was their date? What were these

[1] *AS*, IV (1954) 188, figs. 43–60.

people and how did they live? All these questions prompted themselves and there was only one way to find the answers: excavate. It must be stated here at once that no painted pottery cultures – so well represented in Mesopotamia, Iran and Syria, and even in Greece and Bulgaria – were known on the Anatolian plateau, and the added stimulus of finding something 'in between' and establishing a link between these widely separated countries was not the least factor in the determination to excavate this site.

DESCRIPTION OF THE SITE

The site of Hacılar lies about 26 km south-west of the town of Burdur in south-west
58–59 Anatolia and about 1·5 km west of the village of Hacılar itself (fig. 7). It lies in an intramontane valley on the Anatolian plateau, at an elevation of *c.* 940 m above sea level, nearly a hundred metres above the level of the Lake of Burdur (845 m). Above the site rises the abrupt limestone rock of Hacılar, and from it there issues a spring – the main reason for the existence of the site then as for the village now. The ancient mound, however, lies well away from the spring and the rock in the
1 middle of agricultural land, and was itself covered by fields (pl. 1).

In this region of the plateau the proximity of the coast tempers the climate, which is Aegean with July heat of 24°–28° centigrade and average January cold of ±4°–0°, considerably less cold than the Central Anatolian plateau. Snow falls in winter but does not remain on the ground for long. Rainfall is abundant, averaging between 30–50 cm at present, and remains of forest still cover the mountains which border the narrow plain. Remains of much deer, wild cattle, and the representations of leopard and bear suggest that forest was not far away in neolithic and chalcolithic times.

About 500 yards west of the site, a river, the Koca Çay, flows in a deeply cut valley and drains into the Lake of Burdur, which contains sulphur, arsenic, and various salts. Neither river nor lake appear to have been of much importance to the people of Hacılar.

The situation of Hacılar on a gravelly terrace sloping towards the lake made it possible to reach virgin soil without the encumbrance of ground water. The mound is
1 inconspicuous, about 150 yards in diameter and not more than 5 m in height (pl. 1). It undoubtedly has lost height as the result of ploughing and the extraction of stone for building purposes. There were no surface remains anywhere in the neighbourhood to indicate the presence of the Hacılar cemetery of the period concerned; but the peasants' activity in the fields several hundred yards northwest of the site and their assurance that they had found nothing there was, to say the least, suspicious. A few Hacılar 1 sherds told their own tale. Several later sites occur all around, a Bronze Age mound on the northern outskirts of the village, and a classical site on and below the rock.

Modern fields covered the early mound and it was arranged with the owners that the trenches made were to be filled in each year after the completion of the season's work. Thanks to the help of the successive valis of Burdur, this was carried out at government expense by bulldozer.

SUMMARY OF THE FOUR SEASONS' WORK

1957 Season (6–23 September). In a short and exploratory fortnight of digging on the top of the mound, three burnt houses of level II were excavated and a small test pit below one of the houses reached virgin soil. Nine successive building levels were encountered in a 5 m depth of deposit.

1958 Season (mid-August–mid-September). A new area was opened on the east slope of the mound which revealed the solidly built fortress of level I. The area was linked up with the buildings dug the previous year and in one room of the fortress virgin soil was again reached.

1959 Season (10 August–11 September). In view of the importance of the building remains of levels I and II the season was devoted to establishing as much of the plan as was possible. Almost the entire enclosure of level II was cleared and two successive phases of construction were revealed. Another block of houses in the level I fortress was excavated and it was again encountered in a trench on the western slope of the mound.

1960 Season (1 August–7 September). In the final season a deep sounding was made which established an important burnt building level VI, extraordinarily rich in finds, as well as an earlier aceramic mound with seven building levels. Virgin soil was reached over a large area of the sounding.

Part One

THE ARCHAEOLOGY

Chapter 1. The Aceramic Mound

LOCATION AND PRESERVATION

Knowledge of the earliest occupation at Hacılar, the aceramic mound which lies on virgin soil, is necessarily restricted by the size of our sounding in area Q (figs. 1, 15; pl. IIa). Here the outer edge of the gently sloping aceramic mound was discovered – and a few yards further along in trench R, one had passed beyond its limits. The centre of this early mound must have lain further back towards the south-west, in an area we did not excavate, but the chances that it was undisturbed by the deep cutting of the level I fortress, which just about here would have turned round from its southern to its western stretch, are very small indeed. 52, 67 2

As it is, nothing can be said about the extent of this early settlement. In area Q it rose gently to the southwest (fig. 38), where the accumulated remains of seven floors, belonging to successive buildings, still attained a thickness of 1·5 m. The top of the site showed all the signs of prolonged denudation and weathering. Walls of greenish-yellow mudbrick had crumbled to form a sterile cover over the site. Of the highest floors only patches of gravel and plaster had survived the ravages of time (e.g. fig. 2), and considerable damage was done when the late neolithic people sunk foundation trenches for their substantial houses in level VI, which, especially on the edge of the old mound, afforded unstable footing (pl. IIIa). Rubbish pits below late neolithic houses 3 and 4 descended deep into the earlier strata (figs. 4, 5), and a deep well, lined with stone and reaching virgin soil, was sunk behind house 2. 91 53 3 55, 56

When one further realises that two-thirds of the area excavated was occupied by a large communal courtyard, it will be clear that the excavation of this part of the aceramic site was, in spite of its size (*c.* 150 sq. m), not ideally suited to yield the maximum information.

The entire courtyard was excavated down to virgin soil, but lack of time prevented us from carrying the adjacent rooms and chambers down to this level.

SEQUENCE OF BUILDING REMAINS

At least seven phases of occupation – here called Aceramic I–VII – could be established in the large courtyard and these would appear to correspond to building levels in the area south of the court. (See fig. 38.) 91

Unfortunately not a single building level was preserved up to a height of more than 0·25 m, nor were any destroyed by fire. The architectural remains (figs. 2–5) show rooms of small size with a rectangular plan. Walls were made of mudbrick, 53–56

shaped into different sizes (many measure 72 ×28 ×8 cm). Most walls are one brick thick (0·2–0·3 m), but courtyard walls reach a thickness of up to one metre. The bricks were made of natural greenish-yellow clay, and were laid in headers and stretchers with black mortar (occupation debris) in between. Walls and floors are covered with mud plaster in courtyards or subsidiary rooms. Stone foundations are only found under the heavier walls. Floors of important rooms were laid on a bed of small stones or pebbles (the same construction as is used in hearths and ovens), covered with a lime plaster, which curved where it met the wall and was continued up it. These floors were stained with red ochre, varying in shade from light red to
4 crimson, which was burnished when dry (pl. IVa, b). It is unlikely that the red plaster continued on the walls up to roof level, which would have made the rooms much too dark; it possibly formed a dado. Above the dado, the walls were probably covered with cream-coloured plaster, occasionally bearing traces of geometric
5 painted design, executed in red. Only a few fragments of this were found (pl. Va); their good state of preservation suggests that they were part of the decoration of walls, not of floors.

However, the floors were sometimes painted at Hacılar – in Aceramic II an oblong area, two metres long, with a circular depression in the middle was decorated in red paint, leaving a broad cream band in reserve. In the following phase (I) the entire area was replastered in plain red.

Several layers of plaster on floors and walls are a recurrent feature, and the Hacılar aceramic people were good housekeepers. Not a single object was found lying on any of the house floors.

From the excavated remains it is unfortunately impossible to gain an impression of what a typical house was like. Not a single entire house plan was recovered. The preservation of the walls is poor and never exceeds the height of two bricks. No doorways were recognised, and if the houses were provided with thresholds, the position of these cannot be ascertained. It is, however, not impossible that, as at Çatal Hüyük, the houses were entered from the roof by means of a wooden ladder.

55,56,2 The one large room with plaster floor excavated in Aceramic V (figs. 4, 5; pl. IIb) showed no signs of the position of a fixed ladder – nor any trace of benches, platforms or a hearth. As its eastern side was destroyed it is not impossible that they were placed there. In a room of Aceramic II a rectangular hearth with raised kerb was
53 found near the east wall (fig. 2). The thinness of the walls suggests a single storey, evidently with a flat roof. No traces of postholes were found within the rooms, and this is not surprising, for the span of even the largest room (in V) does not exceed 4·5 m and timber of that size would have been easily available.

Not much more information is available about the courtyard: about 5 m wide, it was traced over a distance of 15 m without reaching either end. The top layers, Aceramic I and II had been destroyed by the late neolithic buildings, the lowest two floors (VI and VII) showed no architectural features except traces of decayed lime plaster on VII.

Aceramic III likewise lacked significant features, but the courtyard walls of

Aceramic IV were still in use. A screen apparently separated the outer (west) court, with a floor of pebbles and splintered animal bones from the upper court (fig. 38), 91
which had a mud plaster floor.

It is only the courts of Aceramic IV and V which give some impression of communal life. The Aceramic IV walls (fig. 3) are solidly built of brick on stone foundations, 54
and along the south side, four structures stood in a row. Of these, two are certainly hearths and the other two could have been ovens – their state of preservation, lacking superstructure, is such that it was difficult to decide. A little further away, near the point where the north courtyard wall stops, there stood another oven, with a great posthole almost in front. Near the corner of the corresponding south wall there is a depression and a few more postholes, suggesting a covered structure. Several of the hearths or ovens have a curious projection of mudbrick surrounding a posthole – perhaps lean-to roofs provided some cover between ovens and wall.

In Aceramic V there was a similar set of oval ovens and rectangular hearths, either combined into single structures, or singly ranged in line with the south wall, which now was set somewhat further back (figs 4, 5, pl. IIIb). Further north two bins were 55, 56, 3
found empty, but a big patch of white ash, found just to the west of them, revealed the silica skeletons of numerous food plants or weeds.[1]

Hearths and ovens had floors constructed of lime plaster on a base of small stones or pebbles – the same principle as was used for laying the plaster floors – and baked hard *in situ*.

One of the reasons for congregating ovens and hearths in the oven courtyard was possibly to reduce the risk of fire. Fuel (wood, straw or brushwood) had to be stored, and in the small rooms of the settlement there was hardly enough space. If this was a fire precaution, it evidently worked, for not a single one of the seven building levels was destroyed by fire.

ECONOMY, SMALL FINDS, CHRONOLOGY

A study of the few complete animal bones from the aceramic levels[2] revealed that the neolithic people at Hacılar kept a domesticated dog, resembling a fox terrier. Other bones belong to sheep or goats, cattle (large), as well as fallow deer and hare. The animal bones were too few to *prove* domestication of sheep, goat or cattle, but in view of the situation at the contemporary site of Çatal Hüyük in the Konya plain, where cattle and dog were domesticated, that possibility cannot be ruled out. In any case, hunting must have been practised as well.

The increasing use of straw in brick-making, the ubiquity of ovens, and the straw deposits in the courtyards, suggest that agriculture was practised. This is now confirmed by Dr H. Helbaek's analysis of a deposit of ash found in Aceramic V. He was able to identify remains of emmer, wild einkorn, naked barley, hulled barley, lentil and several weed species (see p. 198), which definitely show that agriculture was practised in this aceramic settlement.

[1] See H. Helbaek's report, pp. 198–9.

[2] Sent to Professor H. Zeuner, who gave them to Mr B. Westley to study – see the report below, pp. 246.

Small finds were disappointingly few. One fully polished greenstone axehead was
5,447 found (pl. va, fig. 165) as well as a few stone beads and marbles (fig. 165). The chipped stone industry is represented by a few blades of local chert and imported
447,5 central Anatolian obsidian (fig. 166; pl. va), possibly sickle elements. There were a
5 few bone awls (pl. va), probably used for leather-working.

These people had no pottery vessels and probably used baskets, wooden vessels,
447 and more rarely, polished marble bowls, two fragments of which were found (fig. 165;
5 pl. va). The culture then is aceramic (i.e., without pottery), a term I prefer to pre-ceramic, which has chronological implications. Other people in Anatolia at this period did already use pottery!

No burials have been found, which suggests that there was an extramural cemetery. On the other hand, there were a number of human skulls in the aceramic levels.
5 Two of these (pl. vb), fine-looking dolichocephalic skulls, were set upright, supported by pebbles, on the lowest courtyard floor (VII) facing the area with the houses.

Another skull, but lacking the mandible, was found in the courtyard of Aceramic III, and a baby's skull lay abandoned on the floor behind the courtyard (?) wall in Aceramic V. In not one case were any traces of the associated skeleton found, and the heads must therefore have been severed from the bodies and set up inside the settlement, probably for cult reasons. One suspects here the elements of an ancestor worship, or possibly even human sacrifice.

The date of this aceramic settlement, the first to be discovered in Anatolia, can fortunately be established with the help of radiocarbon dating. Charcoal samples collected on the courtyard floor of Aceramic V were dated by the British Museum Laboratory (BM 127) to 8700±180 BP – that is, 6740 BC±180 (based on half-life value of 5568±30). Calculated with the higher half-life value of 5730, which many laboratories now appear to think is nearer the *actual age*, the date would probably be nearer 7000 BC.

The aceramic deposit does not create the impression of a long and extended period of occupation, but its situation on the edge of the mound makes it rash to assume that the entire site bore the same character. Further towards the centre, it is quite possible that more substantial structure once existed, showing clearer signs of longevity. The seven building levels then may cover any period from a few centuries to half a millennium. In any case, the aceramic settlement falls mainly within the early half of the seventh millennium, and may just extend into the later eighth millennium BC.

CONCLUSIONS AND COMPARISONS

Although the information obtained from five days' exploration of the aceramic settlement at Hacılar is very meagre indeed, it is possible to establish the fact that it was of a permanent nature, practised agriculture and possibly animal husbandry, supplemented by hunting. Pottery was still unknown, burial took place outside the settlement and there were traces of a possible ancestor worship. The site was evidently small, and might be compared to the aceramic village of Jarmo in north-east Iraq. Its real importance here is the fact that it was the first example of an aceramic site to be found in Anatolia.

The unsatisfactory evidence provided by the aceramic settlement at Hacılar has acted as a stimulus and our excavations of the neolithic site of Çatal Hüyük have now (1965) reached similar and almost contemporary levels (Çatal Hüyük XI–XII).[1] A comparison of the neolithic city site of Çatal Hüyük with the village of aceramic Hacılar is naturally unfavourable to the latter, but it does illustrate one point: that it is always better to dig the larger and more spectacular site than a small village site. Without Çatal Hüyük the correct interpretation of Hacılar would have been virtually impossible. At Çatal Hüyük we now see the full panoply of arts and crafts which were current at a neolithic city of the period and which were only partially reflected in the villages of the same period.

At Çatal Hüyük one can clearly show domestication of cattle and dogs at this period, and a fully developed agriculture, supplemented by hunting and fishing. Architecture was fully developed, with numerous shrines and houses, entered from the roof and decorated with wall paintings. Red plaster floors, however, were less common, but occur in levels XI,[2] VIII[3] and even in II.[4] Skulls are again found, but on the floor of a shrine in level VII, suggesting ancestor cult or rites of the dead. Hearths and ovens are very similar, but at Çatal Hüyük they are found within the houses and not grouped into courtyards, and burial customs are different. There are no cemeteries at Çatal Hüyük, where the dead were buried below the platforms in the houses. One of the principal differences between the two sites is the fact that Çatal Hüyük used pottery as early as level XII.

[1] *AS*, XVI (1966) 166 f.
[2] *AS*, XVI (1966) 168, fig. 2, pl. XXXIb.
[3] *AS*, XVI (1966) 110, 181, fig. 7, pls. XLVI, XLVII.
[4] *AS*, XIII (1963) 45, fig. 1.

Chapter 2. The Late Neolithic Period

The late neolithic newcomers who founded a new settlement at Hacılar, perhaps as much as a millennium after the abandonment of the aceramic village, brought with them a sophisticated and fully developed culture. From the date of their arrival, *c.* 5750 BC or even earlier, to the end of the occupation at the site of Hacılar in level ID (*c.* 5000 BC or later), one can trace an unbroken sequence of development.

The newcomers built their site partly on virgin soil beyond the limits of the old aceramic settlement, by then denuded and hardly recognizable as an ancient site,
94 and partly on top of the latter (fig. 41). Relatively few remains of the earliest phases of the late neolithic settlement (levels IX–VII) have been found, and they are mainly
6,7 represented by solid stone walls (pls. VIb, VIIa), ash and rubbish deposits, and a
57 few pits (fig. 6).

The building operations of the last late neolithic phase (level VI) appear to have been very thorough and remains of the earlier occupation have been largely levelled off or destroyed. What was not wiped out in this operation fell a prey to the preparations for the erection of an enormous fortress in level I, which involved cutting down the original mound, almost down to virgin soil, on a very large scale.

57 Levels IX–VII are therefore badly represented (fig. 6) and not a single house plan has survived in the southern half of the mound, which was cleared during our excavations. What we know of these earlier phases is almost entirely derived from pottery and some figurines, while the picture of the late neolithic period at Hacılar is almost entirely based on the burnt and well-preserved remains of its last phase, level VI.

Economy

AGRICULTURE

From the abundant deposits of grain and legumes, found in storage bins or on the floors of the burnt settlement of level VI, it is evident that agriculture flourished in the late neolithic period and, because of the relatively small number of animal bones, agriculture would appear to have been the dominant factor in food production. This applies in particular to level VI and, although no complete houseplans of the earlier levels were found and although other evidence is lacking, the standards of agriculture in level VI are so advanced that we may safely assume them to have been no different before. Wheat and barley, lentils, peas and bitter vetch are found in nearly every house in the burnt settlement (see below, p. 199). The grain was harvested with

antler sickles, threshed with the help of the threshing sledge or *tribulum* (a method still in use today), parched in the flat-topped ovens which are a feature of every house and kitchen, and stored in sacks and baskets or plaster boxes, up to a metre in height–but never in pits, perhaps because the climate was too damp. The grain was then ground on saddle querns with grinding stones – flat on one side – or pounded in mortars. Mortars occur by the score throughout the settlement. On many of them the prepared food, crushed wheat (*bulgur*), peas or lentils, was found *in situ*, clearly indicating the sudden catastrophe which overwhelmed the settlement.

ANIMALS

Evidence for the domestication of animals, with the exception of the dog, could not be deduced from the small number of bones from levels IX and VII, but, as for VI, the possibility of cattle, sheep and goats being domestic by this time must be borne in mind. Among animals hunted, we find red and roe deer, the aurochs (not as enormous as at Çatal Hüyük), pigs, wild sheep and wild goats (see below p. 245), and probably, on evidence of figurines, the leopard. It is not known how the Hacılar people hunted these animals, for in contrast to the early neolithic site of Çatal Hüyük, where hunting weapons abounded, we only find the mace and the sling in use at Hacılar. This certainly suggests other ways of hunting than were practised at Çatal Hüyük; perhaps the use of wooden pikes and spears, of traps and nets, or the age old device of driving animals over cliffs or into river, marsh or lake. For fishing we have no evidence – not a single fishhook was found and, more conclusive, no fishbones!

The Settlements of Hacılar IX–VII

If very little is known of the three building-levels, IX, VIII and VII, that preceded the very substantially built settlement of Hacılar VI, it is not for lack of trying. Not less than four soundings were made in areas B, E, P, and R–Q, to learn more about the earliest settlers of the late neolithic period. The original sequence was established in area B, where the deposits of levels VII–VIII, the latter resting directly on virgin soil, yielded floors and pottery but no traces of architecture (fig. 40). Below the solid buildings of Hacılar VI in areas P and Q, lower floors associated with, it would appear, the same walls, show level VII to have been an earlier phase of VI. The sounding in area E, that is, below room 5 of the level I fortress, only produced a single floor without architecture that could be attributed to level VII. Nowhere else did this level show more than a single floor. The pottery from all these findspots was consistent and proves to be an early form of the much better known wares of Hacılar VI. The impression obtained is that level VII essentially presents us with an earlier form of level VI, and was of comparatively short duration. 93

Building-levels VIII and IX, on the other hand, clearly belong to the earliest late neolithic phase of occupation, distinguished by a somewhat different pottery, which is mainly cream or light grey in colour. Nowhere are the deposits of these two phases more than 0·7 m thick, and evidently the period they represent was short.

Architectural remains are negligible, and consist of a short section of walling in trench
6,7,91 R (pl. VIb, VIIa; fig. 38), which may represent a retaining wall of level IX, and two short stretches of level VIII walling in sounding E, which may have formed the corner of a rectangular room. With each of the two building-levels in sounding E, two successive floors are associated.

The general impression is that the firstcomers of Hacılar IX and VIII did not yet build substantial structures, at least not in the areas where our soundings penetrated to virgin soil. Once fully established they erected a number of buildings of absorbing interest, the last phase of which is known as Hacılar VI. In rough terms, Hacılar VI was destroyed by fire, *c.* 5600 BC. It may have been built fifty years earlier. If we allow another generation each for levels VII, VIII and IX, we reach a date of *c.* 5750 BC for the arrival of late neolithic elements at Hacılar. The thin deposits and the scanty remains of building would probably support such a short chronology.

The Settlement of Hacılar VI

If the previous late neolithic building-levels of Hacılar gave but a poor impression of the culture of this period, the burnt remains of Hacılar VI fully compensate us for this loss. As so often on prehistoric sites, the accident of fire and destruction preserves for the archaeologist a complex of civilisation which he would not, in his wildest dreams, have dared to reconstruct from other evidence. Hacılar VI is such a notable case.

58–59 Remains of Hacılar VI were found in areas P and Q, excavated in 1960 (fig. 7), to
60 which should now be added fragmentary remains in areas E and F (fig. 8). Two small trenches further east in area K, and below room 12 of the Hacılar I fortress,
57 yielded Hacılar VI pottery and floors but no building remains (fig. 6). These finds were too insignificant to be taken as proof that the Hacılar VI settlement did extend so far east, and unfortunately its overall size cannot be established. From the re-
61 mains found and from the logical development of the plan, reconstructed in fig. 9, it is certain that the settlement of Hacılar VI was considerably larger than that of the fortified enclosure of level II, but, like the latter, it seems to have been built to a rectangular plan. As the edge of the settlement has not been definitely uncovered at any point, it is impossible to tell whether the settlement was walled or whether it was open. In view of the obvious wealth of Hacılar VI and the general tradition of walled settlements since Çatal Hüyük, continued in Hacılar II and I, the odds are that Hacılar VI also had some sort of defence, probably, as at Çatal Hüyük, in the form of blank doorless outer walls in the houses on the periphery of the site.

58–59 The extant remains in areas P, Q, and B (fig. 7) indicate the presence of a large central courtyard extending from the eastern end in area P at least as far west as the outer wall of house Q.2. The presence of a rectangular kitchen to the west of the doorway leading from this court into house 2 suggests that at this point the limit of the central court was reached and on its western side we might expect a range of buildings equivalent to those of houses P.1 and 2. This would allow for a central

courtyard with a length of about 35 m, excluding kitchens built on to the front of buildings into the court. The width of this court was not established, but it was at least 16 m and possibly more, considerably larger than the west court of the Hacılar II settlement, which measured *c.* 25×8 m.

Streets or alleys are not found, but blocks of rooms are separated by courtyards. One such court set in the angle between houses Q.2 and 4 contained a stone-lined well (fig. 14), accessible from both houses. Between house Q.5, the largest excavated, and houses P.1 and 3, lay a court partly occupied by kitchens and domestic courtyards, which also extended between houses P.3 and E.1, leaving only a narrow passage free. The plan (fig. 7) suggests that this may have been one of the ways into the centre of the settlement.

66

58–59, and overleaf

The houses of this settlement are large and rectangular in plan, usually *c.* 5·5 m wide and varying in length from 6·5 m to 10·5 m. The walls, *c.* 1 m thick, have stone foundations (pl. IIIa), a characteristic of the late neolithic building-levels only. Brick size varies from slightly plano-convex bricks, 50×50×10 cm (house P.1), to 46×26×10 cm (house P.2), and hence are square or oblong. Long flat bricks, 63×19×10 cm, were used in house E.VI.2. The walls were covered with several layers of plaster, sometimes 3–4 cm thick, of which the outer layer was fine and originally white in colour, but there were no traces of wall-painting. Floors were made of beautifully smoothed clay plaster with a lime admixture and were off-white in colour. All houses showed two successive floors well preserved by the total absence of burials below the floors. This lower floor corresponds to Hacılar VII in the soundings and it is therefore clear that this settlement was built in level VII and destroyed in level VI. As there is no break between these two phases, which should really be called VIA and VIB, a terminology not adopted here to prevent confusion, finds of level VII are almost confined to courtyard deposits. The houses were kept very clean and when the level VI floors were laid the previous ones were swept clean first.

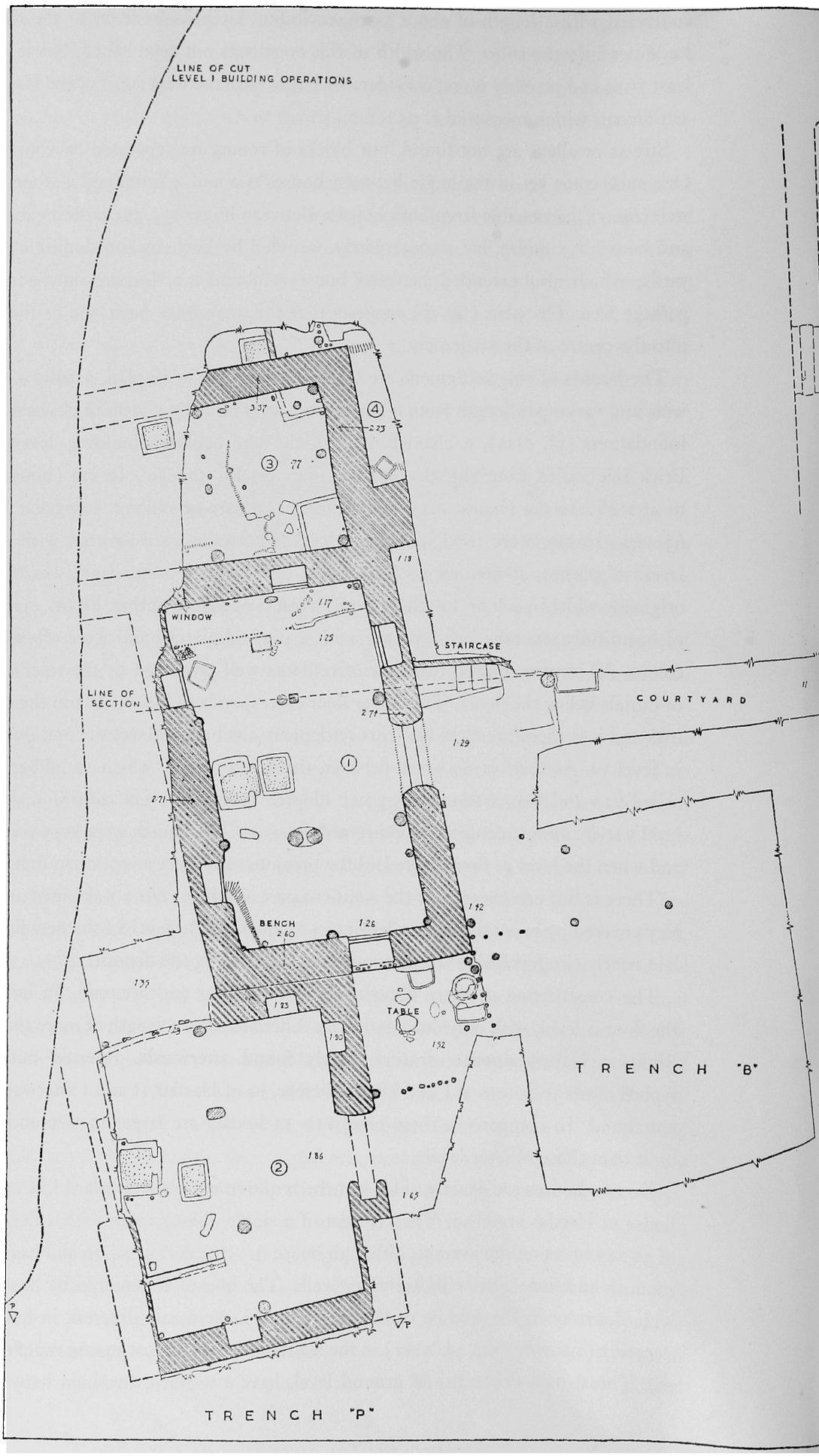
3

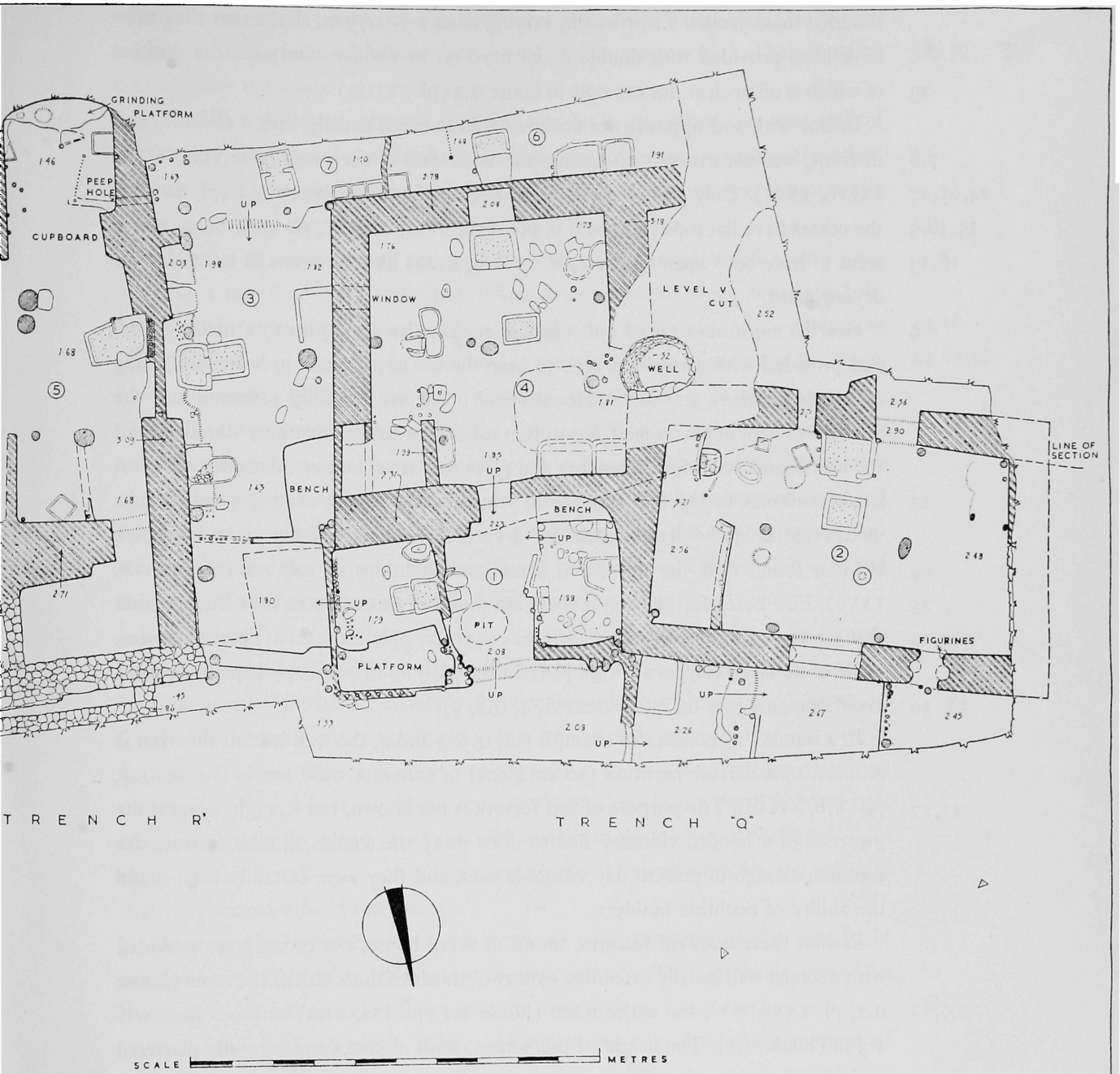
There is but one exception: the southern part of house P.VII.2 was burnt and pottery covered by burnt debris was left intact on the floor. In level VI the new floor was laid nearly two feet above the previous one, thus sealing the deposit.

The construction of these houses is extremely neat and accurate. In house P.1 the floor is level, with only one centimetre difference over a length of more than 9 m. Right-angles are another feature, rarely found afterwards. Internal buttresses, typical of many houses at Çatal Hüyük before, or of Hacılar II and I afterwards, are not found. In comparison these level VII–VI houses are larger in size and better built than those of later levels.

No two houses are exactly alike, but the requirements of a standard late neolithic house at Hacılar are clear. They consist of a single oblong room with a floor space of 40–45 sq. m on the average, although house Q.5 covers *c.* 55 sq. m and has a spare room in addition. The walls are party walls. The houses are entered by means of a wide doorway in the middle of the long side. House Q.4 is different in having its doorway (a narrow one, pl. XIVa) in the short side of an almost square room (6·5×6 m). These main doorways, at ground level, have a wooden threshold between the

14


LINE OF CUT
LEVEL I BUILDING OPERATIONS
WINDOW
STAIRCASE
LINE OF SECTION
COURTYARD
BENCH
TABLE
TRENCH "B"
TRENCH "P"



7. Hacılar VI. Plan of excavations in the main area (trenches P, B, R, and Q).

rounded door-jambs. Their width, varying from 1·5–1·75 m, shows that they must have been provided with double doors fixed on to wooden doorposts the position
23 of which is often clear, for example in house Q.2 (pl. XXIIIa).

In line with and opposite the doorway a large oven, usually with a raised hearth
7,8 in front, was constructed up against the back wall of the room (pls. VIIa, VIIIa,
24,25,27 XXIVb, XXVa). Only one of these ovens is domed, that in house Q.3 (pl. XVIIb);
15,16,9 the others have flat tops (houses Q.6, pls. XVb, XVIa; and P.1, pl. IXa). Some would
18,19 seem to have been open on top (pls. XVIIIb, XIXa) like the ovens in use today for drying grain.

9 Hearths are always raised (pl. IXa), of rectangular shape, up to a metre square and provided with a rounded kerb to keep the fire in place and prevent the spilling of burning embers and ashes. Hearths and ovens are carefully plastered and the plaster was kept in good repair. Very often subsidiary arrangements are found around the hearth and oven. Small benches and platforms are common. Alongside the oven
23 small postholes betray the presence of vertical stakes (pl. XXIIIb), which can be interpreted as spitholders or racks for drying. A coarse clay lamp or *brule-parfum*
24 is often found near the oven, and some contain lumps of sulphur (pls. XXIVb,
25 XXVb). Fire boxes for glowing embers are found in most houses near the partition
10,12 that screens off part of the room for greater privacy (pls. Xa, XIIa). These fireboxes, made of unbaked clay, are always placed diagonally to the walls perhaps to catch or
58–59 avoid draughts (see fig. 7; houses P.1, 4, Q.2, 5).

In a number of houses, for example P.2, Q.5, 3 and 4, the wall behind the oven is reduced to a narrow partition (20 cm thick) or carries a wide recess (house Q.4;
11,17 pls. XIb, XVIIb). The purpose of this feature is not known, but it might suggest the presence of a hooded chimney flue to draw away the smoke. Similar features are common enough in present day village houses, and they were certainly not beyond the ability of neolithic builders.

Besides these essential features, found in every house, the rooms were provided with a screen wall usually extending over two-thirds of the width of the room (house
25,9,12 Q.2, pl. XXVa, P.2), the entire room (house P.1; pl. IXa, XIIa) or projecting only 1·5 m (house Q.4). The height of this screen, built of sticks and carefully plastered on both sides, was at least 1·5 m in house P.1, but it is unlikely that it was carried up to the roof, which on analogy with the earlier buildings of Çatal Hüyük we may assume to have risen at least 3 m above the floor, if not more.

Most of the possessions of the inhabitants, farming implements, tools, weapons and articles of personal adornment, were found in the screened-off part of the house. This seems to have served the same purpose as the storage room with which each house at Çatal Hüyük is provided.

Wall-cupboards, raised well above the floor, from 50–80 cm deep and from 1·5–
9,11 0·8 m wide, are let into the walls of many houses (pls. IXb, XIa, XIb). There are five of these in house P.1, three in house P.2, and two in house Q.4. In house Q.2 there is
25 one, resembling a service-hatch (pl. XXVa), which communicates with an outside kitchen, as in several buildings at Çatal Hüyük. In it were found a group of schematic

clay figurines and clay bars. All the other cupboards were found empty and many were at one time closed with flimsy partitions (see fig. 7, house Q.4). Their function thus remains unknown. 58–59

A mudbrick cupboard, about 1 m high, was built up against the west wall of house Q.5 (pl. XVa) and contained three small compartments, one above the other. Next to it was a peephole in the wall, looking into house 3, which was subsequently bricked up by the occupier of house 3 (pl. XVa). 15 15

In Hacılar VI, cereal crops and legumes were stored in plastered square bins, standing a metre or more in height. These were arranged along the walls (pls. XVb, XVIb), for example in houses 6, 7, 4 and 3, or in the out-of-door kitchens (figs. 12, 13 and pl. XXa, b). In some houses these bins were missing and grain was found in quantity spilled on the floor, probably out of sacks (houses Q.5 and P.1, 2, 3). Unlike the grain bins of Çatal Hüyük, which were oval in section and had a port-hole just above floor-level for emptying, those of Hacılar VI were solid, square and rectangular, and probably had wooden lids. They must have been emptied and filled from above. For rubbish disposal, pits were dug in open spaces and courtyards, and it is only in these that animal bones were found. A drainage system was unknown and the needs of sanitation were obviously fulfilled in the courtyards. 15,16 64,65,20

For lighting these buildings, windows, 55 cm wide, pierced the walls (houses P.1 and Q.4) at a height of about 1·5 m above floor-level. They were neatly plastered. In all houses at Hacılar the characteristic sleeping-platforms, a standard feature of Çatal Hüyük architecture, are missing and we can only surmise that the people slept on the floor wherever there was any space. There are very few platforms indeed at Hacılar, which could have served as beds: there is one along the west wall of house Q.3 (see fig. 7 and pl. XVIIa) and another in the kitchen of the same house along the north wall (pl. XIXa); but these platforms are so rare that one suspects that they served other functions. 58–59,17 19

On some floors one finds oval or truncated oval structures of clay usually in association with grinding stones, querns and mortars. They probably served as basins for mixing the meal and kneading the dough (fig. 7, house Q.4). 58–59

Apart from the large single room, each house was provided with a number of cubicles (sometimes only one) serving as kitchens or for other domestic purposes. These were attached on either side of the doorway leading into the building and were constructed of light materials. Built of posts and plaster, with reinforced corners consisting of groups of posts, they were thin-walled, but carefully finished and provided with doorways, thresholds and doors (pls. XIII, XVIII–XXa, figs. 7, 13). They were evidently provided with a light roof to keep out sun and rain, and they contained all the necessary equipment for the preparation of food, such as hearths and ovens, grinding platforms with the querns raised above ground level on a brick and clay superstructure. There were small hearths and mortars set in the floor, grain bins of various sizes and shapes; raised tables with rounded kerbs, in one instance (kitchen of house Q.4) three times replastered (figs. 12, 13, pls. XXb, XXIa, b). Benches and platforms were added for the comfort of the occupants, who must 13,18–20,58 59,65 64,65,20,21

have spent a great part of the day preparing food in these rather cramped quarters. Details of one of these kitchens are illustrated in fig. 12 and the equipment of others is shown in graphic form in figs. 10, 11, 13.

The location of the kitchens in a position outside the main room is traditional at Hacılar and was already in force during the aceramic period (see above, p. 4–5). It also prevailed in later phases of the settlement, in Hacılar IV (p. 24), III (p. 24) and especially in Hacılar IIa (p. 34). Even in the fortress of Hacılar I, we find the great ovens built in the courtyards (p. 82), and this deep-rooted custom evidently must be based on a simple principle. What this was is of course unknown, but one might suspect that the risk of fire dominated the builders to such an extent that they grouped the kitchens in open courtyards. Although the system appears to have been successful in the Aceramic village, the same cannot be said for later times; Hacılar VI went up in flames and there is evidence of bad fires in Hacılar IV and IIa, which were not the result of hostilities.

The reason why Hacılar VI burnt so well lies in the inflammable nature of the upper storeys: built of wood, lath and plaster, they had thick flat roofs consisting of bundles of dry reeds placed on wooden beams, topped with a thick layer of clay to make the roof watertight. This upper storey was supported on an elaborate arrangement of posts, the postholes for which were traceable in every building excavated. A longitudinal row of four stout posts, the outer ones engaged along the wall, the middle ones, often paired and free-standing, supported the main roofing-beam, on which the transverse rafters rested. Some of these posts in houses P.1 and Q.5 were 40–50 cm thick, that is, solid tree trunks, mainly pine and juniper. Apart from this row of posts in the long axis of the building, there were others in every corner and further ones placed along the inside of the wall at regular intervals (see fig. 7). In house P.1, there were twelve posts in all; in house Q.3, fourteen and in house Q.2 a minimum of eleven. The only parallels for such lavish use of timber are found in the houses of Early Bronze Age Byblos, which derived its wealth from the timber trade with Egypt. The heavy walls of the Hacılar VI houses certainly did not need such a forest of posts, which, it should be remembered, were not let into the walls to reinforce them with a timber framework, but were independent of the mudbrick. One is tempted to see in this construction a hangover from an earlier period in which houses were built of wood without the benefit of mudbrick walls; in the mountains the villages of the Hacılar period were probably built in this way.

At Çatal Hüyük, in the early neolithic period, one can see exactly the same processes at work, with timber construction being supplemented by mudbrick walls, at first thin, later thick. As time goes on the timber becomes purely decorative, having lost all structural function, and mudbrick internal buttresses take the place of wooden posts, a process also known at Hacılar. However, the wooden framework of the Hacıar VI houses was not merely designed to support the roof, but an entire upper storey and the posts ranged along the wall and in the corners were carried up to support the upper roof. On modern village parallels, one can be virtually certain that on the courtyard side the houses had a broad verandah supported by columns

and reached by wooden flights of stairs, ladders or mudbrick stairs, directly from the court. In front of house P.1 the lower part of such a staircase was found, complete with clay parapet (pls. VIb, VII). The stone foundations north of the side room of house Q.5 probably were the support for a similar staircase which may have turned round the north-east corner and led straight into the eastern verandah (fig. 7). 6,7 58–59

The presence of such upper floors (as distinct from roofs) is indicated by a number of features: in house P.1 part of an upper floor, with hearth of the usual raised type, pottery and objects had collapsed into the room just behind the doorway, covering the collection of pottery and stone bowls that lay *in situ* on the lower floor. In house Q.5, the upper floor had collapsed into the room discharging deposits of carbonised grain and legumes and numerous statuettes, many of unbaked clay. In other rooms pottery occurred in two superimposed levels, the lower *in situ* on the floor, the higher having collapsed with the upper storey. Hacılar II and Hacılar I yielded the same sort of evidence indicative of the presence of an upper storey, and in each case the fierce destruction was caused by the excessive amount of wood in the construction. The settlement of Hacılar VI, burnt *c.* 5600 BC, is by far the best preserved, and in many places the walls still stood to a height of 2 m. Structural details are so well preserved that a short individual account of each building may not be superfluous.

House P.2 (pl. XIII). Size of main room 7·5 × 5·5 m, that is 40 sq. m of floor space. 13 Entrance on court in west wall: one door-jamb rounded and plastered, the other split for insertion of wooden post to which door was fixed. These slit walls reappear in Hacılar IIA, where they are exaggerated and contain sliding screens. Threshold of wood, plastered over and slightly raised. Three cupboards in wall. Single row of four stout posts, round or oval. Plaster screen with two brick steps at end in north-western corner. Near steps stone slab with incised eyes. Hearth and oven not in line. Small postholes north of oven, spitholders or drying rack. Oven set in recess for chimney. Reduction in thickness of wall suggests a further building east of P.2, as was the case between houses Q.5 and 3. South-east corner lacks solid wall and is constructed of wattle and daub; it may have contained a door into small (?) court-yard at the back, which shows that there is no big building east of house P.1. Kitchen in front of west wall in corner with house P.2. Doorway in its north wall next to entrance of house.

House P.1 (pls. VII–XIIa). One of the best preserved houses. Size of room 9 × 4·9 m 7–12 or *c.* 45 sq. m. Wooden threshold, plastered and raised. Both door-jambs plastered and rounded. Five wall-cupboards, the one in the north wall closed by means of wattle and daub partition. Longitudinal row of posts, paired in centre. Of southern pair, one is squared. Bench in north-west corner. Oven has part of flat top intact and hearth is set in line. Two fire boxes near partition in south end of room. Floor behind partition slightly lower. Doorway in partition. Window in south-east corner looking into house P.3. Posts in all corners and at regular intervals along wall. Enclosure in court north of doorway. Flight of steps with balustrade south of doorway. Post and bin at western end. Presumably a kitchen behind staircase, but not excavated.

12 *House P.3* (pl. XIIb). Partly excavated, only west half preserved. Entry probably
60,61 from south in passage between this house and house E.1 (see figs. 8, 9). Large grain bins in corners. Floor worn. Posts in corners, along wall and in the long axis of the house. Built in one stretch with its northern neighbour. Kitchen outside presumed door and west of it. Hearth and shallow partition.

House P.4. Fragment of small room or kitchen, open to south end with wattle and daub partition. Firebox in corner.

60,6 *House E.1* (fig. 8, pl VIa). Stone foundations and brick platforms at eastern end. Fragment of partition west of hearth and oven. Row of posts in long axis of room. Length estimated at *c.* 10 m, width *c.* 5·5 m. Entrance presumably in west wall as house E.2 blocks usual entrance opposite hearth. Badly destroyed and denuded by level I building operations. Yielded C–14 date P.313–A (see p. 93).

60,6 *House E.2* (fig. 8, pl. VIa). North end of house preserved, but denuded to stone foundation. Width *c.* 6 m; length unknown. Fine lime plaster floor. Rectangular raised hearth; traces of oven against east wall. Part of entrance and northern door-jamb of west wall intact. One of long row of posts preserved. Small postholes indicative of kitchen in front of west wall.

The orientation of houses E.1 and 2 is in line with that of P.1 and 3, which suggests accurate planning.

60 *House F* (fig. 8). Before abandoning the highly unproductive trench F in 1958, the south-east corner of a building was noted in our daybook. This would seem to correspond with a building south of house Q.5. No traces of building were found between the east wall and house E.1, which was presumably open court. The area had been badly disturbed by the peasants and no features of the building were observed.

14,15 *House Q.5* (pls. XIVb, XVa). This is the largest known building of Hacılar VI, but could not unfortunately be cleared entirely. It occupies a central position in the buildings south of the central court, and is entered from the courtyard east of it, facing also the possible entrance passage between houses P.3 and E.1. It was very
58–59 solidly built (fig. 7), and its side room at the northern end has deep stone founda-
3 tions which stand on the slope of the aceramic mound (pl. IIIa). The main room measures 10·5 × 5–5·5 m, and occupies *c.* 55 sq. m; the side room is 3 × 2 m, which adds another 6 sq. m. With its 60 sq. m of floor-space it is easily the largest building and, as it contained the vast majority of all Hacılar VI statuettes, it was evidently a building of importance. It has a number of enormous postholes, not well spaced. There are two long partitions or screens with a subsidiary one springing from the north wall of the main room and forming an alcove heated by a fire box. At the southern end there is a raised platform with a number of ritual vessels, several bins, the mudbrick cupboard and a peep-hole in the west wall. The south wall at this point is very denuded, as was the area immediately south (F) already referred to.

The oven is set in a wide recess, the other half of which is occupied by a narrow
14 bench. Behind the oven was found a great deposit of clay sling missiles (pl. XIVb). The doorway into the north chamber has a threshold and the room was full of pottery.

The stone foundations outside the north wall probably supported a staircase to the upper storey. Kitchens must have been situated on either side of the entrance, which was not excavated.

House Q.3 (pls. XVIIa, b). This 'house' has no mudbrick walls of its own and is evidently an afterthought to the original plan, for it was built within the passage that runs between houses Q.5 and Q.4 (fig. 7). Pairs of stout posts formed a portico 2·5 m long at the northern end, from which its kitchen, set in front of house Q.4, was approached. The portico had a broad threshold and may have had double doors. A thin partition divided it from the living room (8×4·3 m), which was provided with a large platform and numerous grain bins along the east wall on either side of a domed oven and hearth. Several stout posts carried the roof, but it is unlikely that this structure had an upper storey. In the south wall made of reeds and matting a slight ramp indicates a doorway. This house yielded the second largest number of statuettes and it seems to have been closely connected with house Q.5. Like the latter it also had ritual vases. Its kitchen (pl. XIXa) was one of the best preserved and was clearly added to the north wall of the already existing house Q.4. 17, 58–59, 19

Houses Q.6 and Q.7 (pls. XVb, XVI). Only a narrow section of these two structures was excavated with a thin partition wall in between. They, too, seem to have been additions to the original plan. As the hearths and ovens have been preserved it is possible to suggest the plan of these rooms, entered by doorways from the south, beyond which must have been the kitchens. Both rooms had fine rows of storage bins. 15, 16

House Q.4 (pl. XIVa). This house differs from the others in that its main room is almost square (6·5×6 m or 39 sq. m) and that it has a narrow doorway in the shortest wall. Its kitchen (pls. XVIIIa, XIXb, XX, XXI) is one of the most interesting found (fig. 12), and lies to the west of the entrance. In addition it has access in its west wall to the deep stone-lined well of the settlement (pl. XXIIb). Near the well there are numerous postholes which might have belonged to some contrivance for drawing water. A row of stout posts runs from east to west through the room. In the north-east corner is an oversize (1·5 m) cupboard, and behind the oven is another recess, which is likely to be a hooded chimney. The hearth is not in line with the oven. Large grain bins are placed in the north-west corner, and the floor of the building was littered with basins, subsidiary hearths, grinding stones, etc. Pottery was abundant, but there were also fine white-painted statuettes, as well as unbaked ones. In the east wall was a window. 14, 18–21, 64, 22

House Q.2 (pls. XXIIa, XXIII–XXV). In many aspects house Q.2, measuring 9×5 m (45 sq. m), matches house P.1. It has two kitchens in front of the wide doorway, a fine threshold, emplacements for wooden door-jambs, a large oven and hearths, incense-burner and fireboxes, spitholders or drying racks, and a large number of postholes. It has a screen in the north-east corner, short as in house P.2. On the opposite wall is a subsidiary hearth, and two narrow doorways (pl. XXIVb) on either side of the oven lead into a courtyard from which the well can be reached. Both doorways have posts for a door of wood. There are no cupboards in this house, but 22–25, 24

there is a sort of service hatch into the western kitchen. The west wall is denuded, but could be traced at floor-level. The building is raised on an artificial fill so that its floor was two feet higher (2·56 m) than that of house Q.4 (1·87 m). The well court was at the same level as that of house Q.2 so that at its southern end there was the same drop down to house Q.6. The area was disturbed when in level V the well
67 was re-excavated for further use (fig. 15). It was probably at the same time that a few burials were made, one in house Q.6 and two in house Q.2. Perhaps they were victims of the fire, the evidence for which was encountered in clearing the well, and were quickly buried without much ceremony in the ruins.

DECORATION OF HOUSES

Although the fine white plaster of the walls (and floors) lends itself to wall-paintings, the people of Hacılar VI, producers of monochrome pottery, did not grasp this opportunity. In the Aceramic period floors had been painted and possibly walls also, judging by the few fragments with geometric design. In the interval that Hacılar remained unoccupied the art of wall-painting reached a climax at Çatal Hüyük, but, with the decline of the hunt as a means of food production, wall-paintings seem to disappear in Çatal Hüyük II, which came to an end, according to radiocarbon estimates, *c.* 5700 BC, at about the same time or a little before Hacılar VII was built. It has been suggested that the gay patterns of textiles that decorate so many Çatal Hüyük shrines gave way to the actual hanging of textiles in buildings instead of reproducing them in paint.[1] The Hacılar late neolithic people were not painters, and pottery decorated by them is poor in design; but after the destruction of Hacılar VI these same people produced abundant textile patterns on their pottery. Spindle whorls are commonplace in Hacılar VI, more so than in any later building-level.
111 That fine textiles were made is clear from an impression on a cup (pl. LXIII : 1), left by the fire of Hacılar VI as the textile burnt. To account for the striking change in painted pottery from Hacılar VI to Hacılar V one must assume that, having gradually learnt to paint during the previous late neolithic period, some imaginative artist started copying the current textile patterns. The result was spectacular. The bareness of the walls of the sophisticated settlement of Hacılar VI is therefore probably illusory, for instead of old-fashioned wall-paintings there may have been actual textile hangings – which unfortunately did not survive the fire.

Another feature of Hacılar VI is the modelling of animal figures, either in the form of theriomorphic vessels or as heads on vases. This also stems from earlier traditions, best seen at Çatal Hüyük. However, it is only in house P.1 that fragments of a large
177 bull's head in plaster with incised eyes were found (pl. CXXIIb); but, judging from the fierceness of the destruction and the crumbly plaster of which the head was made, the absence of other plaster figures is perhaps not surprising. In any case, this single example shows that the art of modelling bulls' heads, etc., in plaster, was not yet extinct, and it also serves as a link between the earlier plastic traditions and the later painted heads on the pottery.

[1] Harold Burnham in *AS*, XV (1965) 173–4.

FUNCTION OF THE EXCAVATED BUILDINGS

With only a section of the Hacılar VI settlement excavated, it is difficult to distinguish between private houses, shrines or workshops, as it is possible to do in the later settlement of Hacılar II. If any building had been essentially different from the others, one might have deduced its public character or special function in the economy of the settlement. Traces of cult were found in nearly every room, be it in the form of stone slabs with incised features, their clay counterparts, small figurines or well-made statuettes. Some measure of domestic cult must be assumed for all buildings. On the other hand, the number of figurines in houses Q.2, 6, 7, F, E.1, 2, P.1–3 is minute and cannot compare with that of pottery and other objects, which shows quite clearly that all these buildings were normal dwellings, inhabited by wealthy farmers. The three houses in the centre of the excavated area, however, are different. House Q.4 shows abundant evidence of normal domestic life, but it also yielded five statuettes, of which one had not yet been baked. In house Q.5 and the adjacent building Q.3, on the other hand, there were found not less than 32 and 11 statuettes respectively, many unbaked and hence produced locally. Ritual vessels were also almost confined to these two locations. It looks as if these buildings were a production centre for the manufacture of such religious objects, essential for the spiritual needs of the community. This may well explain the importance of house Q.5, but one would hesitate to call it a shrine. This group of central buildings, all of which made statuettes and perhaps also pottery, corresponds to the potters workshops of Hacılar II.

DEVELOPMENT OF THE HACILAR VI PLAN. Figure 9 61

The excavations have yielded sufficient evidence to establish the way in which the builders of Hacılar VII–VI laid out the plan of their settlement. A glance at the plan (fig. 7) shows a number of L-shaped units each consisting of two houses, one with its 58–59
long axis oriented from north to south, the other with an east-west axis (Q.2 and 4; Q.5 and F; E.1 and 2; P.1 and 3). Even without excavation it is then possible to develop the plan where only sections of rooms were exposed. Houses Q.6 and 7 would again form L-shaped units, the latter with house F, the former with an unknown building south of the court with the well. The kitchen west of the entrance to house Q.2 indicates that there was a building limiting the central court to the west, undoubtedly accessible from this court. South of it the west wall of Q.2 would form the east wall of a further house, entered from the west. Another row of houses along the west and south side, linking up with house E.2, probably formed the periphery of the settlement and these houses would have communicated with the interior through courtyards and passages lying in front of the buildings reconstructed in fig. 9. We 61
may assume that the northern half of the settlement was similar in construction, beyond the central court.

When comparing the extended plan of Hacılar VII–VI with that of the earlier settlements at Çatal Hüyük, from level VIA onwards, it needs little imagination to see that the one is developed from the other. The breakthrough in the architectural development of Hacılar VII–VI lies in giving up the principle of access from roof-level only. By providing each building with doors at ground-level, courts and

passages gained in importance and provided easy access to all parts of the settlements, as well as ample space for such features as kitchens, bread-ovens, enclosures for storage of fuel, etc., and other dependencies which had previously been crammed into the buildings or accommodated on the roofs. Whether this was a local development or the result of changes which had taken place further east remains unknown, for the buildings contemporary with Hacılar VII–VI at Çatal Hüyük (levels I and O) are poorly preserved and not yet excavated on any comparable scale.

ESTIMATES OF THE POPULATION OF HACILAR VII–VI

With the remains of only a dozen buildings exposed, it may seem bold to attempt a population estimate of the late neolithic settlement of levels VII–VI. Nevertheless, this is common practice in archaeology, and many estimates have been made on much more slender evidence. In the absence of sleeping platforms and burials, which at the slightly earlier site of Çatal Hüyük allow one to assess the size of an average family as five individuals, the twelve buildings excavated may have had a population of at least sixty individuals, which is nearly as much as the estimate for the entire population of Hacılar IIB!

The development of the plan would allow for at least twenty-five houses for the southern half of the settlement and if the northern half was only approximately similar, Hacılar VII–VI may have contained about fifty houses, or a minimum of 250 souls.

Chapter 3. The Early Chalcolithic Period

The Settlements of Hacılar V–III

Hacilar V

After the conflagration in which Hacılar VI perished, *c.* 5600 BC, the survivors continued to live on the site, as is evident from a great number of floors covered with Hacılar V pottery, both monochrome and painted. In area Q they re-excavated the well of the previous settlement, destroying part of the burnt walls of the houses in the process (fig. 15). In areas B and P simple clay floors lay over the burnt debris of 67
Hacılar VI, and other floors with Hacılar V material were found in areas F and E, covering burnt remains of Hacılar VI, and in a small trench in area K (fig. 6). 57

Whereas there is plenty of evidence for re-occupation in the form of courtyard floors, pottery, small objects and so forth, what is missing is any trace of architecture, at least within the excavated areas. It seems likely that the people of Hacılar V refrained from building directly on top of the massive burnt ruins of the previous settlement, which they turned into courtyards sealed in by new mud floors; instead, the new buildings were constructed further out, south and east of Hacılar VI, where they later fell a prey to the large-scale levelling and reshaping of the old mound prior to the construction of the Hacılar I fortress some three and a half centuries later.

The other possibility, that the Hacılar V people only constructed light buildings of an impermanent nature, built of wood, lath and plaster, is unlikely in view of the fact that abundant traces of buildings of this type have been found in Hacılar IV–II. Had such indications been present in the excavated areas, they would have been found. The evidence of pottery, etc., suggests that Hacılar V was a transitional period, probably of fairly short duration: if we allow two generations, or half a century, for Hacılar V, *c.* 5600–5550 BC may be a reasonable estimate.

Hacilar IV

Remains of Hacılar IV, which has left thick rubbish deposits in areas B and P and may have lasted a century (*c.* 5550–5450 BC), are only slightly more in evidence than those of the preceding phase. The area of distribution of Hacılar IV remains within the excavated portions of the settlement, are indicated in fig. 15. It would 67
appear that the settlement of this period had moved northwards and lay mainly below that of Hacılar II, but it did not extend as far south nor as far east as Hacılar II. In area Q no remains of Hacılar IV, nor any of Hacılar III intervened between the

IIA and the VI settlements. In area P there were a number of graves below a court-
96 yard floor (fig. 43) which may have been located east of the settlement. This negative evidence suggests that the buildings of Hacılar IV lay further north and west than those of Hacılar II. The very small area excavated produced the remains of one house built in mudbrick and an adjacent group of domestic courtyards on its eastern side
68 (fig. 16), in all respects a predecessor of the layout of Hacılar IIA. The remains are too scanty to merit more than a summary mention; the details are obvious from the plan. What is interesting, however, is the continuity in building method, for as in Hacılar VI we find solid mudbrick construction side by side with post, lath and plaster buildings of subsidiary importance. The latter were destroyed by fire, and although a number of interesting objects were found in the ruins, we were unable to obtain a radiocarbon date for the destruction, which in the absence of skeletons, does not appear to have been of a violent nature. Characteristic both of Hacılar V and IV are deposits of slingstones, river pebbles from the nearby bed of the Koca Çay (pl.
26 XXVIa). The graves are described below in the chapter on burial customs, p. 88.

Hacılar III

In Hacılar IV we have already noticed a shift of the site in a northwesterly direction.
67 The site of Hacılar III (fig. 15), the immediate predecessor of the fortified enclosure of Hacılar IIA, is known from small areas of excavation in A, B, P and O below Hacılar II, but also from area C. From this evidence it would seem that Hacılar III had shifted even further north than its predecessor, but evidently also extended further east. Like Hacılar IV, Hacılar III probably lies below the denuded northern half of the mound, left unexcavated and presumably truncated by the northern circuit of the Hacılar I fortress. In areas A and B only courtyard floors were found, but the denuded
69,26 remains of unburnt buildings appeared in area P (fig. 17; pl. XXVIa), extending below the north wall of the Hacılar IIA settlement. In area C, we found the remains of a burnt kitchen with a bin filled with carbonised plant remains, a few crude clay
70 statuettes, some pottery and a necklace of beads (fig. 18).

Hacılar III is as badly represented architecturally as Hacılar IV and V, but the little evidence recovered shows an unbroken development of occupation between the end of Hacılar VI and the construction of a fortified enclosure in Hacılar IIA. The few building remains suggest that Hacılar III and IV did not substantially differ from Hacılar IIA, and it is unlikely that much important evidence has been lost. If any post excavation regrets may be voiced here, it is that one would have liked to explore Hacılar V in more detail.

It seems unlikely that Hacılar III was of long duration and we have tentatively assigned half a century (*c.* 5450–5400 BC) to this insubstantial building-level. No graves are associated with this settlement, but there is much pottery and numerous fragments of statuettes, both monochrome and painted, which foreshadow the spectacular developments in this field in Hacılar II.

The shifting settlement pattern, which can be clearly observed at Hacılar, is of great interest for it shows that even low mounds can be made up of many successive building-levels and the height of a mound is therefore not necessarily an indication

of the length of period during which it was occupied (fig. 41). Hacılar reaches less than 5 m in height; but, if we take the highest preserved walls of each building-level and add them up in the conventional picture of a mound in which one building-level was found on top of the other, its height would have been 12 m! The excavations have shown that if a really representative section of the architectural plan of each building-level is to be obtained, much more than half the mound should have been excavated. Thorough exploration knows no short cuts. 94

The Fortified Settlement of Hacılar II

In the previous pages the scanty remains of Hacılar V, IV and III were described and these span the gap between the comparatively well-known settlements of Hacılar VI, destroyed *c.* 5600 BC, and Hacılar II, constructed *c.* 5400 BC, according to our radiocarbon dates.

The settlement of Hacılar II covered the highest part of the mound and was therefore exposed to denudation, to interference by the builders of the Hacılar I fortress, and to more recent commercial exploitation by the villagers who discovered the site, and had found a market for the spectacular painted pottery produced by this settlement (fig. 41). 94

Hacılar II offers a unique example of a completely excavated site of the second half of the sixth millennium BC. It consists of a rectangle of oblong shape, measuring *c.* 36×57 m or 2000 sq. m, roughly oriented towards the points of the compass (fig. 20). It would appear that this area represents the entire settlement, for soundings in areas F, N, C, H, and K, to the south, west, north and east have yielded no further traces of Hacılar II occupation. 72–73

Although the settlement was small, it was surrounded by a 1·5–3 m thick mudbrick wall without stone foundations, guarding the site against any sudden attack. This wall was provided with small towers on stone foundations (pl. XXVIIIb) and salients at the corners. Two of these towers, somewhat irregularly placed, flanked a narrow doorway that gave access to an entrance passage leading to the west court in the north-west quarter of the settlement (pls. XXVIIIb, XXIXa). Two others may have flanked the narrow doorway leading into the shrine in the north-east corner. The outer face of the enclosure wall has not been excavated here, but if there had been a tower west of that narrow doorway it would have fallen within the area of trench A, where modern disturbances had only left masses of burnt bricks as sole testimony to a former enclosure wall (fig. 20; pl. XXXIIIa). Similarly, on the western side of the settlement the wall was badly denuded, having fallen outwards during the destruction of the settlement. No traces of a doorway or gate were found in the western circuit of the wall, but on its southern side another, slightly more monumental gate with an open portico in front led through an antechamber into a long corridor on the left, which probably gave access to the top of the wall (see fig. 20). On the right another door led from the antechamber straight into the south court of the settlement. The greater part of the south wall was destroyed by denudation, but a small section of it

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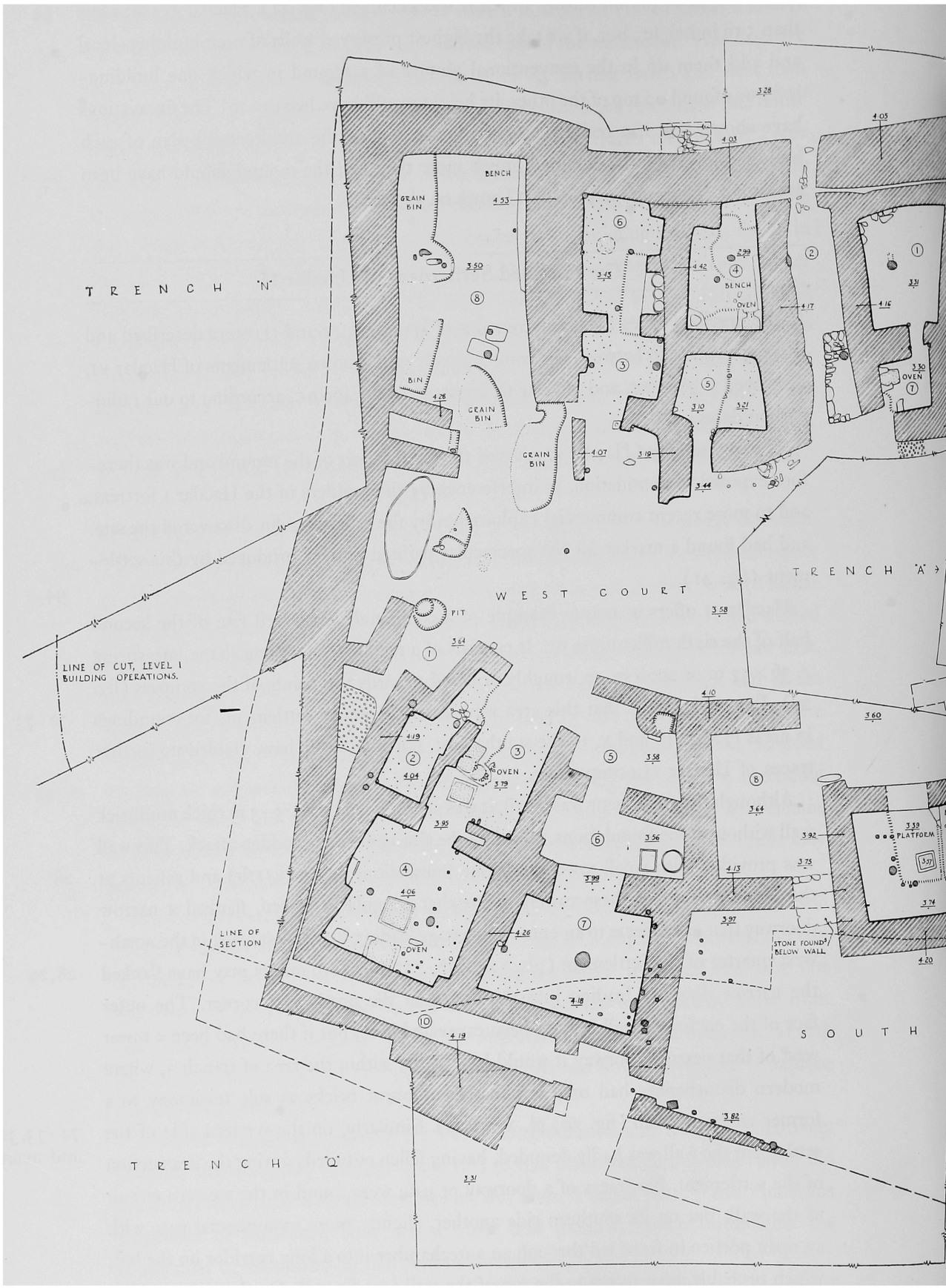
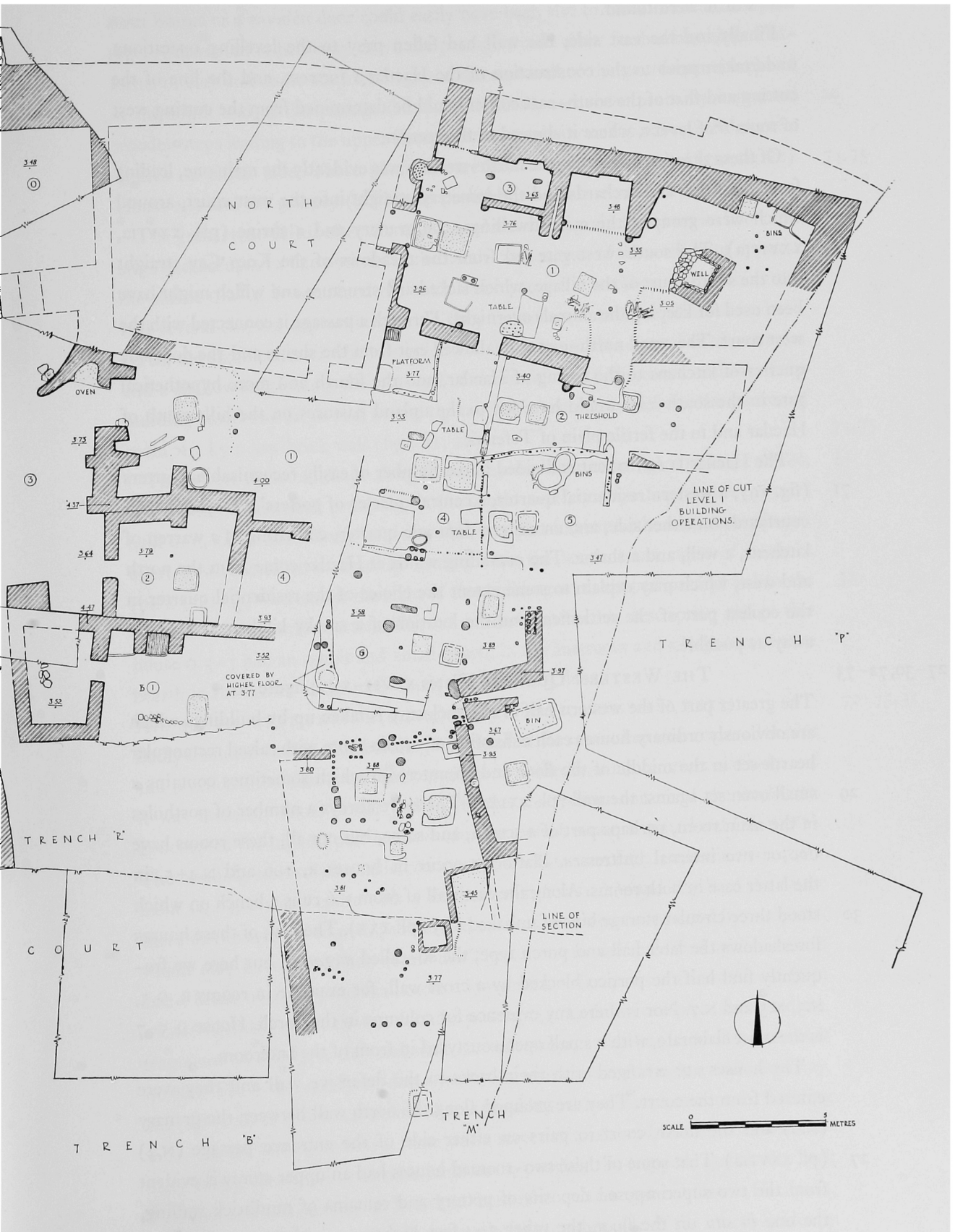
28,29

72–73,32 and overleaf

72–73



20. Hacılar IIA. Plan of the fortified village.


NORTH
COURT
OVEN
PLATFORM
TABLE
WELL
BINS
THRESHOLD
LINE OF CUT
LEVEL 1
BUILDING
OPERATIONS.
TRENCH "P"
COVERED BY
HIGHER FLOOR
AT 3·77
BIN
LINE OF
SECTION
TRENCH "R"
COURT
TRENCH
"M"
TRENCH "B"
SCALE
METRES

was recognised during our last season. It is possible that a further doorway led through the wall into the domestic quarter at the east side of the settlement, but no clear traces of it were found.

Finally, on the east side, the wall had fallen prey to the levelling operations undertaken prior to the construction of the Hacılar I fortress, and the line of the cutting and that of the south-east corner could be determined from the cutting west of room 6 of level I, where it showed in the section.

Of these three or four gates, the north-western was evidently the main one, leading from the fields and orchards and the cemetery straight into the west court, around
27 which were grouped the main dwellings, the granary and a shrine (pls. XXVIIa,
28 XXVIIIa). The south-west gate led from the meadows of the Koca Çay straight into the south court of the village, which lacked any structure and which might have been used for keeping the animals overnight. Through a passage it connected with the west court. The small north-east gate allowed exit from the shrine and the domestic quarter of kitchens to the spring of Hacılar, and the fourth and more hypothetical gate in the south-east would have led to the upland pastures on the hills south of Hacılar and to the fertile plain of Tefenni.

The Hacılar II settlement is divided into a number of easily recognisable quarters
71 (fig. 19); a western residential quarter, a central quarter of potters' workshops with courtyards on either side, and an eastern domestic quarter, consisting of a warren of kitchens, a well, and a shrine. The prevailing winds at Hacılar come from the north and west, which may explain to some extent the choice of the residential quarter in the coolest part of the settlement and the location of a smoky kitchen area as far away as possible.

27–30,72–73 THE WESTERN QUARTER. Plates XXVII–XXX; figure 20

The greater part of the western half of the enclosure is taken up by buildings which are obviously ordinary houses each consisting of a main room with raised rectangular hearth set in the middle of the floor and an anteroom which sometimes contains a
29 small oven set against the wall (pl. XXIXa). There are always a number of postholes in the main room, perhaps part of a screen, and some, but not all, these rooms have one or two internal buttresses. Platforms occur in houses R, N.6 and N.4–5, in the latter case in both rooms. Along the east wall of room N.6 runs a bench on which
30 stood three circular storage bins of unbaked clay (pl. XXX). The plan of these houses foreshadows the later hall and porch type, the so-called *megaron*; but here we frequently find half the portico blocked by a cross wall, for example in rooms R, Q.5, N.3, N.5 and N.7. Nor is there any evidence for columns in the porch. House Q.5–7 is the most elaborate, with a small open courtyard in front of the anteroom.

The houses are arranged with their backs to the defensive wall and they were entered from the court. They are grouped along the north wall between the granary (N.8) and the north court in pairs on either side of the entrance passage (N.2)
27 (pl. XXVIIa). That some of these two-roomed houses had an upper storey is evident from the two superimposed deposits of pottery and remains of mudbrick walling, the one *in situ* on the floor, the other 3–4 feet higher up, and again covered by

mudbrick. Room N.4, which had no entrance at ground floor level, seems to have been a guardroom (pl. XXIXb), and through a wide slit in the east wall, nearest to the gate, 29
stout beams or a wooden door could easily have been slid to block the entrance passage. A constriction half-way down the passage would allow further blocking. Platforms of clay and stone are found against the east wall of the guardroom (N.4) and at the south end of the passage (N.2) (pl. XXIXa), and these probably supported 29
wooden steps leading to the upper floor, which extended over the passage and the two houses on either side. These platforms are extremely solidly built (figs. 21, 22). 74,75
House N.0 and the granary (N.8) were probably single-storeyed.

The granary, so called after the widespread scatter of grain found on its floor, was large and occupied a fine position in the north-west corner of the settlement opposite the shrine Q.2–4. It contained the sunk lower parts of a number of grain bins and had several sloping depressions in the floor as well as a number of brick or mud kerbs, the significance of which is unknown. There were also a number of postholes and a shallow ledge along the east wall of the building. In the court in front of the building stood two large oval ovens, the northernmost screened from the portico of room N.3 by a low brick wall (figs. 21, 22). 74,75

There were three buildings along the south side of the court (pl. XXXII), a shrine, 31
which will be described presently, in the south-west corner, a large house (Q.5–7) next to it, and a third house (R) somewhat set apart further to the east. A small open court gave access to a doorway leading into the south court, west of house R (pl. XXXIIIb), whereas on the right of the building an L-shaped passage led to the 32
potters' and domestic quarters. The houses need no further description except that house Q.5–7 had an ashpit and small hearth in the anteroom and a large rectangular hearth in the centre of the main room on a later IIB floor.

THE SOUTH-WEST SHRINE (Q.2–4). Figures 20–2; plates XXXI, XXXII 72–75,31

Badly denuded as it is, this building is of interest for more than one reason. Its plan and position show that it was built together with the large house on its east side, and it was evidently fitted rather badly into the south-west corner of the enclosure. It occupied the highest part of the settlement, which was not quite level (pl. XXXI). 31
The building consists of a main room (Q.4), an anteroom (Q.3), a further compartment (Q.2), a small court with a further grain bin (Q.1), and south of the latter there was an area paved with pebbles and covered with a roof supported by two posts, which may have served for ablutions. The anteroom was provided with a hearth and a bread oven. Beyond the hearth a low screen wall separated the anteroom from a small chamber in which were found a painted figure, almost complete, but headless, fragments of others, a clay seal with incised design, stone bowls, beads, and other objects. From the anteroom one entered the main room through a wide doorway, the east jamb of which was rounded and provided with an emplacement for a sliding door. To the left, upon entry, there was a screen of posts and matting and immediately facing the doorway stood a large oven, possibly flat-topped, against the back wall with a raised rectangular hearth in front of it, an arrangement rare in Hacılar II, but typical of Hacılar VI. Two large postholes on either side of the hearth evidently

supported the roof beam and upper storey, the existence of which is indicated by debris and the heavy walls. In the west wall there was a niche in which lay a flat slab of stone, and on the floor of the room were a number of fragments of crumbly plaster decorated in red paint on a white ground, with patterns which could not be made out. In and all around this building was found a vast amount of finely painted pottery, mostly decorated in the so-called fantastic style and including a number of vessels that would seem to have been of ritual use, such as a kernos or ring vase, a fragment of a cup in the form of a human head, and bowls decorated with schematised
352 pictures of the mother goddess attended by animals (fig. 103).

Apart from these finds, this building has a number of features in common with the north-east shrine of the Hacılar IIA settlement, which was burnt and destroyed at the end of phase IIA. Shrine Q.2–4 was probably built at the same time, but escaped the fire and is likely to have been the only shrine in use during the later (IIB) phase of the settlement.

The construction of this western quarter is extraordinarily solid by Hacılar standards and the structures were evidently built to last. That they fulfilled this function is clear from the archaeological record; the buildings south of the court, including the shrine, have several floors and they appear to have been in use throughout both phases of the settlement, whose total span of life was probably a century and a half. The entire western part of the settlement stood throughout this period except house R, which belongs to phase IIA only, and was burnt and not rebuilt. The only other modification was the construction of another granary on top of the old one in level
78–79 IIB (fig. 25). All the buildings in this part of the enclosure show signs of age; walls bulge or lean, they were patched up or strengthened and had lost the crisp outline of relatively new buildings.

71 THE POTTERS' WORKSHOPS. Figure 19

The centre of the village was occupied by three potters' workshops, houses A.1, A.2 and B, all built in phase IIA. In phase IIB, however, the burnt workshop B had been abandoned, so that probably only two ateliers remained.

Surrounded by three courts, the workshops were accessible from all sides: the northern two, A.1 and A.2 had short porticos facing the west court and larger ones opening on to the domestic quarter. Workshop B, the largest of all, had an extra room on the west side and was approached by the L-shaped passage from the west court, but it also had access to the south court and domestic area.

The characteristic of these three buildings is that they lacked the normal domestic appurtenances of a private house. They had, of course, the normal pattern of hearths,
26 screens, internal buttresses and posts (pl. XXVIb), but there were no saddle-querns for the preparation of food, no storage bins for grain, no platforms for sleeping, no remains of food, and no ovens – features never missing in ordinary houses. Instead, there were querns and mortars covered with red and yellow ochre (six in A.2 and at least four in A.1 and in B), lumps of the same material, a clay bin filled with clay, paint cups, palettes, modelling tools, clay ladles, and, most striking of all, numbers of unused vessels, stacked and brightly shining – jars in room A.1, oval cups in A.2

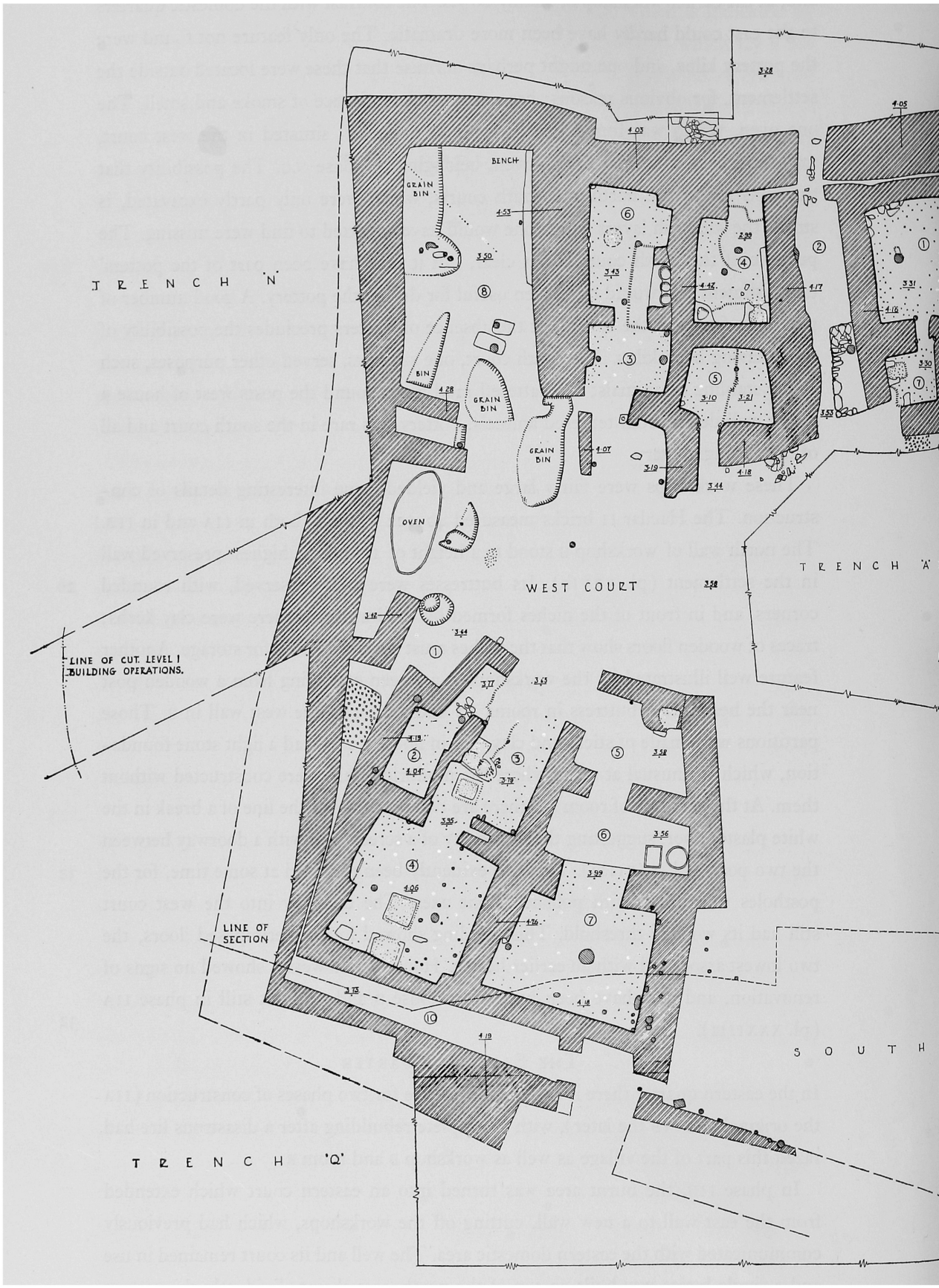
and, in the earlier workshop B, mainly bowls. The contrast with the domestic quarters to the east could hardly have been more dramatic. The only feature not found were the pottery kilns, and one might perhaps surmise that these were located outside the settlement, for obvious reasons: fire risk, and the nuisance of smoke and smell. The one oven, which was found just in front of room A.1, situated in the west court, may have been a normal bread-oven, belonging to house N.O. The possibility that the kilns lay in the north and south courts, which were only partly excavated, is small; the solid ash layers which one would have expected to find were missing. The purpose of the north court is not clear, but it may have been part of the potters' establishment and would have been useful for drying the pottery. A good number of pots were found in the court, but the absence of wasters precludes the possibility of there having been kilns. The south court, one suspects, served other purposes, such as the stabling of animals; the battered mud floors round the posts west of house R might well derive from tethered animals. Pottery was rare in the south court and all of it was fragmentary.

These workshops were fairly large and yielded some interesting details of construction. The Hacılar II bricks measured 40×22×10 cm, both in IIA and in IIB. The north wall of workshop B stood to a height of 1·5 m, the highest preserved wall in the settlement (pl. XXVIb). Its buttresses were well preserved, with rounded 26
corners, and in front of the niches formed by the buttresses there were clay kerbs; traces of wooden floors show that the niches must have been used for storage. Another feature well illustrated by the workshops is a screen extending from a wooden post near the hearth to a buttress in rooms A.1 and A.2, or to the west wall in B. Those partitions were made of sticks and clay, but in house B they had a light stone foundation, which is unusual at a site where the mudbrick walls were constructed without them. At the east side of room A.1 there are two postholes at the line of a break in the white plaster floor, suggesting the possibility of a screen wall with a doorway between the two posts (pl. XXXIIIa). This had evidently been removed at some time, for the 32
postholes were filled with polished stone axes. The doorway into the west court still had its wooden threshold. This building showed four superimposed floors, the two lowest associated with an earlier hearth. House A.2, however, showed no signs of renovation, and may have been built after house B and A.1, but still in phase IIA (pl. XXXIIIa). 32

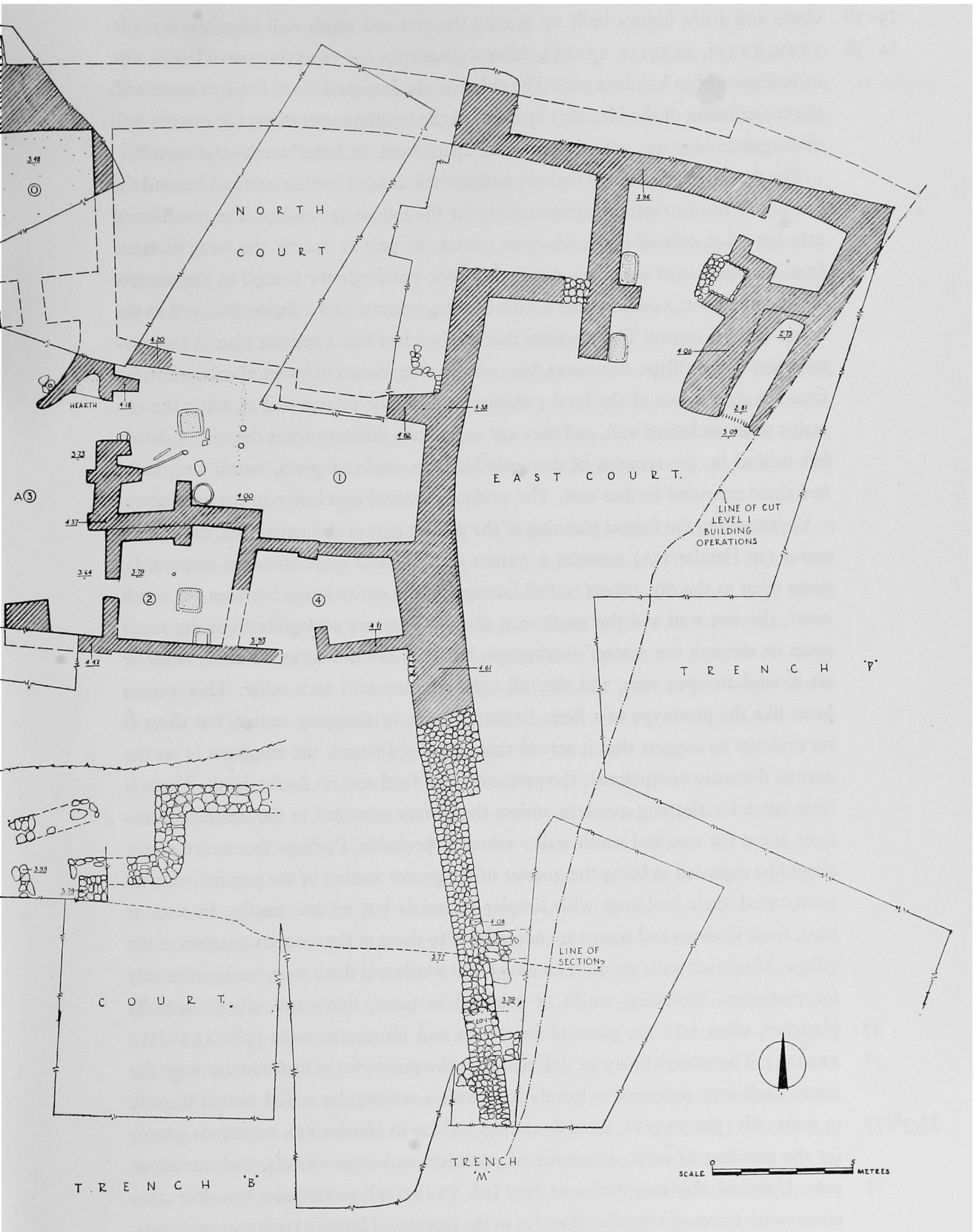
The Eastern Quarter

In the eastern quarter there is abundant evidence for two phases of construction (IIA the original and IIB the later), with a complete rebuilding after a disastrous fire had razed this part of the village as well as workshop B and room R.

In phase IIB, the burnt area was turned into an eastern court which extended from the east wall to a new wall, cutting off the workshops, which had previously communicated with the eastern domestic area. The well and its court remained in use and a single house was built on top of the north-east shrine. Evidently the eastern quarter lost its importance during the later part of the Hacılar II period (figs. 25–27, 78–81, 30
pl. XXXb). and overleaf



25. Hacılar IIB. Plan of the village as rebuilt after the fire.


NORTH
COURT
EAST COURT.
HEARTH
LINE OF CUT
LEVEL I
BUILDING
OPERATIONS
TRENCH 'P'
LINE OF
SECTION
COURT.
TRENCH 'M'
TRENCH 'B'
SCALE
METRES

In the earlier phase, this area brimmed with life; for not only was the most important shrine located here but also the well, and south of it a great number of kitchens and a few houses built up against the east and south wall (figs. 21–23; pls. XXXV, XXXVI, XXXVIII, XXXIX). After a disastrous fire everything was left *in situ*, including nearly a hundred pots. The only serious damage done to the area came with the construction of the Hacılar I fortress: in the levelling operations the eastern wall of the settlement was entirely removed, apart from its inner north-east corner.

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The theoretical possibility that the settlement extended further east and beyond the line of our reconstruction seems unlikely for the following reasons. The north-west gate lies 16 m east of the north-west corner, its pair at exactly the same distance from the north-east corner as restored. Public buildings are located in the corners of the settlement: a granary and a shrine in the western, and a shrine and well in the north-eastern corner. This suggests that the builders had a definite plan in the construction of the village. Moreover, the considerable masses of burnt Hacılar II bricks found along the line of the level I cutting can only be interpreted as being the remains of an enclosure wall, and they are completely different from the sort of debris left behind by the remains of domestic kitchens made of posts, wattle and daub, had these extended further east. The evidence seemed conclusive to the excavators.

Contrasted to the formal planning of the greater part of the settlement, the eastern sector (in Hacılar IIA) presents a warren of small and large domestic courtyards, some open to the sky, others roofed, occupying the entire space between the south court, the east wall and the north-east shrine. They are accessible from the south court or through the potters' workshops, but they are not arranged along lanes or set around an open area, and they all communicate with each other. This warren looks like the prototype of a Near Eastern bazaar, or shopping centre, but there is no evidence to suggest that it served this purpose. Instead, the emphasis is on the normal domestic occupations: the preparation of food and no doubt drink. There is little space for sleeping quarters, unless those were arranged in the destroyed sections along the east and south wall – which is probable. Perhaps this entire sector should be regarded as being the quarter of the poorer section of the population, who constructed their buildings with simpler materials but no less neatly. In size, at least, these kitchens and rooms are not inferior to those of the western quarters of the village. Mudbrick walls are quite common, but wattle and daub were used extensively for partitions. Postholes, single or grouped in pairs, fours and sixes, carefully plastered, often take the place of buttresses and transverse walls (pls. XXXVIII–XXXIXa). The material may be different, but the principles of architecture were the same. Each area contained a bread-oven with a rectangular raised hearth directly in front of it (pls. XXXIVa, XXXIXb and fig. 24) (as in Hacılar VI), numerous querns for the grinding of meal, a number of pounders and stone vessels, and numerous pots. Unbaked clay receptacles or bins (pl. XXXVIIIa), rectangular box-like containers with traces of a wooden floor (as in the recesses of house B) occur in profusion. In many ovens painted pots were found in which, presumably, food was heated.

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It would be repetitive and unrewarding to describe each of these kitchens or the

rooms to which they belonged in detail and more often than not the actual association of any one enclosure with its neighbour is controversial.

THE SHRINE AND WELL AREA

The north-eastern shrine is easily the most interesting building of the Hacılar II settlement (figs 20–3; pl. XXXVIa). It was located between the north court and a small court in the north-east corner containing a stone-lined well, which was found filled with carbonised food plants and a bone reaping-knife. Several postholes near the well suggest that it was provided with a *shaduf* for drawing water. Along the north wall of the well-court was another hearth and a clay bin. The wall could be reached from the shrine through an open colonnade with three columns. Between the shrine and the north court there was no communication. The north-east gate, however, led straight into the shrine, but at a later date (?) it had been closed by a wattle fence. Two doors in the south wall of the shrine gave access to the domestic enclosures, but the third and middle one opened on to an L-shaped area which led to the courtyard at the back of potters' workshop A.I and may have been the main entrance of the shrine, although the east door, which also led to the well-court, was provided with a more monumental door, preceded by two steps, formed by plastered-over wooden logs (see fig. 23). 72–76, 35, 76

The arrangement of a central door in the long side of the room and kitchens on either side of the doorway is strongly reminiscent of Hacılar VI houses. So are two other features: a large flat-topped hearth, nearly 1 m in height, with a large raised rectangular hearth immediately in front, and a recess in the wall behind the oven. Every house in Hacılar VI was similarly provided and house Q.VI.4 shows the same arrangement of oven and cupboard in the wall directly behind. The difference is that in the Hacılar VI houses the hearth and oven are placed directly opposite the door (as in the south-west shrine, Q.2–4), but here they are moved 90° and set against the west wall, along the long axis of the building. The space behind the oven was probably closed by a thin partition, and one wonders whether this arrangement was not a primitive chimney to draw the smoke out of the room, as it may have been in the Hacılar VI houses. North of the oven and built into the west wall was a small fireplace only differing from modern ones in that it was not provided with a flue. In front of the hearth and near the screen, which separated the main room from a small compartment with a niche in the north wall, stood a rectangular fire-box, made of clay, also familiar from Hacılar VI, and further traces of hearths and bins, badly ruined, occurred along the south wall, between the two doorways. Evidently this part of the building contained the normal domestic features. The small compartment along the north wall, screened from the main section of the room, contained the lower part of a limestone slab, some 24 cm wide and 6 cm thick, still standing *in situ* in the niche; its upper part had disappeared. One is reminded of a similar stone slab in the niche in shrine Q.2–4, and of the stone slabs with incised faces that are so characteristic a feature of the houses of Hacılar VI. In front of the stone stele were two oval holes, and near one was found a bowl with a spout for pouring, as well as other vessels. The oval holes were not postholes, contained no carbonised wood,

and they had been lined with clay. Evidently this area served some cult purpose. Some unidentifiable fragments of painting were found on the plaster near the niche, a further parallel with fragments of painted plaster from the south-west shrine.

The eastern part of the shrine, contained a large alcove, with a raised platform, set between two short walls, of which the western was provided with a deep slit for a sliding door (or screen of stiff matting) which could be fastened to two posts opposite; this meant that the shrine could be divided into two. At the back of the alcove was a second niche in the north wall, this time empty. In front of the broad platform was a small rectangular hearth, sufficient to heat this part of the room. The arrangement for a sliding screen is matched in the south-west shrine.

To support the roof of this vast room, which measured *c.* 8 ×6 m, the largest single room in the settlement, an ingenious use was made of columns, placed in two rows of five and seven columns each in the long axis of the building. The northern row consisted of one post engaged along the west wall; the second occurred at the end of the screen; the next two on either side of the slotted partition wall; and the fifth was engaged in the end of the east wall, before it opened into a three columned portico. The second, southern row started at the east end of the colonnade with a double post; a second pair faced the partition wall; a third pair faced the single post at the
76 end of the screen; and the final one rested against the west wall (fig. 23). Two further posts flanked the niche with the stone slab, engaged against the north wall. With its sixteen columns, which may have been carved and painted, this building must have been the most impressive in the settlement, but I no longer believe that its centre was open to the sky as suggested in a preliminary report before the similar houses of Hacılar VI were excavated. Nor is there any evidence to suggest that this hall had been provided with an upper storey. On the floor of this building were found numerous pots, both painted and monochrome, particularly in front of the recess with the standing stone, around the hearth, and around, inside and even on top of the oven. Lying next to the western hearth was the crouching skeleton of a person of advanced age, judging by its toothless jaws, and its position suggested that it was a victim of the fire which destroyed the building at the end of phase IIA.

Below the floor of this building were found one single and two double graves, the latter both containing a mother and child. The bodies were deposited in a
36 tightly contracted position (pl. XXXVII), without fixed orientation, on their right sides, in irregular hollows made in the floor. Funerary gifts were sparse and consisted
36 of bowls and cups, at most one with each skeleton (pl. XXVIIa), but some had none. This is the only building in Hacılar II that contained any burials.

Taking everything into consideration, it is extremely unlikely that this elaborately constructed edifice was just another private house. Its position, controlling the access to the only well, its size and its graves suggest a public building of major importance. In the period concerned the idea of any authority other than a religious one can hardly be considered, and the building was therefore probably the main village shrine and the seat of the local authority, responsible for the welfare, both religious and economic of the small society of Hacılar II.

Estimate of Population

It is evident that the population of Hacılar IIA was small. There were seven buildings in the western quarter, four in the eastern as well as another seven courtyards with domestic fixtures, which would amount to about eighteen families. The count of hearths gives twenty. Allowing an average family to have consisted of five individuals, the total population of Hacılar IIA would be roughly a hundred – a not unreasonable estimate, which might conceivably be extended to one hundred and fifty souls.

After the fire, the population of Hacılar IIB would seem to have greatly declined. Besides a smaller granary, a single shrine, and two potters' workshops, the village counted not more than six houses, or about ten hearths in all. This suggests a population of fifty to seventy, or half that of Hacılar IIA. This evident decline in population may well have contributed to the total destruction of the settlement by an overwhelming wave of newcomers in Hacılar I, *c.* 5250 BC, and to the marked absence of cultural continuity between Hacılar II and I.

The Hacılar II settlement is estimated to have existed for about a century and a half, that is, from *c.* 5400–5250 BC. We do not know when the fire destroyed Hacılar IIA, but if we assume that it came around the middle of this period the five generations of Hacılar II would have yielded a cemetery of *c.* 375–550 graves of which two-thirds would have belonged to the inhabitants of the earlier phase, Hacılar IIA. It should perhaps be noted that only one skeleton was found in the burnt settlement, in spite of two severe conflagrations, and one can therefore assume that almost the entire population must have escaped from the actual fires, whatever their subsequent fate may have been.

With the destruction of Hacılar IIB the long, local development of culture, which had started with Hacılar IX half a millennium earlier, came to an end. During those five hundred years the farmers and potters of Hacılar enriched the world of the time with a culture that had no equal.

Hacılar II. Distribution of Painted Pottery

Instead of the conventional catalogue, consisting of a list of pottery found in each room, an attempt has been made here to illustrate what pots came from each room in a graphic form (pp. 41–56). This has a distinct advantage in that it allows one to compare the painted pottery of one room with that of another, thus illustrating the often very marked differences of groups of contemporary pottery used in the settlement. In this connection it should be pointed out at once that this variety only applies to the painted wares. The monochrome pots, on the other hand, are evenly distributed throughout the settlements of Hacılar IIA, IIB and I, and as they contribute nothing to the diversity of taste and fashion they are omitted from the plans and tables. For this same reason a distribution map of Hacılar VI pottery is not instructive. A similar inventory for Hacılar I appears on pp. 57–74.

HACILAR IIA

Pottery of Hacılar IIA comes almost exclusively from the eastern quarter and the south-west corner of the settlement. The north-west quarter was, with the exception of the granary and the west court, not excavated below the IIB floor level, and the granary of IIA yielded no pottery at all, the west court a minimum amount (N.IIA).

320–9 The main deposits from the IIA shrine are illustrated in figs. 85–9, but, since all the material was dumped and hence not *in situ*, the position of the pots could not be located on a plan. By contrast, the pottery from house B.IIA, the shrine P.IIA.1,3 and the adjacent domestic enclosures P.IIA.2 (and 2a) and P.IIA.4 could be plotted in position (pp. 51 and 52). Compared to the richness of the shrine area, the domestic courts further south were almost without any painted pottery and houses B.IIA (a workshop) and R.IIA were poorly provided. In the former case this may be due to the destruction of its southern wall and possible storerooms, but excavations below houses A.IIB.1,2 and the adjacent north court also encountered little pottery. It seems then that the main areas for painted pottery in the Hacılar IIA settlement were those of the north-east and south-west shrines. Although the pottery from these two areas is extremely varied, there are no technical differences in the painted wares. Monochrome ware was far more common in the north-east domestic quarter than around the south-west shrine. Ritual vessels, such as the *kernos* or the cup in the form of a human head and the numerous bowls with representations of the goddess and her attendant animals, are a speciality of the south-west shrine. The pottery from the north-east shrine was predominantly geometric in design, including a number of cross or flower patterns. It may not be too far fetched to draw attention to the two shrines of Çatal Hüyük III, one of which was devoted to textile patterns of a geometric nature, including cross and floral ornament (shrine A.III.8), whereas the other (A.III.1) was decorated with animals and human figures and contained a number of statuettes of the goddess, alone or with leopards. The possibility that, as at Çatal Hüyük, the great goddess was worshipped as late as Hacılar II under different aspects should not be ignored, and as the painted pottery of Hacılar takes the place of

wall-painting and relief at Çatal Hüyük the character of the pottery found in each shrine may give an indication of which aspect of the goddess was worshipped. The south-west shrine, and its vessels with goddesses and animals, suggests the old hunting aspect, now transferred to domestication, while its geometric and flower-like ornaments may indicate the essential neolithic occupations of weaving and plant husbandry. It may not be a coincidence that only in this latter shrine were found a group of burials of women with children. Moreover, the water supply and the domestic enclosures, whose main function was the production of food, are arranged around this shrine, although the granary was placed near to the other. I do not believe that all these features are sheer coincidence; on the contrary, a deliberate pattern of associations, abundantly attested at the earlier site of Çatal Hüyük, still seems to have been operative in the layout of the settlement.

HACILAR IIB

The diminished prosperity of the Hacilar IIB settlement has been outlined above, but the quality of the pottery remains unimpaired. The denudation of the single south-west shrine has resulted in few finds of pottery; but what has remained is of excellent quality, with one exception, a sloppily painted bowl with decoration on both interior and exterior, which is unique. The two main findspots of Hacılar IIB pottery are the north-west quarter, (N), and the two remaining potters' workshops and adjacent north court (area A). As the illustrations show, there is a marked difference between these two groups, with that of the workshops A.IIB.1,2, the north court (A.II) and house N.II.O forming one group in which the fantastic style predominates, as in the south-west shrine area, and the more geometric pottery from the rest of the north-west quarter on the other. The latter is on the whole not of the same high quality and the group of vessels from the eastern part of the settlement (area L, and P), as well as a few strays from area C outside the settlement, vary in quality. This lack of uniformity in Hacılar IIB is more noticeable than before, but it should not be exaggerated. It shows only too clearly that on the basis of style alone, Hacılar pottery can not be dated and that area excavation on sites of this period is necessary to obtain a balanced picture of the varieties of painted pottery that one single site might produce.

Hacılar I Fortress. Distribution of Painted Pottery

The pottery of Hacılar I found in the fortress of levels IA and IB derives with only a very few exceptions from the fallen upper storey. As it was therefore not found *in situ*, no pottery plan could be established. However, most of it fell into the basement rooms from the corresponding upper apartments and only in a number of cases was one fragment found in one room, the rest in another. Such cases could be established for the adjacent rooms 4 and 7, or in spaces 22/23. Other groups of pottery found in courtyards, gates, etc. (9, 8, 21, 23), could be either thrown-out fragments or material fallen from the upper storey, or more often both. It is evidently impossible to say where it originally came from. The division of the pottery into different rooms is

therefore sometimes a little tentative in such cases, but on the whole well established for all the main rooms.

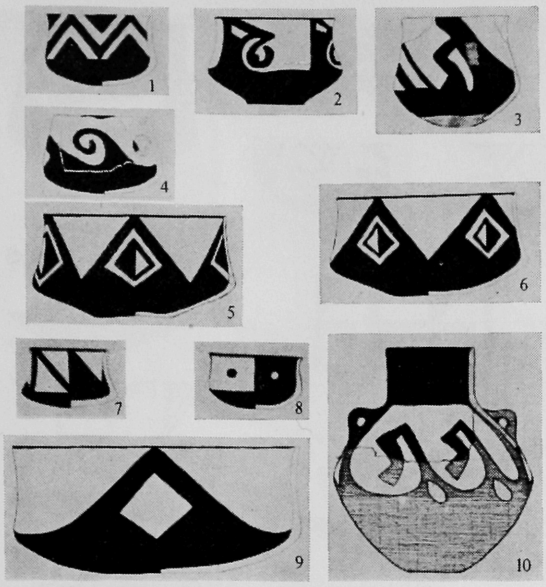
In the illustrations (see pp. 57–74) the pottery is arranged by rooms, to allow for comparisons to be made. The first thing to note is that block A (1–9, 12, the complex 10–16 was empty of pottery and all other finds) yielded far more pottery than block B (18–25), and most of that was fragmentary in the extreme. The reason for this is by no means clear, for there are no grounds for believing that there were potters workshops in block A. Modelling tools, querns for ochre grinding, deposits of clay, etc., are conspicuous by their absence in both areas and the pottery was probably produced elsewhere in the settlement. One can only assume that block A was better provided with pottery than block B at the time of the destruction at the end of phase IB.

No single room in the areas excavated can be regarded as having definitely served cult purposes and the shrines were probably located elsewhere. Fragments of effigy vases occur in rooms 1, 3, 6, 12 in block A and in court 17 and room 19 of block B, but there is no concentration of vessels of this type in any particular room. The rare white-painted pottery was also evenly distributed and so was the monochrome ware and the coarse potstands.

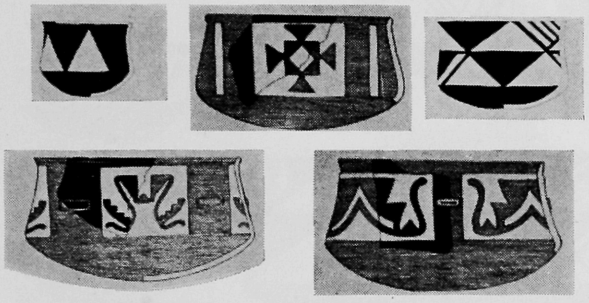
Richest in pottery deposits were rooms 2 and 5. Then came rooms 12, 6, 3 and 4/7. The large room 1 was less well provided. In block B the suite of rooms 18, 19 and 20 provide most of the pottery.

The distribution of these pottery deposits indicates the whereabouts of important rooms in the upper storey, and it is obvious that, for example, the richness of the ceramic equipment of the rooms above 12 and 3 bears little relation to the narrow basement chambers, which may have served as guardrooms. If all the pottery found in these two chambers were restored and placed on the floors there would not have been any room left to move. The pottery found in room 2 shows that many of the bowls had been stacked one on top of the other, in the room above, and the whole pile had slid down the doorway into room 1 at the time of the fire.

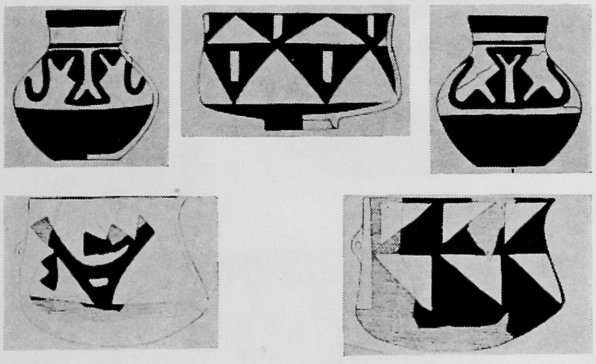
Even a cursory glance at the contents of each room will show the great variety of design used to decorate a fairly limited set of household vessels, beakers, bowls and jars. Room 1 contained a number of vessels with unusual decoration; whereas the contents of room 12 show a preference for strictly geometric ornament. Room 2 specialises in bowls with interior crosses, but rooms 5 and 6 show more variety in the decoration of bowls and room 5 has a fine set of geometric jars, whereas rooms 3 and 4/7 are more varied in their contents. Block B is poor in large bowls, but yielded a fine number of jars. The illustrations speak for themselves and eliminate the need for lengthy catalogues.



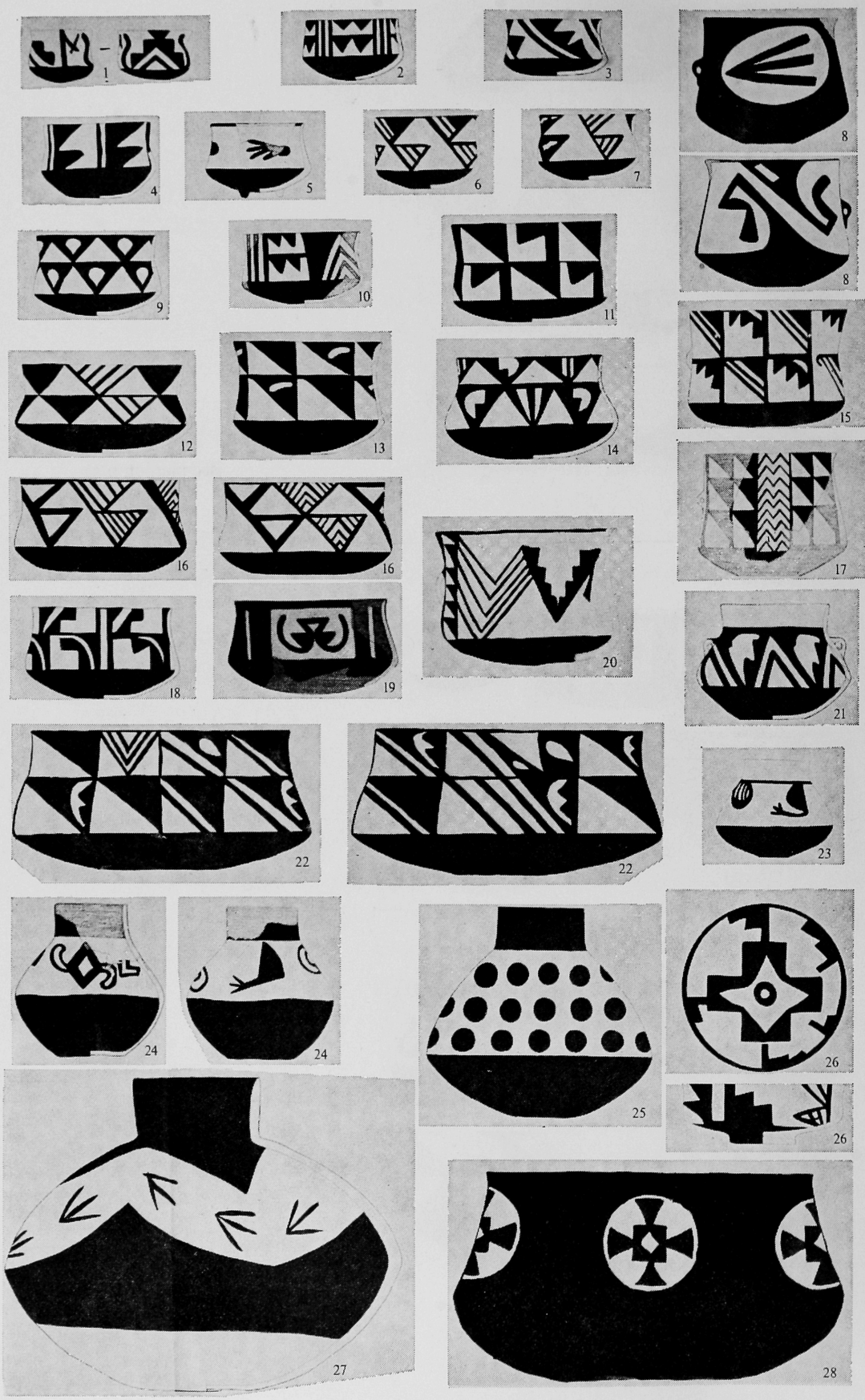
B.IIA
see plan on p.51



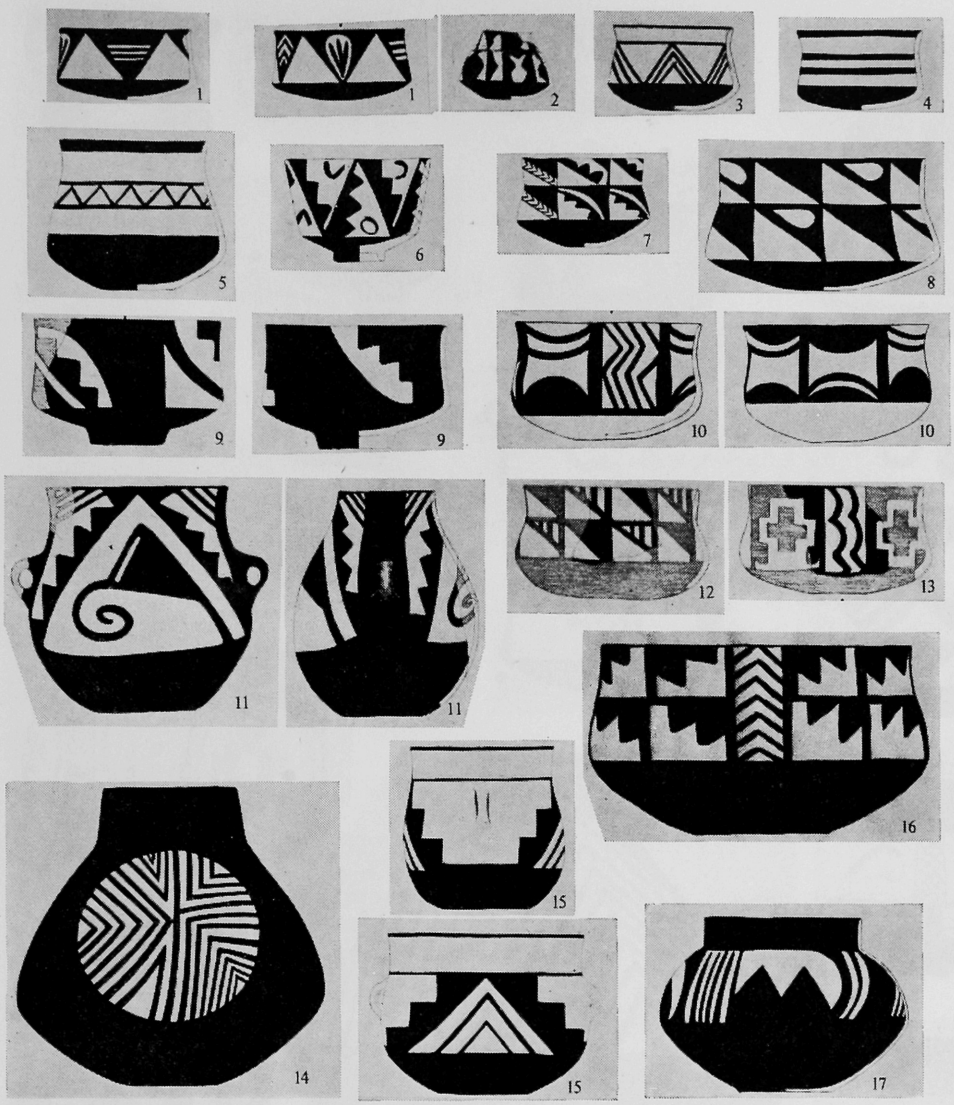
N.IIA



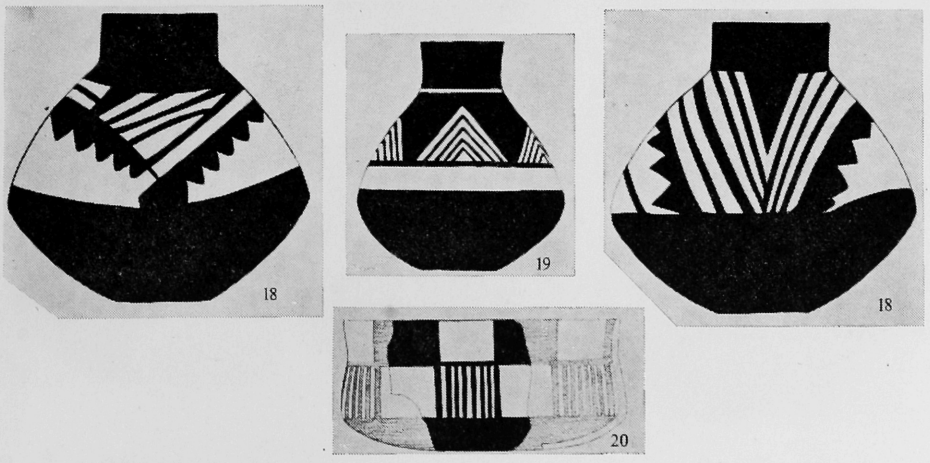
P.IIA



P.IIA. 1,3; see plan on p.52



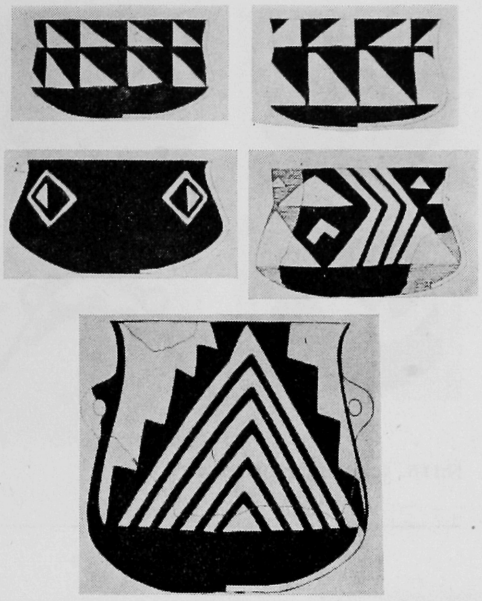
P.IIA. 2; see plan on p.52



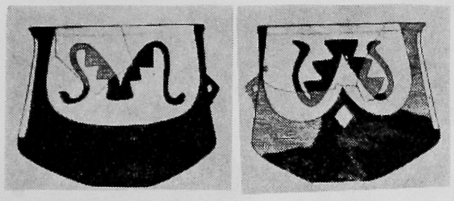
P.IIA. 2a; see plan on p.52

P.II A. 4; see plan on p.52

N.IIB. o; see plan on p.53

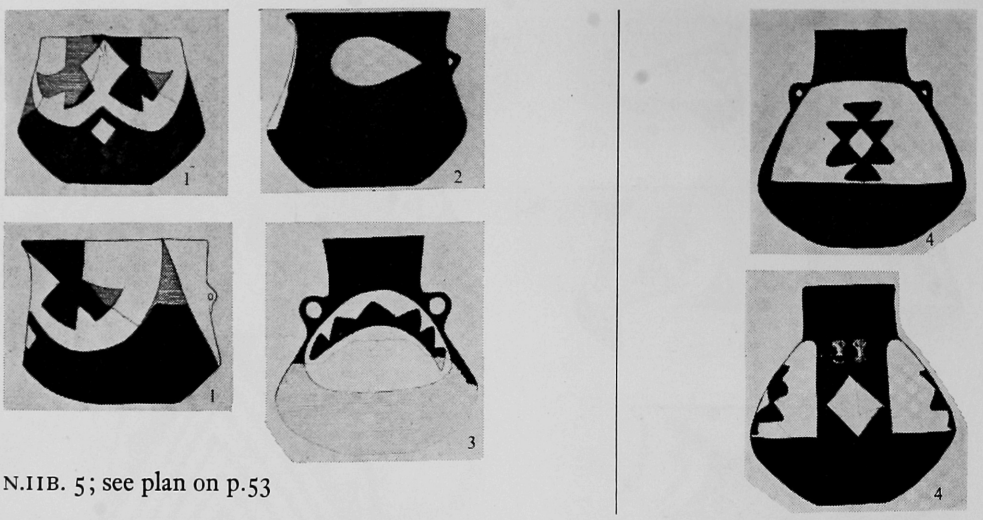


N.IIB. granary

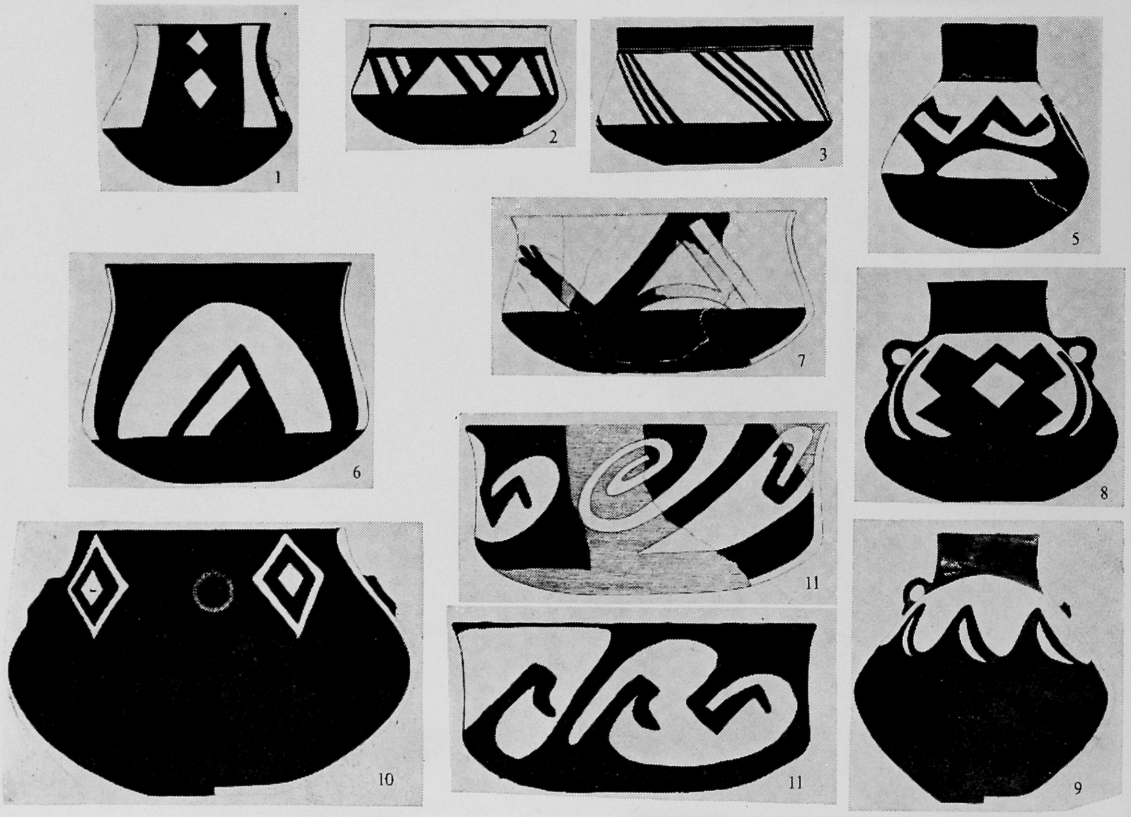


N.IIB. west court

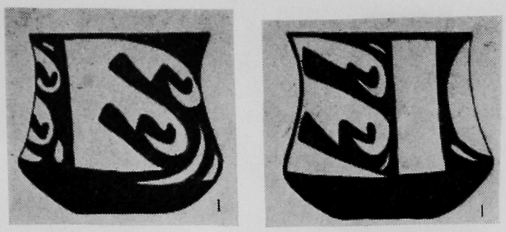
N.IIB. 1; see plan on p.53



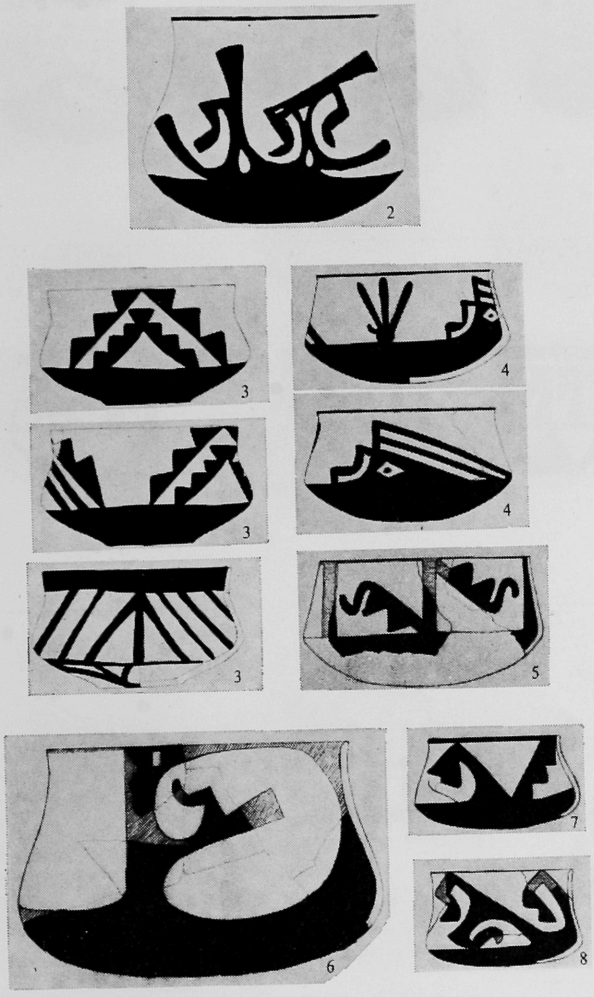
N.IIB. 5; see plan on p.53



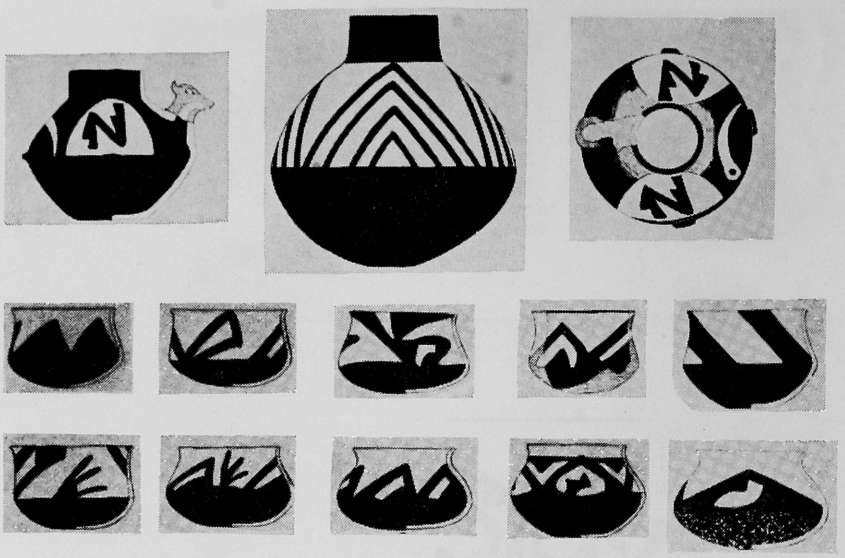
N.IIB. 4; see plan on p.53



R.IIB
see plan on p.54

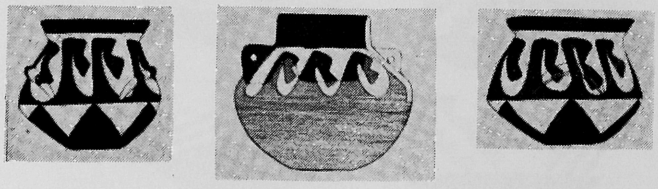


Q.IIB. 4, 7
see plan on p.54

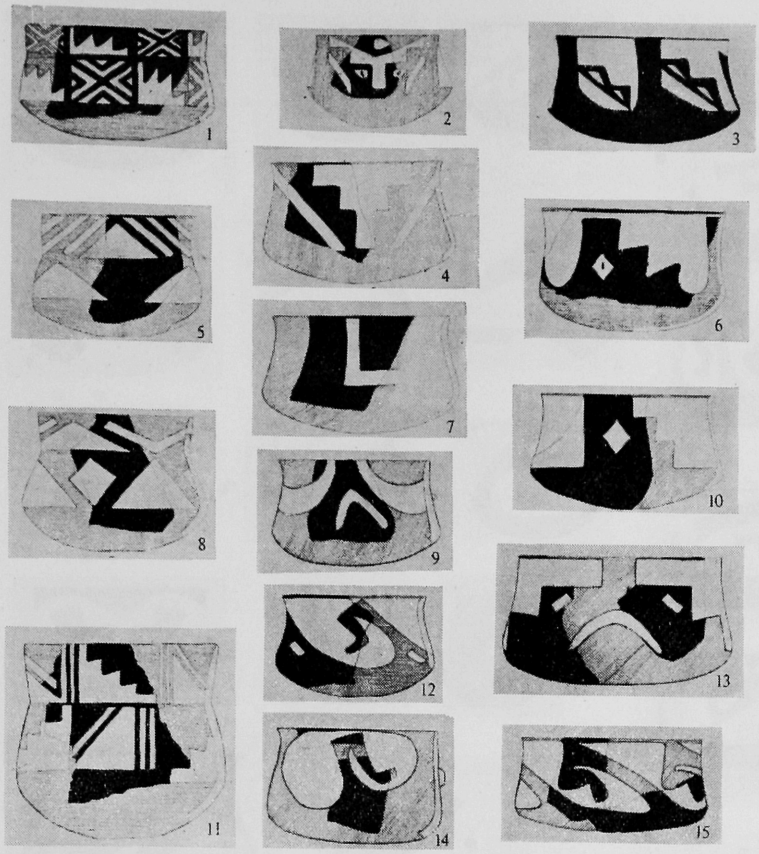


L.IIT

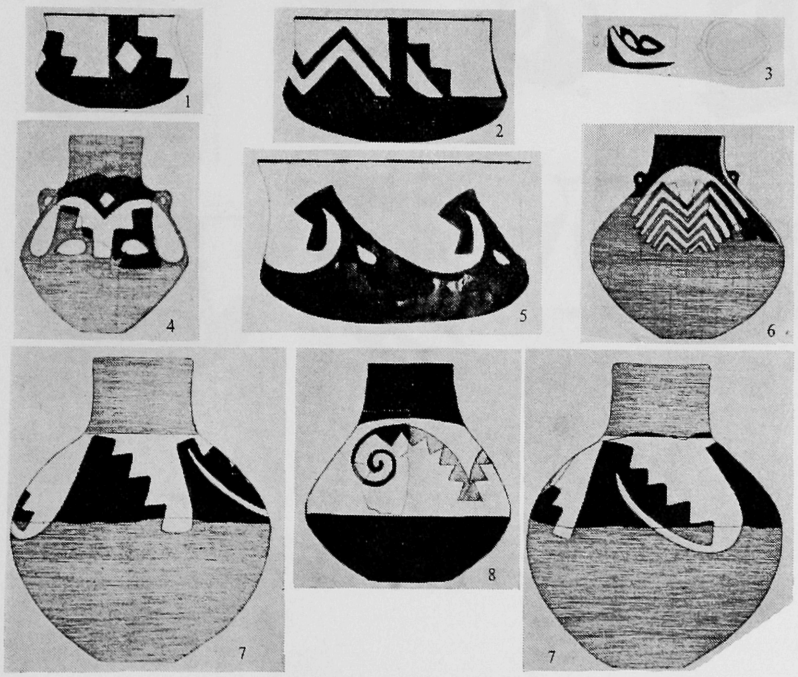
C.IIB?



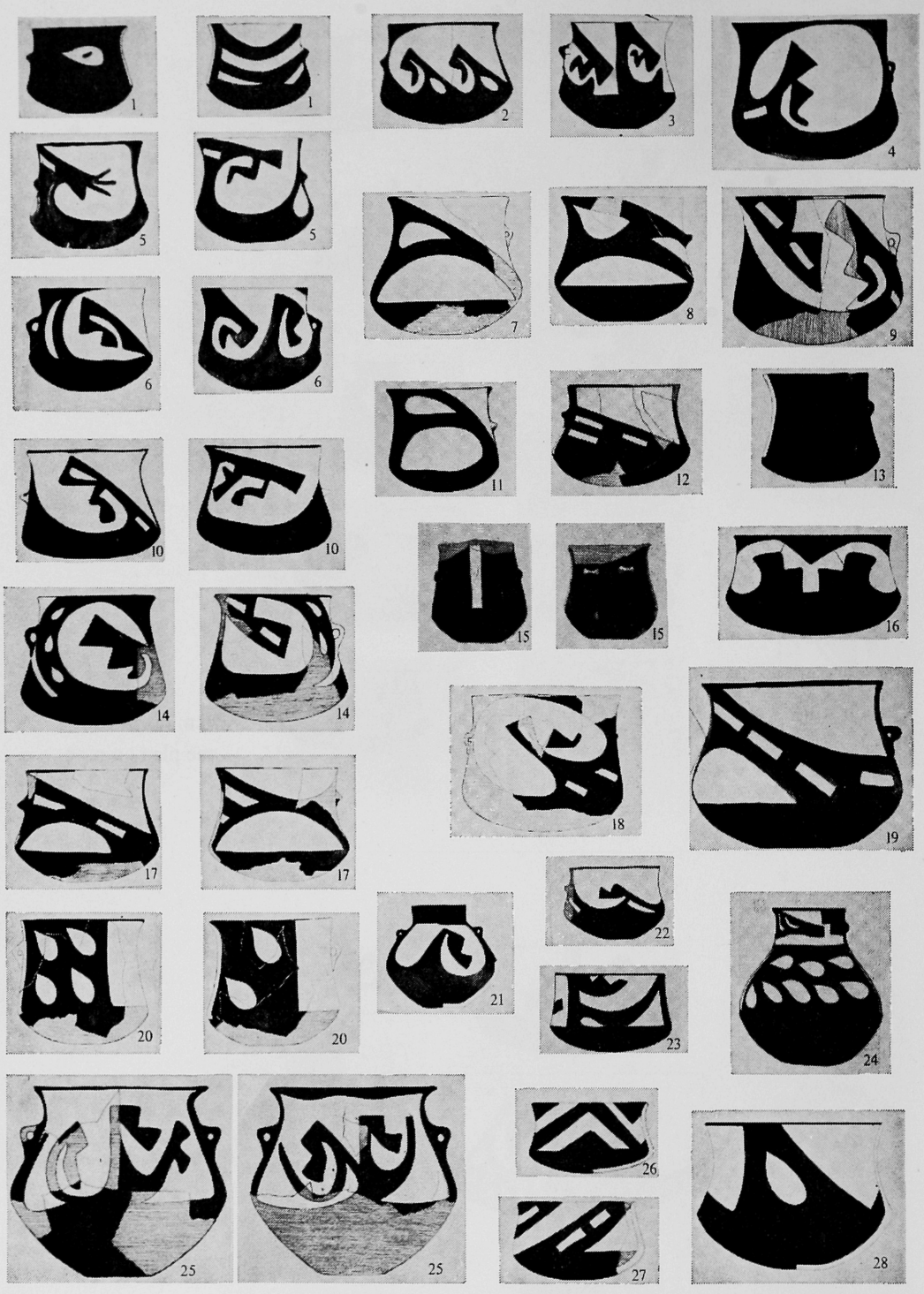
P.II



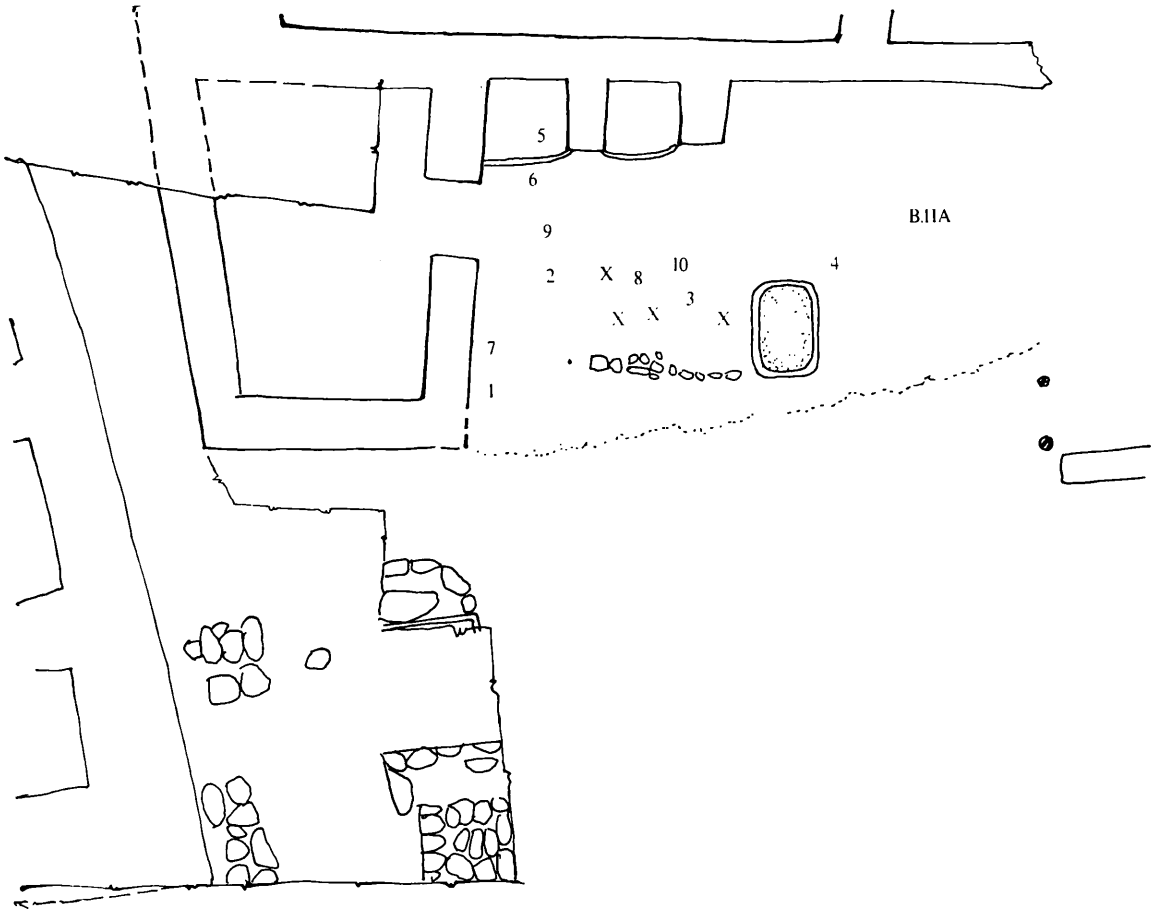
A.IIB. north court
see plan on p.55



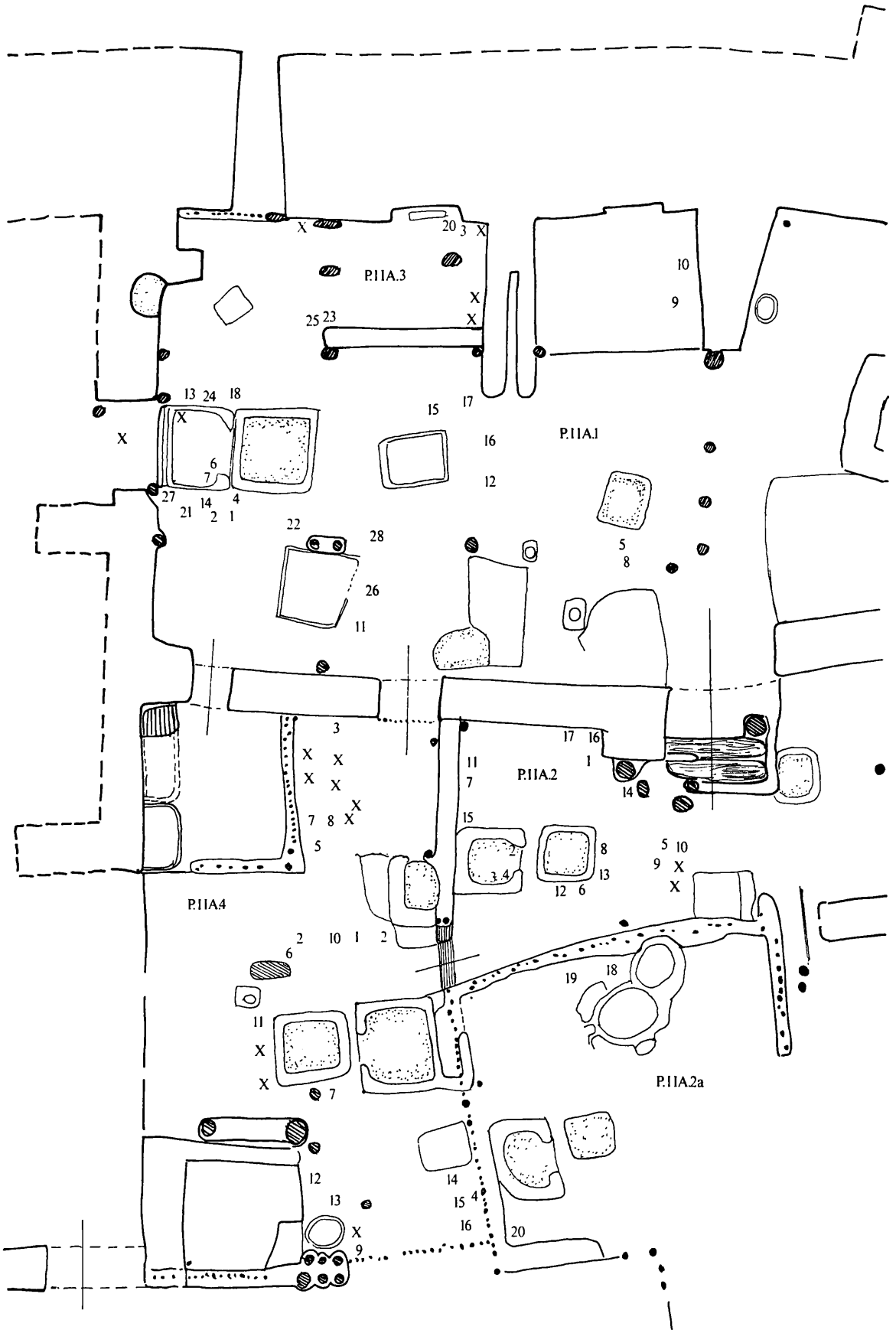
A.IIB. 1
see plan on p.55

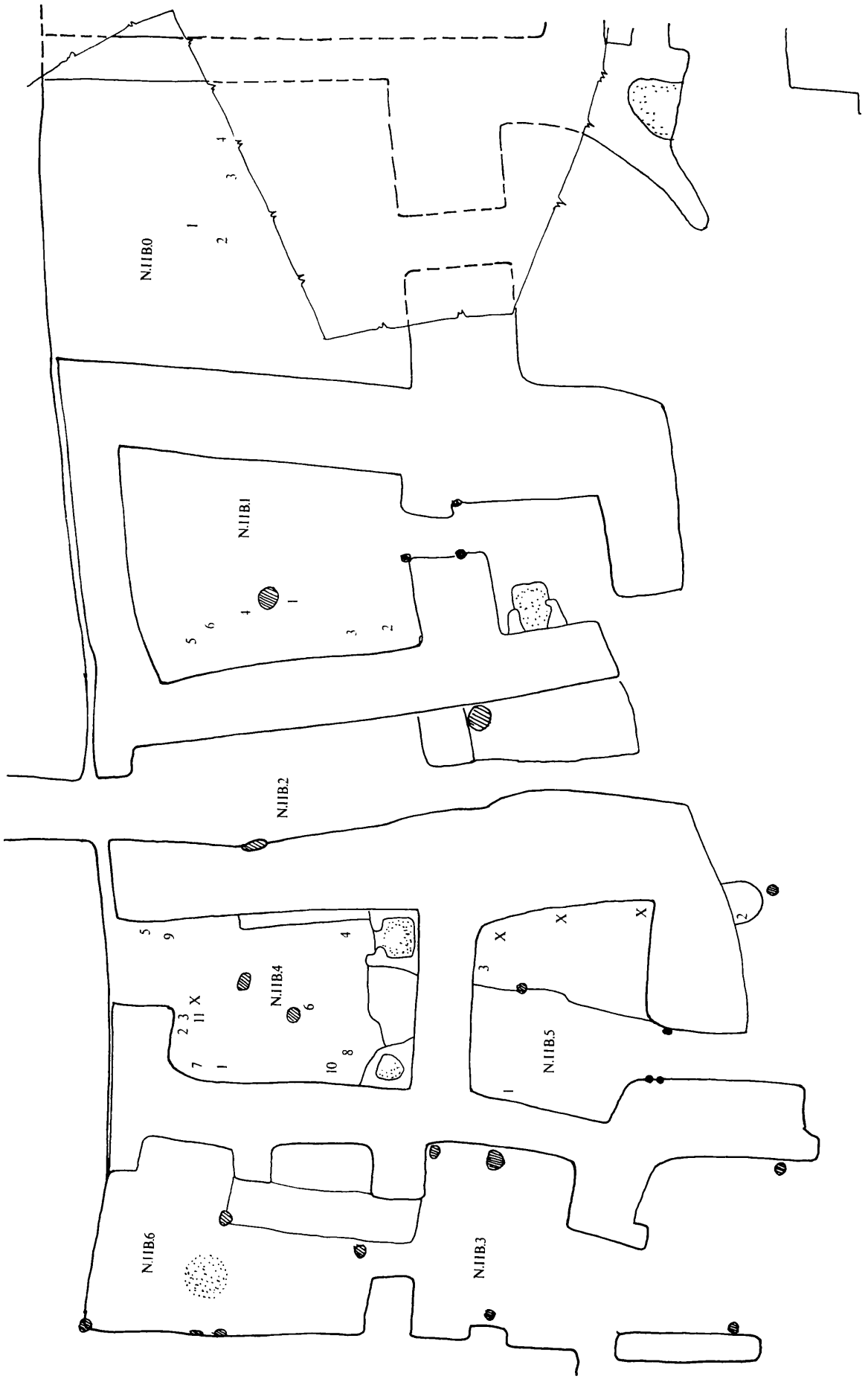


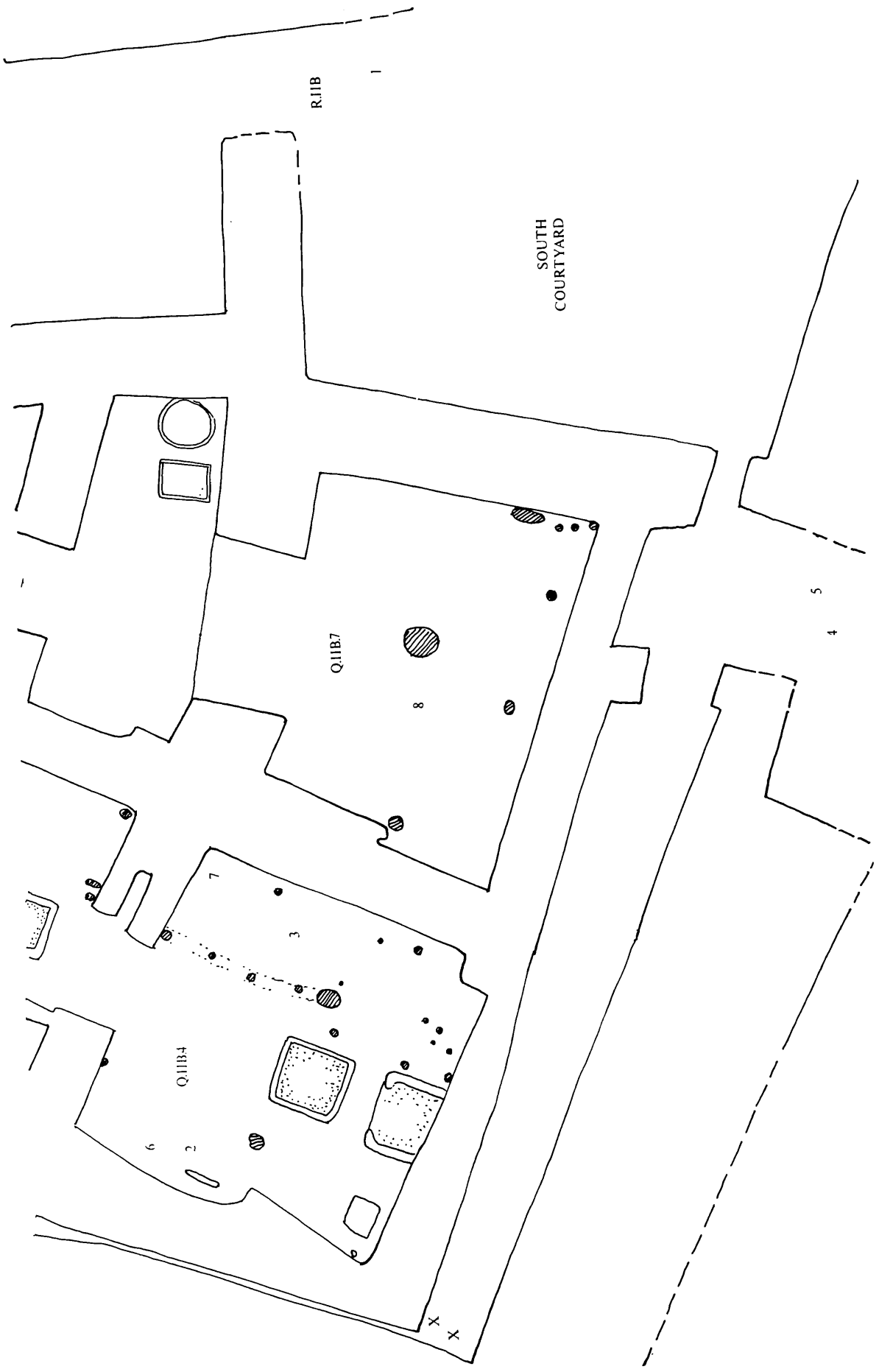
A.IIB. 2 and court B.IIB; see plan on p.56

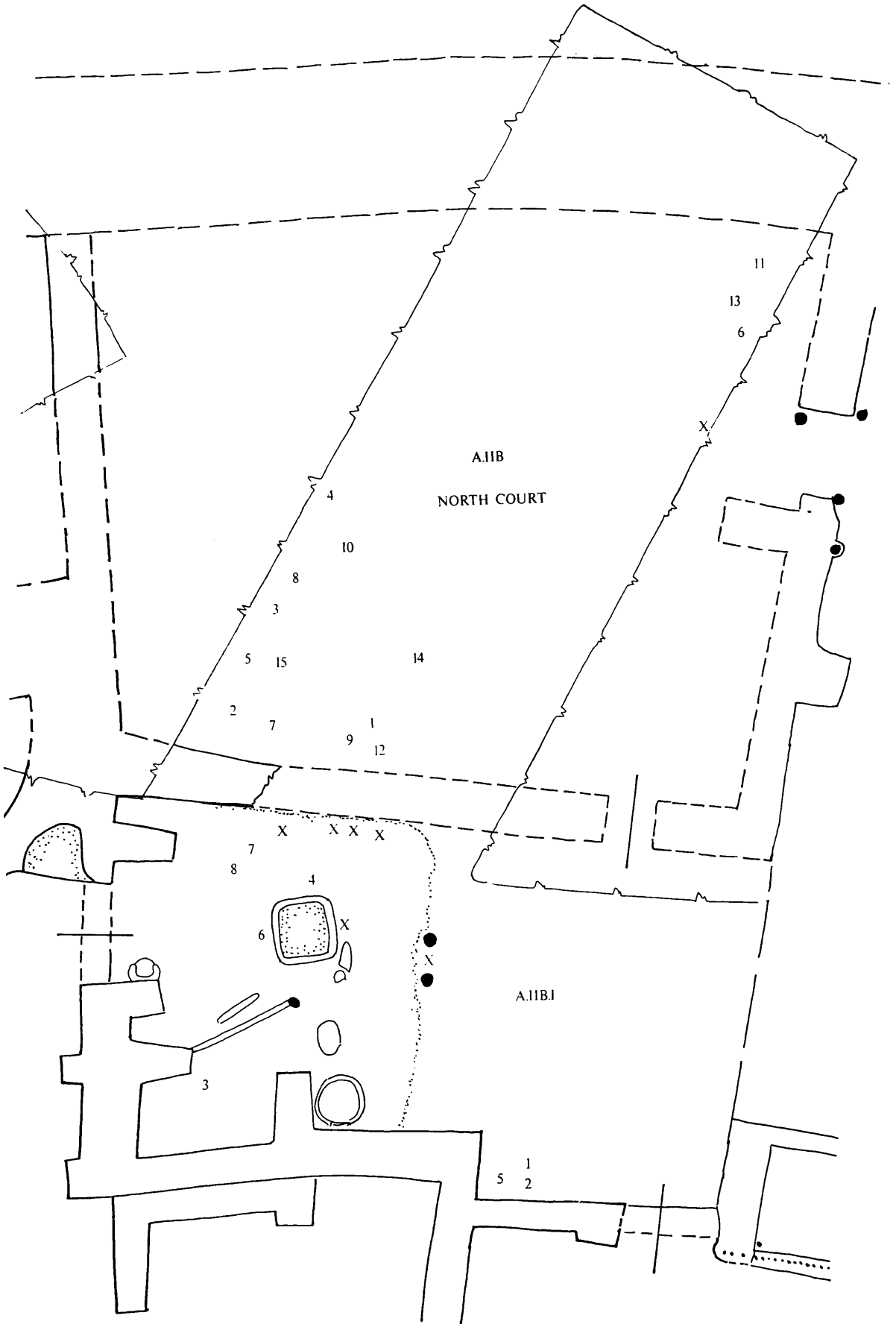


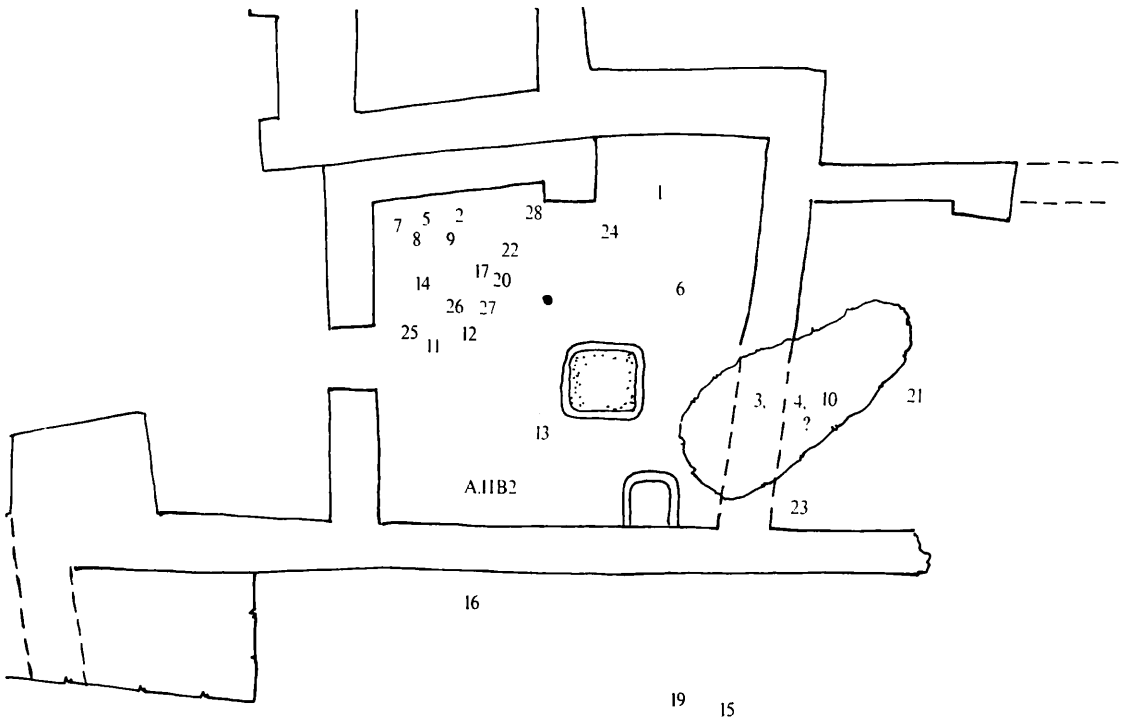
X = monochrome pots (not illustrated)


P.IIA.3
P.IIA.1
P.IIA.2
P.IIA.4
P.IIA.2a

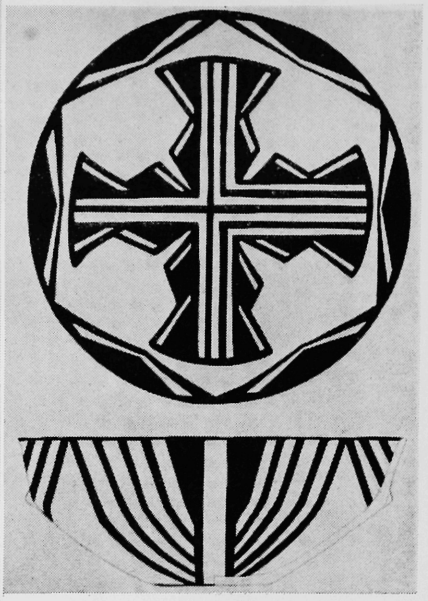

N.IIB0
N.IIB1
N.IIB2
N.IIB4
N.IIB5
N.IIB6
N.IIB3

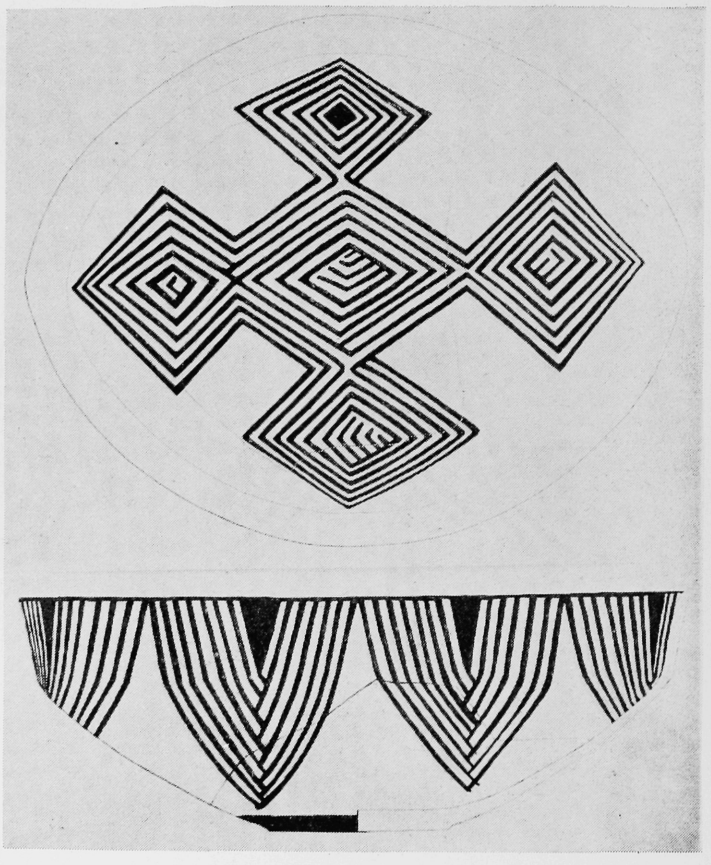

R.11B
SOUTH COURTYARD
Q.11B.7
Q.11B.4
1
2
3
4
5
6
7
8


A.IIB
NORTH COURT
A.IIB.I
11
13
6
X
4
10
8
3
5
15
14
2
7
1
9
12
X X X X
7
8
4
6
X
X
3
1
5
2

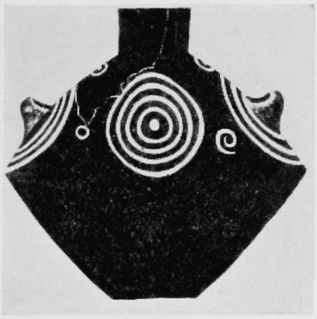

1
7
5
2
28
8
9
24
22
17
20
14
6
26
27
25
11
12
3,
4,
10
21
?
13
A.IIB2
23
16
19
15
B.IIB
18

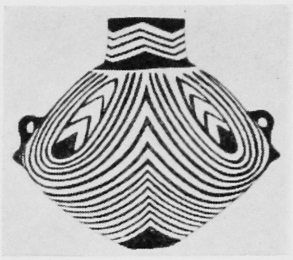
I.1

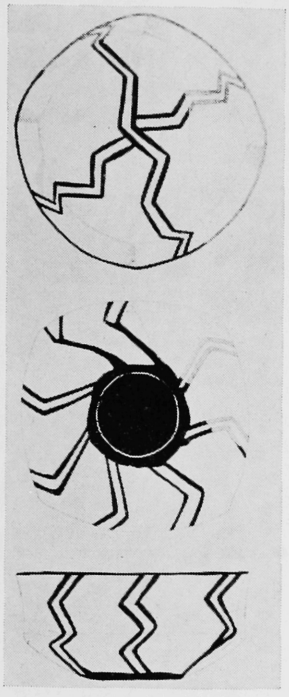


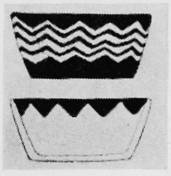


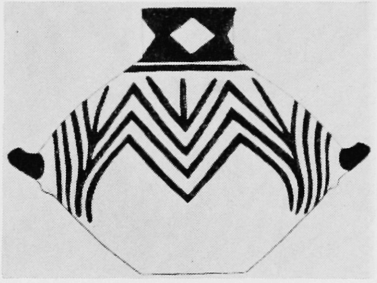
I.2

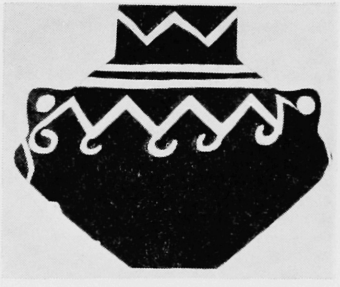


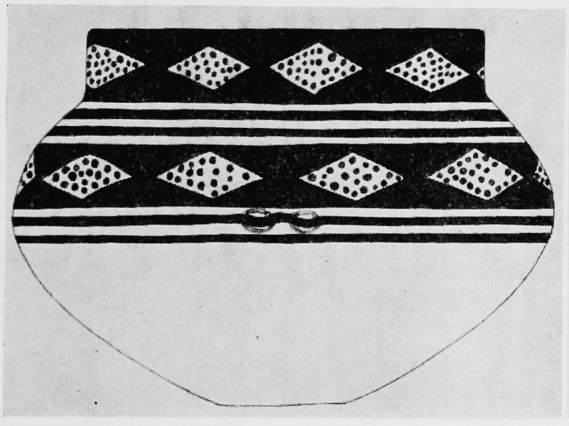


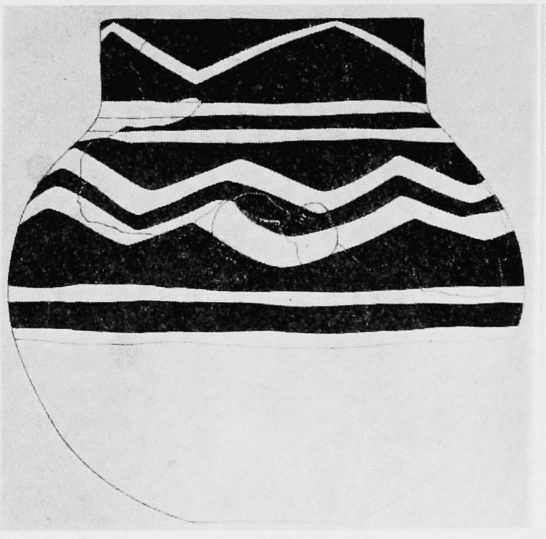


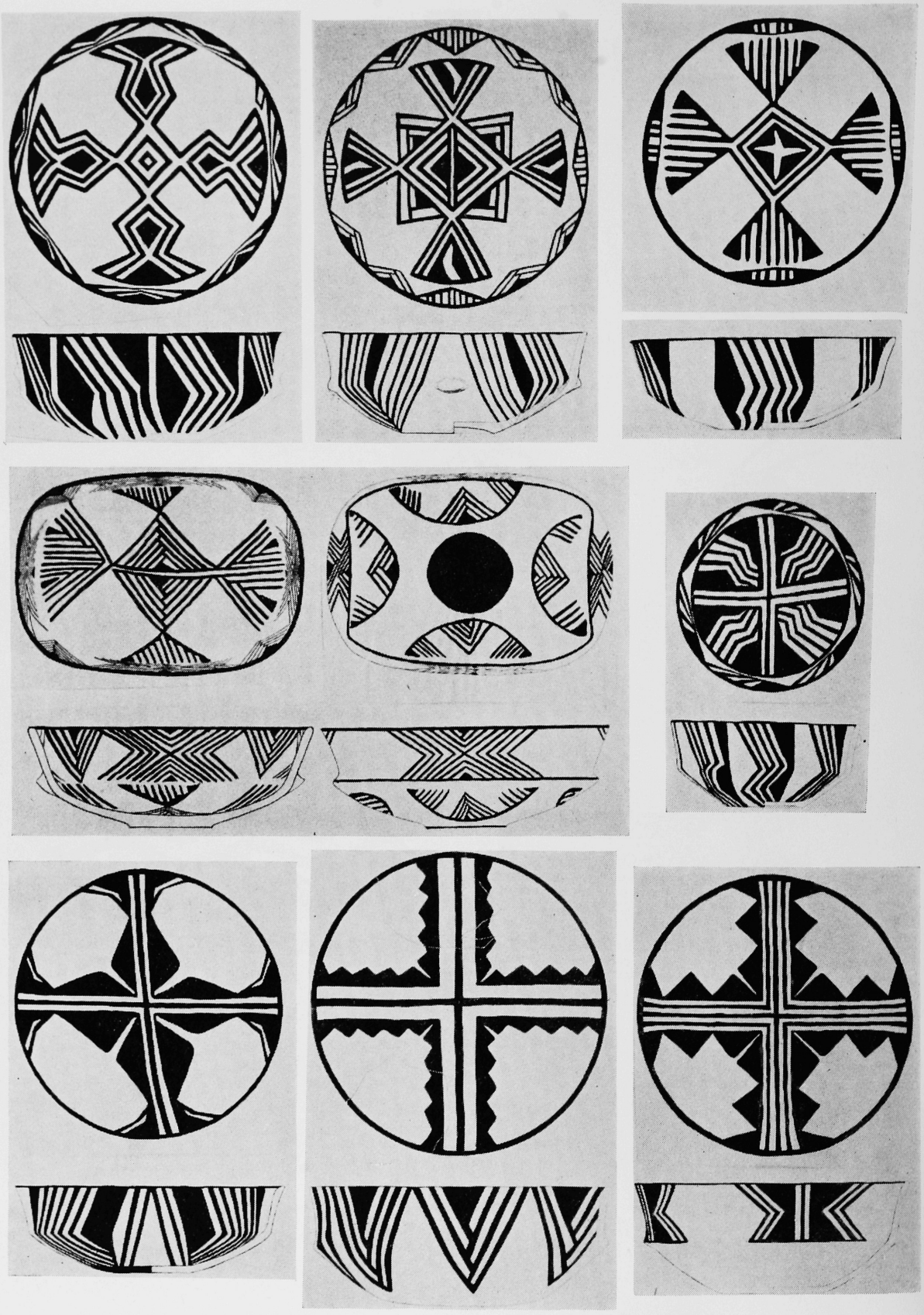












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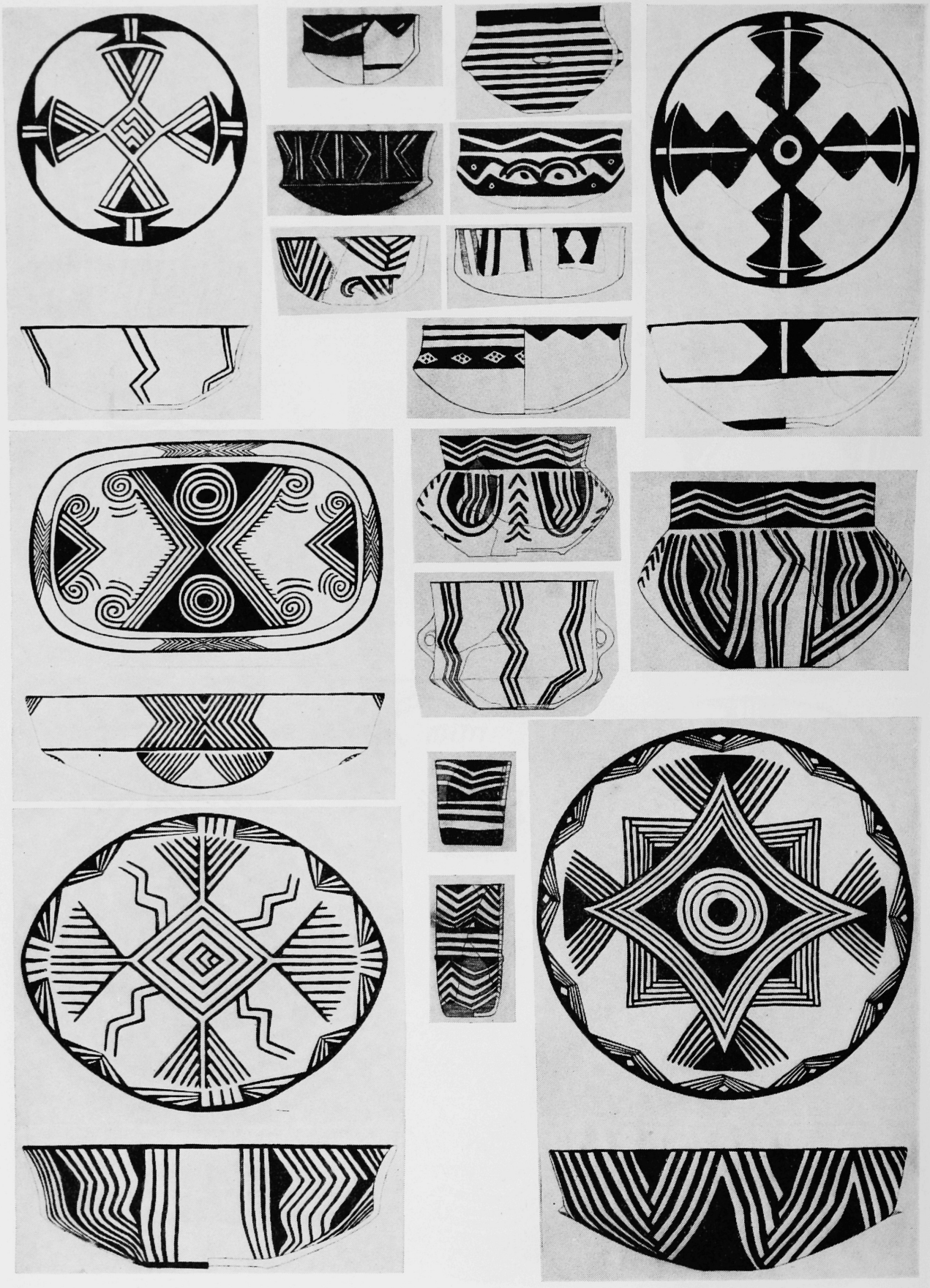

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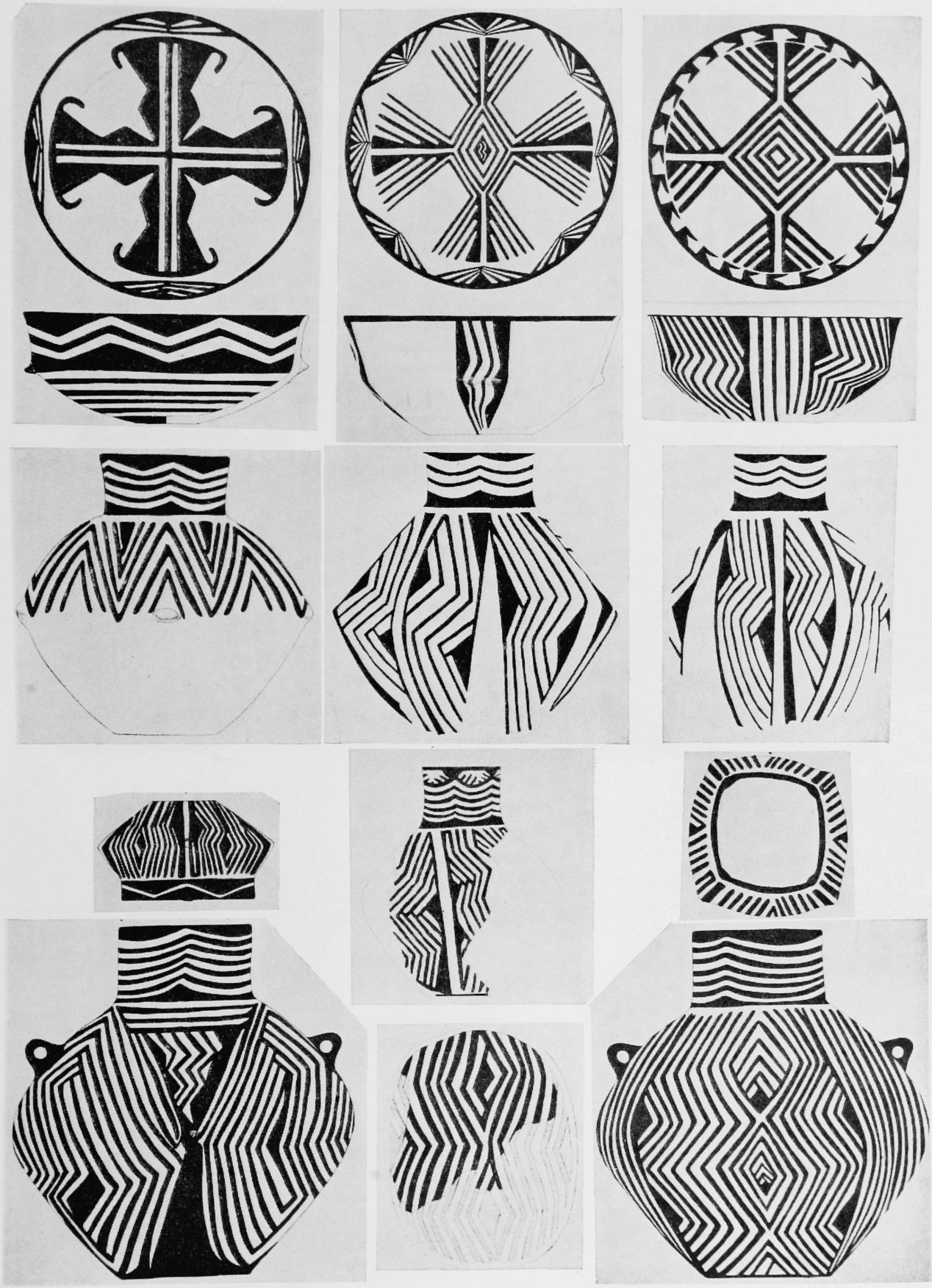

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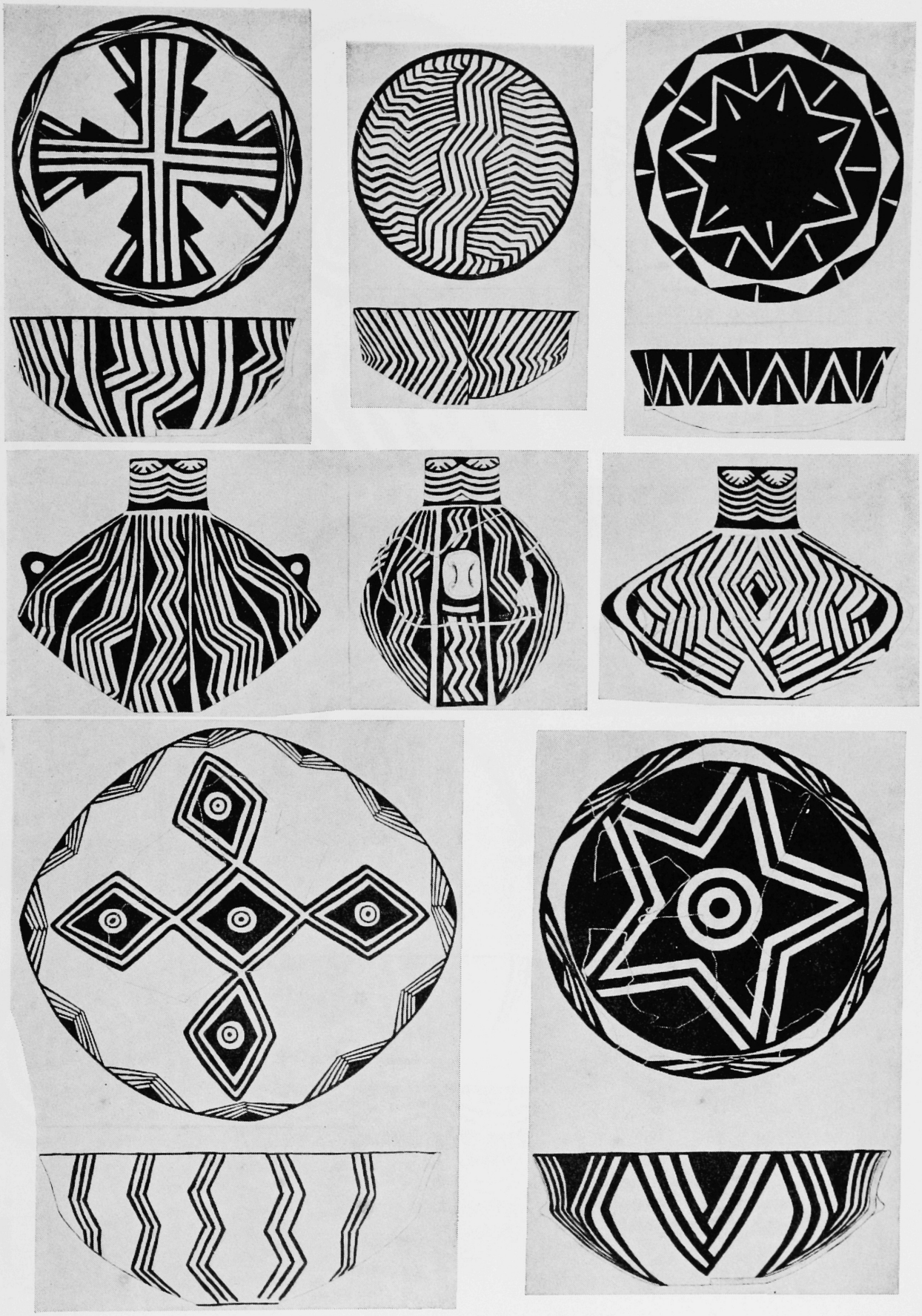

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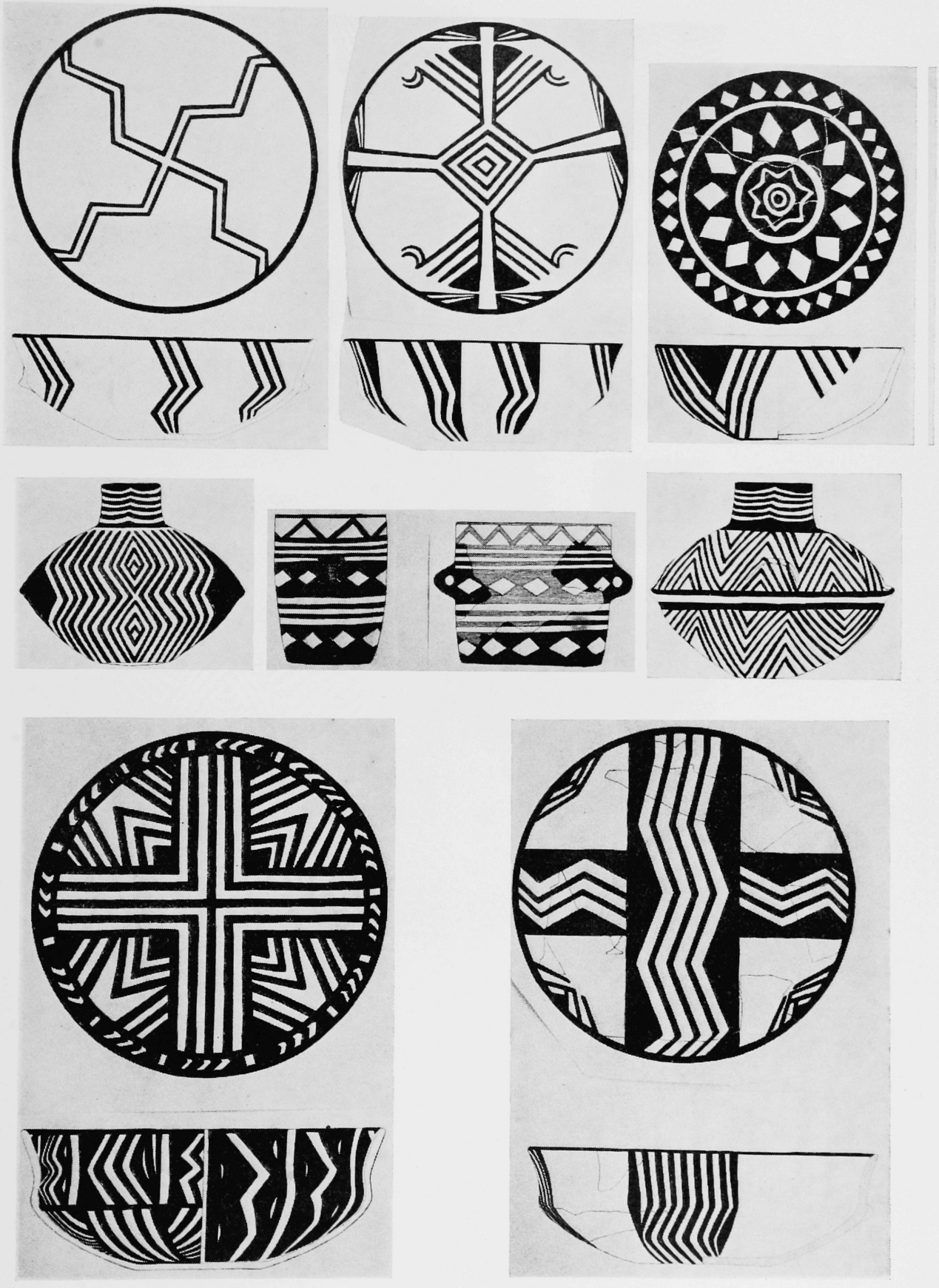

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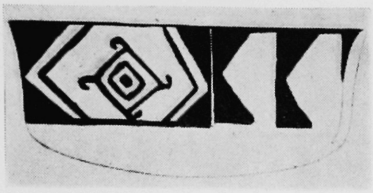

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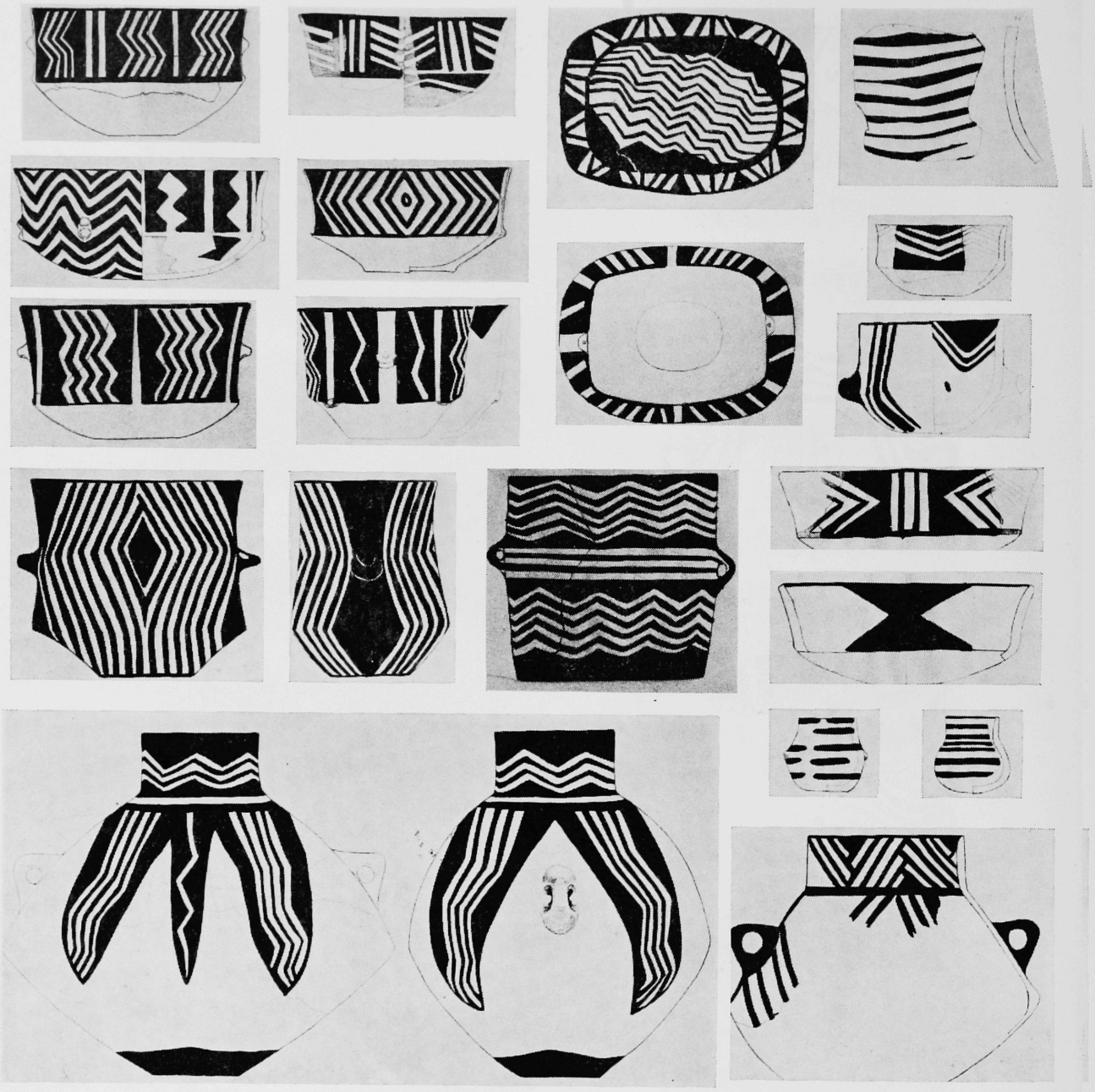

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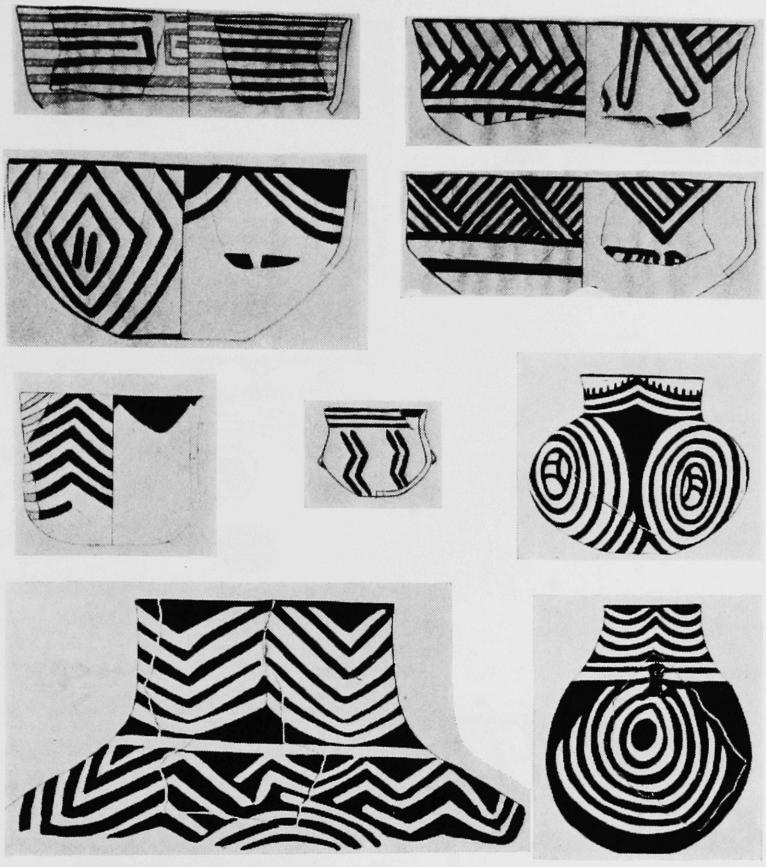

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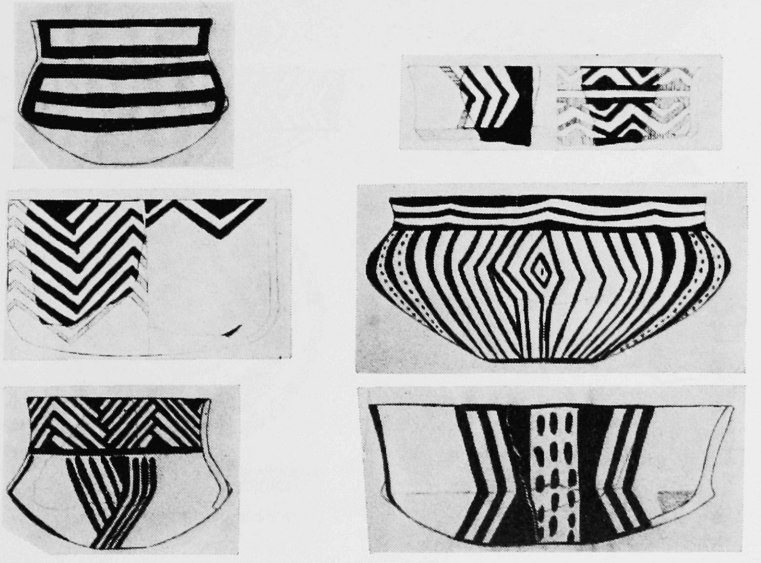

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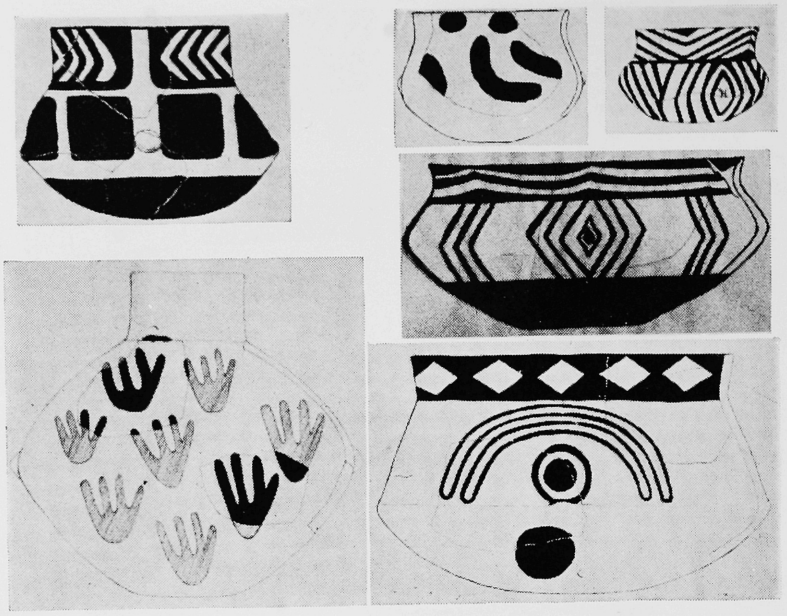

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The Fortress of Hacılar I

The destruction of the Hacılar IIB settlement marked the end of a period that had lasted at least five hundred years since the first late neolithic settlers had established themselves at Hacılar. Throughout that long period, from the simple beginnings in Hacılar IX and VIII to the end of the tiny village of Hacılar IIB, cultural development had been continuous, although occasionally interrupted by disastrous fires.

At this moment, which radiocarbon dates allow us to assign with some confidence to the beginning of the last quarter of the sixth millennium, or *c.* 5250 BC, there is a profound change in culture. Whether it was the enemy that destroyed Hacılar IIB or some others who took advantage of the event to settle at this attractive site, we simply do not know. What is clear, however, is that the people who built the Hacılar I fortress were not the survivors of the previous settlement, but newcomers, far more numerous than the earlier population. As there are certain signs of continuity apparent in the pottery and in the motifs with which the new wares were decorated we may perhaps assume that those who had survived the sack and burning of Hacılar IIB were assimilated by the new arrivals.

The new people were not content to build their houses on top of the burnt ruins; the area would certainly have been too small to accommodate their numbers and the burnt stumps of walls would not have furnished secure foundations for the sort of architecture they were used to, which was far more massive than any thing ever previously seen at Hacılar. Instead, they proceeded with massive levelling operations which were intended to provide a vast platform all round the ancient mound. In doing so they cut away at least the outer edges of the mound, probably on all sides, to a depth of nearly 2 m (pls. XXXIVb, La). Wherever encountered (fig. 28) this deep cut is very marked indeed and was disastrous for the archaeologist. On the eastern side of the mound the cross-section (figs. 38, 41) shows that all building-levels from II–V were bodily removed and only patches of level V, and in places level VI, remained. On this fairly level platform (see sections, fig. 32) the Hacılar I people proceeded to lay out the plan of their fortress. They did not cut foundation trenches for the solid walls of mudbrick they were to erect, but laid a single foundation course of limestone rubble on top of the prepared level ground (pl. XLVb). Where necessary, as against the abruptly cut face of the old mound west of room 5 (figs. 28–9), a thin retaining wall was built to prevent subsidence (pl. XLVb). The stone foundation course is found throughout the fortress and, once it had been laid, solid walls of mudbrick were laid on top. The long, narrow mudbricks, measuring 63 × 30 × 12 cm (pl. XLIVb), were sometimes bonded, but more often than not laid as stretchers (pl. XLVa). Bonding was not a necessity, for the walls were on average 2 m thick, and sometimes more. Floors were made of clay, and mudplaster covered the walls, both internally and externally, where exposed to the elements. On the floors rested a 10 cm-thick deposit of vegetable material, the remains of rushes or reed matting.

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91, 94
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82–85
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Hearths, either round or rectangular, were raised and provided with a well-defined kerb to prevent the spilling of the ashes. Platforms, plastered like the walls, either supported staircases or served as sleeping platforms. Postholes are frequent and every large room is provided with internal buttresses, rarely one, more often two, three or four. In smaller, narrow rooms, buttresses are placed in the corners and their function was to support the main roof beams and strengthen the structure. In one or two rooms there is evidence of the use of horizontal beams in the brickwork, but the wood was so thin that it cannot have served any structural purpose whatsoever and may be part of a protruding shelf (east wall of room 5) or an article of furniture fixed into the wall, such as a cupboard.

Characteristic of the fortress are the rarity of doorways – many rooms could only be entered from an upper floor. Such doorways as have been found are narrow
39 (pl. XLa) and were provided with wooden thresholds, which were plastered over. Pivot stones do not exist, so that the doors must have been fixed on to wooden doorposts. Steps are found in one doorway leading from room 1 to room 2.

Although the walls of certain rooms (for example, room 12) are preserved to a height of 2 m, no windows have survived; but, as it would have been impossible to live in these rooms not only without light but also without ventilation, we may safely assume that windows were set high up in the walls and just below the ceiling. There is no evidence for drains or toilet arrangements within the rooms, but there is plenty of ammonia-stained pottery from the courtyards, which would have served the needs of sanitation in shelters of sticks, reeds and matting.

There is abundant evidence for the existence of at least one upper storey, evidently the main one, as many of the rooms found could only have served as storage rooms, or basements. This upper storey was apparently constructed largely of light materials: a timber frame of pine and juniper filled in with brushwood and covered with mud and plaster. It was this upper storey which made the fortress highly inflammable and led to a terrible disaster at the end of Hacılar IB. During the conflagration the upper floor collapsed into the lower rooms forming a black greasy ashy deposit, often as much as 2 m thick, filled with pottery, objects, charred wood and the grisly remains of the burnt skeletons, especially children, who had been trapped in the burning furnace. The fire was such that skulls had become calcined and even the teeth were burnt green and blue. The fattiness of the deposit is hard to explain unless much oil, animal fat, skins or textiles had been kept in these upper rooms. Unfortunately no fragments of such materials were recognisable, nor was any carbonised grain found in the building.

The fortress had been in use for a considerable length of time, perhaps a hundred and fifty years, when its destruction took place. Certain repairs and alterations were made in phase IB in black bricks set in green mortar, measuring $56 \times 18 \times 7$ cm – smaller than those of the original construction of the fortress and easy to recognise because of their distinctive colouring. The alterations were fairly simple: buttresses were strengthened or enlarged, walls doubled, porticos enclosed, and higher floor
90 levels were laid (fig. 37).

PLAN OF THE FORTRESS. Figures 29, 30 84–86 and overleaf

The extremely massive walls, which in places attain a width of 4 m, the extensive levelling operations conducted with such precision that over a length of 70 m the variation is a mere 15 cm, and the intricate layout of the buildings erected by the Hacılar I people, show conclusively that this was not a village of individual houses sheltering behind a defensive wall, but probably a fortress of a ruler who had command of considerable human resources.

As no excavations were carried out beyond the walls of the fortress it is still impossible to say whether this complex stood by itself, as we believe, or formed the citadel and nucleus of a more extensive township.

It is evident that the Hacılar I fortress surrounded the entire mound, which had been reshaped by the levelling operations and by the cutting into a great central courtyard, about 100 m in diameter. This central court was apparently devoid of buildings and could have been used for sheltering animals and peasants from the surrounding countryside in case of danger. Surrounding the central open area on all sides were blocks of rooms grouped into complexes which were separated by smaller courts closed to the outside by solid defensive walls. Entry into the settlement was gained through these courts.

Only certain sections of the fortress could be excavated (fig. 35): two blocks of rooms (block A and block B) on the south-east side of the mound, and an entrance passage between block A and a series of rooms along the south side of the mound, which were not explored and would seem to be very denuded. On the west side of the mound, the level I cutting, a gravelled courtyard, and parts of rooms, were found in trench N, but again the buildings here were in a bad state of preservation. A number of robbers' trenches south of trench N were summarily investigated prior to dumping, and by co-ordinating the plans it would seem that here also there was a double row of rooms. In the northern part of the settlement, trench H failed to locate the circuit of Hacılar I rooms, which must have run further out to the north east. Area H must have been part of the central court. The northern circuit was nowhere investigated, but as the fields here are full of Hacılar I pottery its existence is not in doubt. 89

THE SOUTH-EAST ENTRANCE

The only excavated entrance is exceedingly simple (fig. 29, pl. XLI). It consists of a triangular area where two tracts of buildings, block A to the south-east and the unexcavated south block meet. At the outer end a wall projects from the south block to narrow the entrance to a passage 2 m wide, which could easily be blocked in case of danger. There is no provision for doors. A similar constriction was built at the inner end of the entrance and a pile of stones placed against the corner of room I and the room opposite prevented cattle or pack animals from damaging the brick walls. 84–85, 40 and overleaf

THE EAST ENTRANCE

Between block A in the south east and block B along the east side of the fortress lay a wide courtyard (nos. 17 and 23 on fig. 29). Although lack of time prevented a 84–85

29. Hacılar IA–B fortress. Plan.


TRENCH O
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2.18
3.00
2.84
2.19
2.33
2.21
3.09
2.10
3.19
2.00
2.40
2.39
2.47
2.99
2.35
13
7.38

complete excavation, it would be reasonable to suggest that there was another en-
86 trance here, as indicated in the isometric drawing (fig. 30). Whether there was an entrance or not, access to the courtyard was gained from the central court (8) through passage 15, involving an L-shaped turn north into courts 17 and 23.

INTERNAL ACCESS TO BLOCKS A AND B

The three main rooms of block A (rooms 6, 5 and 1) are not provided with doors to the outside, and as they were built up against the early mound, with a separate
42 retaining wall behind rooms 1 and 5 (pl. XLIIIa), they must have been entered from above. The upper storey over these main rooms would be roughly level with, or only a little raised above, the level of the old mound, and access may have been gained directly from the inner courtyard.

39 Of the next range of rooms, room 2 was entered from room 1 (pl. XL) and room 3
42 communicated with room 12 (pl. XLIIIb), which may have been a guardroom. Rooms 4 and 11, however, which are at a higher level than the rooms adjacent on
43 the south side, communicated through an open porch (no. 7, pl. XLIVa) with court-yard 8. In the Hacılar IB phase this portico was turned into a room by the construc-
45 tion of a wall. Rooms 10, 14 and 16, corridor or storerooms (pl. XLVIa, foreground), have minimal visible access and may have been entered from above. The narrow passage (no. 13) accessible from corridor 15 is likely to have contained a flight of steps, and it is possible that the space above passage no. 10 on the upper floor contained a similar flight of steps leading to the roof. Unlike the rooms (1–7, 11 and 12) this group of passage and storage chambers (10, 13–16,) was found empty.

45–48 Block B (pl. XLVIb–XLIXa) was only partly excavated. Room 18 is an addition of phase IB, and originally the south front of the block consisted of two large rooms,
46,47 nos. 19 and 25, with a narrow passage (no. 22, pls. XLVIIb, XLVIIIb) open to court 23, in between. The passage was unplastered, empty, and as it leads nowhere it is likely to have contained a wooden staircase leading to the upper floor from which access was obtained to the rooms on either side. Beyond these there are two further rooms, no. 24, partly excavated and accessible from above, and room 20, which,
47 measuring $5{\cdot}5 \times 8{\cdot}5$ m, is the largest excavated room in the fortress (pl. XLVIIIa). This room can be entered from courtyard 21. Further north, the south-west corner of another narrow passage was found and our reconstruction shows how it is thought the building continued. It is possible that beyond this section there lay a further court before the next block of buildings was reached, for, from the extant plan, three rooms in a row appear to have formed the length of a unit, followed by a set-back in the internal façade of the fortress: rooms 1, 5, 6 followed by set-back court 8; rooms 18, 19, 20 followed by set-back court 21.

The scanty evidence from trench N and the pits on the west side of the mound
89 suggest a similar layout (fig. 35). The corner of a set-back court fell just inside trench N together with evidence for a double row of rooms with internal buttresses. The complementary pit plans indicate two rooms along the inner side of the fortress, followed at the southern end by a further set-back and probably another room, an arrangement closely similar to that of rooms 6, 5 and 1 in block A. It is not unlikely

that there was another entrance into the settlement at this point, corresponding to the south-west gate in the fortified enclosure of Hacılar II. As in block B, the northern continuation of the west circuit along the courtyard in N may have contained a passage between the courtyard wall and a row of rooms. There must have been a way to reach the upper floor, and the level I cutting of the old mound seems to have left a gap between the mound and the two inner rooms, so that they could not have been entered directly through the upper storey (unless of course the gap had been filled in). A conjectural reconstruction of this western section indicates only the minimum requirements of defence and comfort, and it is possible that this block was as complicated as block A, with guard room, staircase passages, and the like (fig. 35). 89

We have no indications at all of the appearance of the south circuit of the fortress between the excavated south-east entrance passage (no. 9) and the postulated south-west passage. One would expect at least a double row of rooms as in the eastern and western sections, the inner row directly accessible at upper floor level from the steeply rising mound behind. There may well have been another guardroom to watch the south-west entrance.

TRENCHES C AND H. Figure 35 89

We must now consider the evidence from the one sounding in the northern half of the mound. In 1957 we opened up a small area (C) to investigate how far Hacılar II extended northward. The area was much disturbed by robbers' trenches and we found fragments of the stone foundation of a Hacılar I wall which gave the corner of a room. The walls were neat and quite similar to those of the fortress found the year after, and it seems extremely likely that, like the other stone wall found in area P, they predate the re-occupation of Hacılar IC–ID. Area C lay directly on top of a clay bin and part of a kitchen floor, burnt and containing pottery characteristic of Hacılar III. In 1958 we dug immediately east of trench C to investigate the possibility of tracing the northern circuit of the Hacılar I fortress. The new trench (H on fig. 35) was singularly unproductive. Hacılar I pottery occurred in quantity in 89 association with the denuded remains of heavy stone walls of typical Hacılar IA type. The walls could be seen extending beyond the line of the trench but no traces of mudbrick superstructure were preserved. The rubble foundations were laid directly on a levelled surface and were only one course thick, but there were no traces of burning. The most puzzling feature was the difference in soil at trench C to the soil at the western end of trench H, a few yards away, for associated with the stone wall was an abrupt break in the form of a deep foundation trench. This we can now easily recognise as the line of the level I cutting on the east side of the mound, but at the time we could not know this. On removing the stone foundations we ran into a deep black rubbish deposit, which, as several robbers' pits showed, extends over a fair area of the northern part of the site. The few sherds found seem to be earlier than Hacılar II and could well belong to the Hacılar III settlement, which extended in this direction.

The significance of the wide stone foundations escaped us at the time; their preservation was bad and associated finds were poor. We therefore filled in the trench H

and concentrated on the south-western area. In compiling the various odds and ends of plan for the final publication it all at once became obvious that they make an important contribution. Just as area N and the miserable pits provided evidence for the western circuit, trench H shows, with the level I cut, the inner edge of the north-east sector of the Hacılar I fortress and hence the northern limit of the east end of the central court. More important still, the few walls found in trench H seem to reduplicate the pattern of block A in reverse: a large room, equivalent to room 6, built up against the old mound, and on its outer side a portico, the equivalent of room 7.

Is it possible that the plan of the Hacılar I fortress was roughly symmetrical at least in the general layout of its constituent blocks of rooms separated by courtyards and entrance passages? The plan of the fortified enclosure of Hacılar II seems to show such symmetry with two gates in the north wall and at least one in the south wall (the south-eastern section has disappeared, but may well have had a fourth gate). It is therefore not in the least unlikely that the fortress of Hacılar I should show similar features, for the tracks leading to this important site obviously had not changed. Gates are accommodated to existing roads or tracks, not vice versa, and of the four the north-western led to the lake of Yaraşlı and beyond, the north-eastern to the lake of Burdur and from there to the sea; whereas the south-eastern led to the spring, and the south-western to the plains of Tefenni.

89 In the *highly conjectural* reconstruction (fig. 35) we have assumed such symmetry as is suggested by rooms 6 and 7 and the building remains in area H. When the contours of the site are added it would appear that it is the Hacılar I fortress which formed the contours of the mound, and only in the west are the contours not filled; there may, however, have been a further row of rooms on that side. What the reconstruction further shows is the absence of any buildings within the central area, with one exception: some fragmentary walls, about 1 m thick in areas C and P, which would seem to belong to this phase. Their purpose however, remains unknown.

LACK OF EVIDENCE FOR SPECIALISED QUARTERS

Unlike its predecessor, the Hacılar I settlement has not yielded any information about the various occupations of its inhabitants. There were no recognisable cult rooms or shrines, no workshops, domestic quarters with numerous ovens or kitchens, no grainbins or granaries that could be recognised, and no trace of any wells. It seems strange that all those appurtenances of normal life should have been situated in the areas left unexcavated. Only two large ovens were found, both in courtyards built up against the north wall of court 17 and the east wall of court 21. Nothing remained of their superstructures which may have been flat-topped or domed.

The settlement was heavily fortified, but weapons are very rare indeed: one broken macehead of stone, and a few piles of river pebbles used as slingstones. The small finds from Hacılar I are described later and all we need say here is that the only material found in large quantities was painted pottery. There was no grain; animal bones are few and tools of all sorts or articles of jewellery are less common than one might have expected in a burnt settlement.

THE LIVING QUARTERS

Although a great number of rooms were basements, antechambers and corridors, a number of spacious rooms show signs of domestic occupation. There was pottery in all the rooms of block B, but only in the rooms of block A do we find evidence for hearths, postholes, platforms, etc., which shows that they were used for living in, at least during part of the year. In contrast to block B only one pot was found *in situ* (pl. Lb) in block A, in room 1. 49

There were hearths in rooms 1, 2, 3, 12, 5, 6 and 7, and the position of the hearth varies from the centre of the room (1, 2, 3 and 5), off-centre (6), to the corner (7 and 12). They are round or rectangular and are raised on the mudfloor. An ashhole is found near the hearths in rooms 5 and 2. Room 5 has a platform along the south wall and a great number of postholes that suggest wooden cupboards arranged along the walls. Room 2 has also two postholes, perhaps for a similar purpose. The L-shaped platform in room 1 seems to be the base for a flight of wooden steps leading to the upper storey. Rooms 5 and 6 must have had similar arrangements to reach the upper floor, but the position of the steps is open to choice. It is abundantly clear from the excavation record that when the destruction came it was the upper storey that saw the full activity of daily life. On modern analogy one might perhaps suggest that the lower storey was only inhabited during the winter; in summer the inhabitants preferred the space, sun and air of the lightly-constructed floor above, which, raised to a height of about 3 m above ground level, offered a distant view of the Lake of Burdur and the forested mountains all around the narrow plain.

THE UPPER STOREY. Figures 31, 33–4 86,88

It may be superfluous to emphasise that whereas the existence of an upper storey is beyond doubt, its plan is unknown and can only be restored on paper. Such reconstruction is necessarily subjective and reflects the excavator's ideas, as in the case of the conjectural reconstruction of the plan of the fortress. The latter could be checked by further excavations, but the reconstruction of an upper storey can only be attempted by the field archaeologist familiar with the site. It is therefore a piece of information that should not be withheld.

The basis for the restoration of an upper storey is, of course, the walls of the ground plan. The enormous mudbrick walls of the Hacılar I fortress could not have been baked red through if there had not been a highly inflammable superstructure, in our case a lightly built upper floor, mainly of wood. Some brick may have been used, but there cannot have been much, as the amount of fallen mudbrick shows. It follows that the walls of the upper floor were thin, 30–50 cm at most. Resting on walls frequently four metres thick the rooms above would have been considerably larger than those in the basement plan (fig. 31). Moreover, thin walls and large rooms 86 would need support to hold the heavy roof beams which in turn supported a heavy thick clay roof. The presence of columns is, therefore, a *sine qua non*. Their number and arrangement cannot be determined: on the basis of Hacılar VI, a single row in each room *may* have been sufficient, and I have provided the upper storey with a minimum number of columns. It is, however, quite possible that, as in modern

Anatolian villages, the upper storey of Hacılar I was a forest of columns. Flights of steps leading to the upper floor must have come into the upper rooms well set back from the walls, as they do now in peasant houses. One expects some elementary protection around the stair head to keep children from falling down and to prevent other mishaps.

The system of communication on this upper floor is hard to reconstruct and there is no limit to the number of possibilities. As far as possible I have tried to keep to the ground floor plan, but one of the most essential features would be the communications from one block of rooms to another. As shown, there is plenty of space for a parapet walk along the eastern (outer) side of courtyard 23 and along the outer edge of block A. Moreover, it would be perfectly possible to roof over the entrance passages so that there was free movement from one section of the circuit of the walls to another.

There remains the question of open verandahs, an integral part of Anatolian village architecture to this day. Room 18, looking on to courtyard 23, is an obvious case, room 6 another. One would expect such verandahs to open on to the courts rather than on to the exterior of the settlement; but this is one of the many things we do not know, nor are we ever likely to find out. I therefore kept the number of verandahs down to that of room 18, but they may have bordered the central court in a continuous row, as they do nowadays in south-west Anatolian villages, usually facing south.

It is of course quite unknown whether the roof level of the Hacılar I fortress presented one continuous flat roof or whether it was broken up into individual rooms, each with a flat roof separate from the rest and stepping up towards the highest part of the settlement. At neolithic Çatal Hüyük this had been the case mainly for reasons of lighting the rooms, but at Hacılar I it is by no means certain that such considerations were still in force. The point is worth mentioning, for it is evident that the great thicknesses of wall separating the rooms suggest that, as at neolithic Çatal Hüyük, this was the result of each room having its own walls, rather than sharing a wall with its neighbour. The absence of partition walls could easily lead to the solid masses of mudbrick seen in the Hacılar I plan, or in that of the roughly contemporary Can Hasan 2B.[1] This is one of the many questions to which the archaeologist has no answer. Yet in spite of the evidently well-thought out plan of Hacılar I, I should opt against the idea of a level flat roof covering the entire settlement, and I refrain, at least temporarily, from drawing a picture of what I think Hacılar I may have looked like in its prime.

Comparisons

The difference in construction, architectural layout, and size of rooms and settlement between Hacılar II and Hacılar I have been noted above. Without doorways the rooms of Hacılar I look different from Hacılar II houses, but in their plan and the arrangement of buttresses, hearths, etc., the differences are of little importance. Only the ovens are absent, but they may have been present in the upper floor plan. What

[1] *AS*, XIII (1963) fig. 1.

seems new is the change from the Hacılar II house with two (or even three) rooms to the large single-roomed houses of Hacılar I; but this may be deceptive, as only the basement plan was found. On the upper floor it is likely that there were units of several chambers. Alternatively the whole of block A may have been conceived as a multi-roomed building, the residence of the 'ruler' of Hacılar I.

The many buttressed rooms of block B may be compared with the approximately contemporary ones, excavated by David French at Can Hasan near Karaman, some 175 miles east of Hacılar as the crow flies. In Can Hasan 2B, the burnt settlement, we find a very similar plan,[1] with rooms entered from the roof, an upper storey and occasionally benches, platforms, hearths and postholes in the basements. There is yet no evidence for strong cultural contact between the Hacılar I and the Can Hasan 2B culture, but finds of sherds of the latter type now occur in the Beyşehir and Seydişehir region, west of the Konya Plain, and Hacılar I remains reach Baladiz at the eastern end of Lake Burdur. As long as the origin of either culture is unknown the possibility of contact somewhere in the Pisidian Lake District cannot be discarded.

Estimates of Hacilar I Population

In a previous section (p. 37) we estimated that the total population of Hacılar II at the height of its prosperity in phase IIA did not exceed 100 to 150 souls.

Although it is tempting to hazard a guess about the population of the Hacılar I fortress, one must bear in mind the following points: (*a*) the very incomplete excavation of the fortress; (*b*) the purely conjectural restoration; (*c*) the much larger rooms, suggesting more than an average family of five people per house; (*d*) the uncertainty of whether the function of the upper storey was further living space or whether it was used only seasonally. If we prefer the former, the number of rooms and its inhabitants must be doubled. The total number of living rooms in the settlement as we imagine it to have been would be about 57, and if there was a further range of 6 to 8 rooms along the west side of the mound the maximum number would be about 65 rooms in all on the ground floor. At an average family of five to a room we obtain a maximum of 325 souls; at an average of seven, a maximum of 465. Even this low estimate would give us a population between 300 and 500 people, that is thrice that of Hacılar IIA; but there was certainly enough living room in the fortress for twice that number!

If we allow the fortress a life span of a century and a half, or about five generations, the Hacılar IA–IB cemetery must contain a minimum of 1500 to 2500 skeletons, if not double that number. It is impossible to estimate the number of squatters in Hacılar IC–ID, but one may be certain that their numbers were drastically reduced and probably did not exceed the population of Hacılar IIB, which may have been well below a hundred. Even if the squatters occupied the site for another century (or three generations) their contribution to the Hacılar I cemetery would have been comparatively insignificant.

[1] *AS*, XIII (1963) 29 ff., fig. 1 and pl. 1.

90 **Hacılar IC and ID. Figure 36**

After the burning of the Hacılar IB fortress, perhaps *c.* 5100 BC, there must have been a sharp decline in population. The badly burnt ruins of the fortress offered no shelter to the survivors, and only in the northernmost rooms of block B, less affected by the fire, were a few traces found of re-occupation by squatters. Having levelled the old ruins, they built a number of thin walls of which only the stone foundations
48 remain (pl. XLIXb), partitioning the spacious rooms of the fortress into small hovels with uneven mud floors. Similar poverty-stricken buildings extended into the courtyard west of block B, in areas C and H, which are also probably part of the old central court, and especially in the western end of the settlement, areas N and Q.

The remains consist everywhere of fragmentary stone foundations of unimpressive buildings in a deplorable state of preservation, for not only was the upper part of the mound badly denuded, but these stone foundations have been a quarry for building material since Hellenistic times. As a result the surface of the mound was pockmarked with holes and the robber trenches were filled with Hacılar I, Hellenistic, and modern pottery and other rubbish.

Two phases of occupation can be discerned in the rare cases where floor levels are preserved in association with walls. To the first, Hacılar IC, most of the stone founda-
90 tions can be assigned (fig. 36), whereas the second is only notable for repairs and alterations, associated with higher floors but not with any major structure. The pottery does not help in distinguishing between any of the phases of Hacılar I, for the same types and wares continue without any change throughout the period. Some of the IC and ID pottery is less well made, but it is often found in unsavoury courtyard deposits and has been more subjected to ammonia, and other forms of weathering than that found in the sealed deposits of the burnt fortress, so that the poorer quality need not be due to primary causes. In any case, even in the stratified courtyard deposits (area K), fine Hacılar I pottery occurs right up to the end of the settlement. Far more significant was the absence of small finds and the miserable character of the building remains. In spite of a long stretch of walling in the western half of the settlement, it does not seem that there were any fortifications. Within the south-west corner of the wall was a rubble pavement, suggesting a courtyard, south of the one recognisable room, which was roughly of *megaron* plan, oriented east/west and opening with a portico on to the east. No floors and thus no hearth was preserved. The north wall of this room connects with the stretch of north/south wall just
90 described, but beyond this there are further remains of rooms (near N on fig. 36). Between two buildings lay a rectangular hearth of normal Hacılar I type, but it was in the open and not contained within a room. No remains of buildings were found above the eastern half of the Hacılar II settlement. If they ever existed, they must have been completely pillaged – a reasonable supposition, for the whole area was extremely soft upon excavation and had evidently been disturbed within recent memory.

It is possible that more remains of Hacılar IC and ID lie beneath the unexcavated northern half of the mound, but it seems unlikely that it will ever be possible to establish a plan of the latest occupation in the Hacılar I period, nor would it seem worth while.

It is only too clear that the destruction of the Hacılar fortress dealt a death blow to this once flourishing settlement. After the fire and massacre, some of the survivors continued to live on the mound, perhaps for a further century, whereas others may have moved to the site north of the village where Hacılar I pottery has also been found. However that may be, the old mound was deserted, probably *c.* 5000 BC, never again to be re-occupied. As the last survivors of a once vigorous culture left their miserable hovels for the unknown, a dark age descended upon south-western Anatolia.

Chapter 4. The Burial Customs

At Hacılar a total of twenty-two skeletons was found buried in twenty graves during the entire course of the excavation, which shows conclusively that the people of Hacılar normally buried their dead outside the settlement and that such graves as were found are the exception and not the rule. We estimate that there must be at
95 least 5000 graves in the neighbourhood of Hacılar (see table below and fig. 42).

Not a single burial was found in the seven successive phases of the aceramic settlement of the late eighth and early seventh millennium. Aceramic Hacılar, therefore, already differed in its burial customs from Çatal Hüyük, where the dead were given intramural secondary burial, whereas at aceramic Hacılar they must have been buried outside.

The differences involved may suggest the presence of different ethnical elements and it may be worth noting that at the aceramic site of Suberde near Seydişehir no intramural burials were found either, whereas at the third known aceramic site of Aşıklı Hüyük near Aksaray, which is probably earlier than the layers yet explored at Çatal Hüyük, intramural burials are reported.[1] At present it looks as if the dividing line between the two customs of burial runs along the mountains that border the western end of the Konya Plain.

At Hacılar itself the custom of extramural burial, assumed for the aceramic period, continued after the hiatus that separates the end of the aceramic period from the beginning of the late neolithic. Not a single burial was found in Hacılar IX, VIII, VII, or VI.

The series of rare burials starts with three isolated graves in the ruins of the burnt Hacılar VI settlement: one in house Q.6, and two others, one on the top of the other, in house Q.2. These may represent the burials of victims of the Hacılar VI fire buried in haste among the ruins of their houses, and they may be dated to the transi-
96 tional phase of Hacılar VI/V (fig. 43).

Not a single burial was found in layers of Hacılar V, but in an abandoned plot covered by a courtyard overlying the ruins of houses P.VI.1 and 2 there were eight
96 graves belonging to Hacılar IV (fig. 43), the largest single group of burials discovered at Hacılar.

In Hacılar III only a single burial was found on the edge of a trench in area P; but in the shrine of Hacılar IIA three graves were excavated, two of them containing

[1] Ian Todd, personal communication.

the bodies of a mother and child, while the third was single (fig. 44; pl. XXXVII). 96,36
In the village of Hacılar IIB, reconstituted after the fire, there were no indications of any graves. In the vast ruins of the fortress of Hacılar I only five graves were found, all placed below the IB floor of room 6 (fig. 44). 96

GRAVES AND ORIENTATION

All twenty graves found at Hacılar are shallow ovals cut directly in the earth and none was provided with any lining, either in brick or matting. The method of burial was primary, that is, the body was interred upon death without preliminary excarnation. In the graves of Hacılar VI/V the dead lay in a contracted position on their left side with heads oriented either to the east or west. The skeletons in the graves of Hacılar IV all lay on their right sides with heads oriented northwards, while those of Hacılar IIA and Hacılar I show no fixed orientation, but were placed on their right sides (IIA), or right or left sides (I). Although most graves are individual, two in Hacılar IIA contained the bodies of mother and child.

FUNERAL GIFTS

Of the twenty-two skeletons found, only nine were provided with funeral gifts. The skeleton in house Q.VI.6 (Hacılar VI/V) had a red monochrome bowl, a cup in the form of a woman's head (rescued from the fire) and a bone pin. The upper grave in house Q.VI.2 had a few beads and a stone bowl on three feet, whereas the lower burial was without gifts. Of the eight bodies of Hacılar IV, only four or five had a red monochrome bowl, or at most two bowls. Of the three graves in Hacılar IIA, only the central one was provided with an oval cup for the mother and a small painted bowl for the child, placed next to a 'funny stone', a smooth piece of limestone with natural markings. The single burial of Hacılar III and the five burials of Hacılar I had no funerary equipment.

Such then are the scanty furnishings of the graves found within the settlement: one or at most two drinking vessels, a bone pin, a few beads – if anything at all. The paucity of such funeral gifts is at first striking, but not different from the majority of burials at Çatal Hüyük. What is new, is the introduction of pottery into the graves, which is something still unknown at Çatal Hüyük and which may not have started until Hacılar VI/V.

The evidence for burials within the settlement is tabulated below and should be compared with the population figures and the resulting estimate of the number of extramural burials for the Hacılar settlements. The two tables prove clearly that our knowledge of burial customs at Hacılar is virtually non-existant. All we know for certain is that those buried within the settlement were laid in oval graves, in contracted position on their left or right side, without consistent orientation, and were accompanied, if at all, by few gifts consisting of pottery or a stone bowl, a pin or a few beads. There is no evidence for secondary burial or for ochre burials among the twenty-two skeletons. What else do we know? That burial within the settlement was abnormal, and practised for reasons beyond our guess: the Hacılar VI/V burials may be those of victims of the fire dug up during the re-opening of the old well; the women and children in the shrine of Hacılar IIA may have been privileged to be buried there

Intramural Graves at Hacılar

Aceramic Neolithic I–VII	NONE
Late Neolithic Hacılar IX–VI	NONE
Hacılar VI/V	3
Hacılar V	—
Hacılar IV	8
Hacılar III	1
Hacılar IIA	3 (*5 skeletons*)
Hacılar IIB	—
Hacılar IA	—
Hacılar IB	5
Hacılar IC	—
Hacılar ID	—

Total : 20 graves (*22 skeletons*)

Estimated Populations and Extramural Burials

level	population	no. of generations	dates BC	no. of burials
IX/VIII	100?	2	5750–	200?
VII/VI	250	3	5600	750
V	100?			
IV	150?	6		750?
III	150?			
IIA	150	5	5400–	375–550
IIB	50–75	5	5250	
IA–B	300–500	5	–5100	1500–2500
IC–D	100?	3	–5000	300?
		24 at about three generations per century		3870–5550 or between 4000 and 6000 (*5000 average*)

or not; the others may be victims of disease or murder, slaves or foreigners, who should not contaminate the cemetery where the people of Hacılar were normally laid to rest. If one thing has become clear since our excavations (1957–60), it is the wealth of the Hacılar cemeteries, which *we* had to leave unexplored.

Human skeletal material submitted to the late Professor Muzaffer Senyürek, Ankara University

1. Skull from Hacılar I fortress, room 6, level IB.
2. Skull from Hacılar I fortress, room 6, level IB.
3. Part of human skull, Hacılar IIB, area A.
4. Fragment of lower jaw, Hacılar IIB, area N, room 4.
5. Fragment of lower jaw, Hacılar IIA, area O (near well).
6. Fragmentary skeleton, Hacılar IIA, area O, room 1.
7. Burial A, Hacılar IIA, area O, room 1 (single burial).

8 and 9. Burials B and C, Hacılar IIA, room 1, area O (double burial).

10 and 11. Burials C and D, Hacılar IIA, room 1, area O (double burial).

12. Skull in side of trench, Hacılar III, area P.

13. Fragmentary skeleton, Hacılar IV, area P.

14. Burial, Hacılar V/VI, house Q.VI.2.

15. Burial, Hacılar V/VI, house Q.VI.2 (second one).

16. Skull a, Aceramic Hacılar, level 7 (marked X).

17. Skull b, Aceramic Hacılar, level 7 (marked X).

This material, consisting of seventeen skeletons or parts thereof, was submitted for examination to Professor M. Senyürek, but the report, prepared by him shortly before his untimely death in an air crash, was never published.

Chapter 5. The Chronology

The mound of Hacılar has yielded a clear stratigraphy from top to bottom, with thirteen superimposed building-levels in the eastern half of the mound. In the western sounding, an even earlier occupation was reached with the Aceramic mound (7 floor-levels), which is separated from the beginning of continuous occupation in the eastern half by a long hiatus. As we were dealing with two different sites, the numbering of building-levels was discontinued and those of the earlier mound are given as Aceramic I–VII. The entire stratigraphic sequence of Hacılar runs as follows:

Hacılar ID, IC	squatter levels
IB	repairs, followed by destruction
IA	fortress
IIB	last phase of fortified enclosure
IIA	first phase of fortified enclosure
III	
IV	
V	
VI	final late neolithic settlement
VII	
VIII	
IX	first late neolithic occupation
LACUNA IN OCCUPATION	
Aceramic Hacılar I–VII	
virgin soil	

The settlements at Hacılar are dated with the help of the C–14 method, and we are much obliged to the Radiocarbon Laboratories of the University Museum, Pennsylvania and the British Museum for their kind co-operation.

There are seven radiocarbon dates for Hacılar, four run by Dr E. K. Ralph in

Philadelphia, and three run by Dr H. Barker at the British Museum. Allowing for the tolerance, which is higher in the BM examples, all the dates are consistent. The dates are quoted with the new (and probably truer half-life) of 5730, but for comparison with other areas those calculated with the old half-life of 5568 are added in brackets. All dates quoted are BC.

Hacılar IA

Construction of fortress. Roof beam, room 5

P.315. 5247±119 (5037±119 average of 5097±221 and 4976±95)

Hacılar IIA

Construction of fortified enclosure. Roof beam, room N.4

P.326–A. 5436±131 (5219±131)

Hacılar VI

Ashes from last hearth fire before destruction. Area E, house I

P.313–A. 5620±79 (5399±79)

Charcoal from post in front of house P.VI.1

BM 48. 5850±180 (5590±180) ⟶5670

Hacılar VII

Corner post in room below P.VI.2

BM 125. 6080±180 (5820±180) ⟶5900

Hacılar IX

Charcoal. Hearth throwout, later IX floor in area E.

P. 314–A. 5637±92 (5393±92) ⟶5729

Aceramic Hacılar V

Charcoal from hearths in courtyard

BM 127. 7040±180 (6750±180)

The value of these dates is that they form a sequence, and with one exception (the date for Hacılar IX) they ascend in age as one probes deeper into the mound. All these dates were obtained from charcoal, sometimes from hearths, more often from beams used in the construction of buildings. Those used in Hacılar I and II were not very thick but the reverse was the case in the posts used in Hacılar VI and VII, and it is possible that some of these tree trunks were re-used, having been taken from earlier buildings. This problem, which also occurs at Çatal Hüyük and later at Gordion, might give dates which are higher than expected, the trees having been felled long before being used as timber in buildings. The dates for the construction of Hacılar VI and VII (BM 48 and 125) may be cases in point, but with the large tolerance the first date could be reduced to 5670, which would fit with a date of 5620 for the end of Hacılar VI. The Hacılar VII date, even if reduced to 5900, is still too early and might imply the re-use of old timber or that the timber came from the inner part of a particularly large tree.

In the case of the Hacılar IX date, the charcoal came from a floor, presumably in a courtyard, and the possibility of contamination in the late neolithic cannot be discounted. It would have been useful to have these dates checked by others obtained from carbonised grain, as we were able to do at Çatal Hüyük.

With the help of these radiocarbon dates a skeleton of chronology can be established for Hacılar's main periods, and details can be added by estimating the approximate length of individual building-levels.

Hacilar	ID	deserted *c.* 5000 BC
	IC	
	IB	fortress destroyed *c.* 5100 BC
	IA	fortress built *c.* 5250 BC
	IIB	
	IIA	built *c.* 5400 BC
	III	a short period, *c.* 5450 BC
	IV	lasting about one century, beginning *c.* 5550 BC
	V	a transitional phase of short duration, *c.* 5600
	VI	last neolithic settlement, destroyed *c.* 5600 BC built *c.* 5670 BC
	VII	built *c.* 5700 BC or somewhat later
VIII and IX		beginning *c.* 5750 BC
HIATUS		about one millennium, *c.* 6750–5750 BC
		Aceramic Hacılar, flourishing at end of 8th, beginning of 7th millennium. One date (Ac.V) *c.* 7000 BC

In terms of cultural development the Hacılar stratigraphy can be broken down into a number of phases:

A. The aceramic settlement, the earliest occupation on the site.

B. A period during which there was no occupation at Hacılar, but which is typologically filled by Çatal Hüyük.

C. Re-occupation of the site in the so-called late neolithic, Hacılar IX–VI, which ends in destruction at the moment of its greatest prosperity, *c.* 5600 BC.

D. The settlements of Hacılar V–II, *c.* 5600–5250 BC, the so-called early chalcolithic or the period of the first painted pottery cultures, developed from the previous 'late neolithic'.

E. The Hacılar I period (*c.* 5250–5000 BC), the end of the 'early chalcolithic', characterised by newcomers with different traditions of painted pottery, figurines, and architecture.

Comparative dates are relatively few in Anatolia, but those that do exist support the dates from Hacılar.

1. At present, only three aceramic sites are known on the Anatolian plateau: Hacılar, Suberde on the Suğla Lake, and Aşıklı Hüyük, near Aksaray. A single date is known from the first two sites:

Aceramic Hacılar V : BM 127. 7040±180.

Suberde, lower part of earliest stratum : I–1867. 6570±140 (lower half-life). Corrected with the higher date, this gives 6850±140 BC, which compares well with Aceramic Hacılar V.

The radiocarbon dates from the unexcavated site of Aşıklı Hüyük are not yet available.

2. Çatal Hüyük in the Konya Plain has yielded a series of eighteen radiocarbon

dates[1] which range from *c.* 6500–5700 BC (levels X to end of II), suggesting a slight overlap with the beginning of Hacılar (IX and VIII), which is perfectly possible.

A single date from neolithic Mersin 'level XXXIII', the charcoal of which was collected without proper excavations, yielded a date of W–617 6265±250 (6000±250) BC for a pottery-bearing stratum.

3. A series of radiocarbon dates from Can Hasan 2B (house 3), which would seem to have been roughly contemporary with Hacılar I, runs as follows:

P–792 4921±78 (4720±76)
P–791 5008±82 (4805±80)
P–790 5085±80 (4880±78)
P–795 5087±80 (4882±78)

A comparison of individual dates is useless to establish chronological relationships between different cultures; we need far more sequences of dates before a reliable chronology can be constructed.

The main requirements for such a chronology are not C–14 dates, but archaeological facts, comparisons with neighbouring cultures (not with those hundreds of miles away!) and, if they can be found, imports.

There are a limited number of imports in Hacılar IX–I, but their significance is reduced by our ignorance of their provenance. For the time being Hacılar can only be dated in terms of C–14. A number of points, which have come up in discussions since the publication of our preliminary reports in *AS*, VIII–XI, 1958–61, should be mentioned here. F. Schachermeyr and M. Mellink have suggested the possibility of a gap between Hacılar VI and V. This suggestion is based on Schachermeyr's desire to locate cardium ware in Anatolia. On the Anatolian plateau, however, such impressed wares do not seem to exist, neither at Hacılar nor at Çatal Hüyük. Another debatable point is the relation between the end of Hacılar pottery and the beginning of the late chalcolithic pottery of Beycesultan type. Among the hundred thousand sherds or more from Hacılar I there was not a single piece of the characteristic late chalcolithic ware, which occurs on the mounds of Hacılar II, 500 yards from our site, and at Karaçal, the next village, about 3 km away. This does not suggest that the two periods overlap, even if stratigraphical confirmation is missing. At Beycesultan there is no Hacılar ware, but at a number of sites contemporary with Hacılar I in the Yeşilova and Tefenni districts, west and south of Hacılar, late chalcolithic pottery does occur. To suggest contemporaneity of these two cultures is confusing the issue and the record at Hacılar itself suggests that the late chalcolithic is later than the end of Hacılar – how much later, remains to be seen.

No imports of Hacılar pottery are known in the Pisidian Lake District, Çatal West, or Can Hasan, so that no relations can be established, even if the presence of imported obsidian indicates that trade did exist with cultures further east.

[1] *AS*, XIV (1964) 116–19.

Part Two

POTTERY, STATUETTES
AND OTHER SMALL FINDS

1. Hacilar IIA. Painted bowl (cf. vol.2, pl.LXXVI:1 and fig.80:7)

Chapter 6. The Pottery

At Hacılar, pottery formed not only the bulk of all finds but was so distinctive in shape, ware and decoration, not to mention in its artistic and aesthetic qualities, as to merit a thorough publication.

Throughout the seven hundred and fifty years of occupation of this settlement, the Hacılar potters continued to produce outstanding pottery, mainly monochrome wares at first (in levels IX–VI, but also in V), which were gradually supplanted by an increasing quantity of red on cream painted wares (see fig. 155, overleaf).

Whether monochrome or painted, the Hacılar pottery was almost invariably burnished, and burnished to a degree that surpasses all other pottery of early date in Anatolia. This technique of burnishing greatly enhances the Hacılar pottery, but there were other factors that contributed to its excellence, one being the availability of fine clays; for however skilled a potter may be he cannot produce fine pottery from coarse clay. The second factor was the artistic heritage of the Hacılar potters, which combined with skill and innate good taste, produced a balance of design rarely found in pottery of other contemporary cultures. Many of the pieces from Hacılar are works of art, while most are well above the average in craftsmanship.

With a thousand years or more of pottery production in Southern Anatolia behind him the skill of the Hacılar neolithic potter is easily understood. Using the fine clays of the Burdur area, he produced objects superior to those of his neighbours. The origin of the varied patterns was, however, harder to explain until the discovery of even earlier neolithic wall-paintings and reliefs at Çatal Hüyük. These paintings of textile patterns and schematised figures, have now provided most if not all of the prototypes for Hacılar. The motifs used in the decoration of Hacılar pottery thus prove to be traditional and of much greater antiquity than was once believed. Moreover, now that they can be linked with earlier wall-paintings at Çatal Hüyük it becomes even more imperative to link at least the artistic expression of these two successive cultures, in the first of which the medium was wall-painting and relief, while in the second it was painted pottery. Thus, however tentative, a sequence of artistic and therefore religious expression of ideas is obtained, in spite of the regional and very marked differences in material culture.

A petrological study[1] of eighty-five fragments of Hacılar pottery, chosen to obtain the maximum variation in colour, texture, and surface treatment, has yielded

[1] See below, pp. 142–4.

approx. date BC	level	no. of illustrated pots/sherds *painted*	*monochrome*	*total*
5000–5250	IA–D	334	62	396
5300	IIB	107	58	165
5400	IIA	228	35	263
5450	III	74	30	104
5550	IV	104	43	147
5600	V	39	26	65
	VI	19	128*	147
5670	VII	1	29	30
	VIII	4	13	17
5750–5700	IX	15	65	80
	total	925	489	1414

* 14 in relief

level	painted pottery *% of total pottery*	'fantastic' style *as a % of painted*
I	70	
IIB	60	66–50 (45 pots)
IIA	55	25 (60)
III	45	25 (20)
IV	35	20 (19)
V	20	17 (7)
VI	10 or less	10–5 (relief)
VII		–
VIII		–
IX		–

155. Hacilar pottery. Table of occurrences, percentages, etc., of various styles.

important results. Whereas the results stress continuity (with some innovations in level V) from Hacılar IX to the end of II, they show a strong break between Hacılar II and I. This confirms the conclusions reached by purely archaeological means, namely, that the people of Hacılar I must have been newcomers, with different traditions. Needless to say, it is impossible to have a petrologist on the excavation to furnish an adequate description of every pot or potsherd found, and for the purposes of cataloguing the pottery we must perforce use the old method of description by colour, texture, and surface treatment.

All Hacılar pottery falls into two main classes, painted and unpainted monochrome ware. The distinction is artificial in that much monochrome ware is covered with a slip of the same material as was used for painting patterns. 'Patterned' and 'monochrome' ware describes the distinction more accurately. Coarse ware as a separate class is almost unknown before level I and the quality of the pottery varies, but is nearly always excellent and burnished. Whereas straw was not mixed with the clay intentionally, the clay contains rock fragments of various nature, which form the basis of the petrological study. In lay terms these consist of small particles of black and white grits or flakes of mica. Most of the body fabric is buff in colour, with some variations. A fine slip is common, but often hard to distinguish, and in the early layers (IX–VI) frequently absent. At this period the presence or absence of a slip makes little difference to the quality of the vessel and need not worry one unduly: one cannot pretend that it is important. The degree of firing varies considerably, thus giving rise to a series of different colours, which in the earlier levels often produce a mottled effect; in the later layers the various shades of paint and slip are evidently the result more of firing than of intentional colour schemes. In this context the results of secondary firing should at least be mentioned; in the numerous conflagrations many pots lost their original colours. Cream wares were smoked grey; red on cream pots sport new hues of black on grey, much beloved by collectors, but simply the accidental result of burning. In many cases, however, such secondary colours are easily accounted for.

Nevertheless, as one observes the Hacılar pottery level by level, one can, without being misled, note certain changes in colour, just as one can in pattern or shape. Thus, light grey and cream wares predominate in Hacılar IX and VIII, red-brown and buff wares in VII and VI, and red monochrome in V and IV, whereas in III and II the monochrome ware is mainly orange-red and light brown. In Hacılar I the monochrome burnished wares are cream, buff or a deep red. These colour variations are less obvious in the painted wares, for after level VI, when these come to the fore, there is already considerable variation, which persists until the end of the settlement. For general purposes the painted Hacılar pottery is a *red on cream* ware and intentional polychromy is unknown. In practice, however, there are a large number of variations in the contrasting colours of paint and slip, as the following table shows:

RED ON CREAM WARE : Variations

Pattern	*Slip (or occasionally unslipped surface)*
pink	dead white
pale red	offwhite
orange red	cream
red	yellow cream
crimson	orange cream
redbrown	ivory (very light grey)
light brown	coffee coloured
dark brown	plain buff
(red shading to black)	

Examples of every possible combination are found and marked in the catalogue but the most common varieties are: red on cream, deep red (or crimson) on ivory, light brown on cream, dark brown on yellow, and red on orange, usually with blurred outlines, the result of burnishing before the paint had properly dried. All Hacılar pottery is of course hand-made.

Whereas we shall observe the division into monochrome and painted wares, the description of Hacılar pottery will be by shape: bowls, cups, jars, etc., for it is the *function* of a pot which is its most distinctive characteristic. Monochrome and painted wares have a good number of shapes in common, but what is far more remarkable at Hacılar is the absence of cooking pots, lids and handles.

All the registered Hacılar pottery is in the Ankara Archaeological Museum. The sherd material was distributed for purposes of study between the Ankara Museum, the Museum of Burdur, the Museum of Antalya, the Museum of Afyon Karahisar, the Prehistoric Seminar of Istanbul University and the British Institute of Archaeology at Ankara. Through the courtesy of the General Directorate of Museums and Antiquities, two hundred sherds from the 1957 and 1958 seasons of excavation were given to the British Institute of Archaeology at Ankara for distribution to British Museums.

241–9 **Late Neolithic Pottery.** Hacılar IX–VI. Figures 45–49

The repertoire of shapes of late neolithic pottery at Hacılar can best be reconstructed from the massive deposits encountered in the burnt houses of Hacılar VI, for the pottery of the earlier building-levels, IX–VII was very fragmentary.

The usual division of pottery into bowls, cups, jars and other vessels applies equally to pottery of the late neolithic period. Some vessels were used for eating and drinking, others for pouring, carrying, or storage of solid foods and liquids. Cooking pots, though not quite absent, are very rare, but this is something peculiar to Hacılar IX–I and is not confined to the late neolithic levels. Very typical of this early pottery is a graduation in size of the vessels as well as in shape, so that it is often purely arbitrary to regard a vessel as a bowl or a jar. No two pots are exactly alike, as a glance at the illustrations will immediately show:

Now that the excavations at Çatal Hüyük have shown that pottery was made on the Anatolian plateau at least a millennium before the late neolithic settlement of Hacılar was founded, we need no longer be surprised at the fine quality and technical perfection of Hacılar wares, though we may still marvel at it, for the Hacılar potters soon outshone their masters. It is no longer necessary to invoke stone vessels as prototypes for these late neolithic wares, fitting, as they do, snugly into the neolithic ceramic tradition of the south Anatolian plateau, even if the immediate antecedents of that tradition still elude us. The possibility that pottery like that of Kızılkaya[1] is ancestral to that of Hacılar IX remains strong, but should be put to the test of excavation.

Late neolithic pottery appeared at Hacılar in an advanced stage of sophistication,

[1] *AS*, XI (1961) 166 f., fig. 6.

and though most of it is monochrome or mottled in colour, the use of a slip of the same or of a different red and brown colour was quite common. At the same time a limited number of vessels bear decoration in painted stripes, applied hesitantly at first, but with full assurance by the end of the period. It should be noted that these new features did not originate at Hacılar but were brought in by settlers from elsewhere, and can now be traced back to the later levels of Çatal Hüyük, where they are real innovations in levels IV and III.

HACILAR IX. Figures 45–7 241–5

Shapes: Cups and bowls, fig. 45; Jars, fig. 46; Painted ware, bases, etc., fig. 47

From the very beginning of the late neolithic settlement there is wide variation of shapes in the bowl and jar categories, indicative of long periods of previous development.

Such characteristic early neolithic shapes as simple hole-mouth jars, simple bowls, or bowls with vertical sides, L-shaped feet on bowls, or bowls with basket handles have become rarities and were evidently on their way out by Hacılar IX, *c.* 5750 BC.

There is now a general tendency towards gracefully swung profiles, somewhat everted lips, and pronounced carinations. Disc bases are the rule; tubular lugs, vertically or obliquely placed, singly or in pairs, are common on jars, less so on bowls. These lugs evidently served for tying on a cover of cloth or skin to keep out insects, for pottery lids are unknown. Other forms of handles, like basket handles (fig. 47:39) 245
or pairs of lugs on the inside of the rim (fig. 47:29), are rare. A good number of vessels preserve oval shapes (fig. 47:1, 16–19, 29, 36).

Although most of the pottery is a fine cream or light grey burnished (unslipped) ware, wares covered with a red slip are fairly common (fig. 47:13–25), and simple painted stripes, bands, dots, etc., make their first appearance (fig. 47:1–15, 17). A single incised piece of dark grey ware, a small dish with four feet (fig. 47:28), is unique and was possibly imported from a region where such incised wares were made, although similar bases are not unknown in Hacılar IX (fig. 47:26). The base with four L-shaped legs (fig. 47:27) is important, for it shows links with Çatal Hüyük, where this type appears more frequently in pottery and stone in levels IV–II.

SHAPES

Small bowls or cups. Because they could be used as drinking vessels, these show considerable variety of form (fig. 45:1–8, 14–16). The straight-sided examples (fig. 241
45:7, 14–16) are relatively rare, whereas the others (fig. 45:1–6) are common. The fine example, fig. 45:8, might be regarded as a small jar rather than a bowl, but the distinction between many of these vessels is subjective.

Small bowls. These have fairly straight, outcurving or concave sides (fig. 45:9–13, 17–20). Variations in shape are as marked as among the previous group and as among the larger bowls. Some are provided with two or four small lugs, vertically perforated.

Medium size bowls (fig. 45:21–35). The same three variations occur in this class: slightly flaring outwards in profile (fig. 45:21, 24 26), gracefully curved profiles (fig. 45:22, 23), or deeper and more rounded and with the mouth of the vessel narrower than the maximum diameter of the bowl (fig. 45:29–35). Some of these bowls also carry lugs (fig. 45:31, 34). Rare oval bowls or cups (fig. 47:1, 16–19). 245

Oval bowls and cups make their appearance in Hacılar IX and the following late neolithic levels but their fullest development belongs to Hacılar V–I. A fragment of a particularly fine painted example is shown in fig. 47:1, and it is interesting to note that these earliest examples at Hacılar are already painted. Oval bases are also found (fig. 47:36).

243 *Jars.* It is often difficult to draw the line between jars and deep bowls (fig. 46:2–5). There is, however, a definite tendency for the mouth of a jar to have a smaller diameter than its body and most of the jars are provided with four lugs, evenly spaced or grouped in pairs (fig. 46:7–10, 12, 14–16). Most jars have no rigidly demarcated neck, or at most the beginning of a bead rim (fig. 46:3, 7, 10, 12, 16), but the first jars with short necks are first found in Hacılar IX (fig. 46:4, 11, 13). Most jars are fairly squat, but it is possible that the fragmentary vessels (fig. 46:12, 15, 16) were deeper.

245 A basket-handled jar (fig. 47:39) is exceptional and harks back to early neolithic types at Çatal Hüyük, when basket handles were common.

247 HACILAR VIII. Figure 48

The volume of pottery found in level VIII is small, so that comparisons are difficult to make. On the whole, the pottery of this period is very much like that of level IX and, though occasional archaic forms are still found, one has the impression that the number of shapes is more restricted than before.

A number of old-fashioned types persists, such as the hole-mouth bowl (fig. 48:14, 18) and the hole-mouth jar (fig. 48:22) – which could have come from Çatal Hüyük! Among other rarities are small and large simple bowls of more or less hemispherical shape (fig. 48:13, 28–30).

In colour and texture the Hacılar VIII pottery is more closely linked to that of level IX by its grey and cream wares than to Hacılar VII and VI. Red washed and red on cream painted ware is found in small quantities.

Bowls. Besides hole-mouth and simple bowls, which are unusual, there are small bowls with bead rims (fig. 48:1, 15). Far more typical are bowls with fine carinated profiles and swung sides, already familiar from Hacılar IX (fig. 48:2–12, 16).

Oval cups. A fragment of an oval cup with sharp ridge in front below the pointed slip, a type common from Hacılar V–IIB, occurs in level VIII (fig. 48:19).

Jars. These show familiar profiles (fig. 48:19, 21, 23) and no great development from their predecessors, but there appears to be now a large type (fig. 48:27), which was to become common in Hacılar VI. There are some innovations in the form of handles, or rather lugs, resembling stylised animal heads (fig. 48:25, 26). Other jars are provided with oval necks (fig. 48:24) and one jar has a distinct funnel neck with oval orifice (fig. 48:20).

Painting. A fragment of a painted jar (fig. 48:23) has counterparts in the painted
271 pottery of Hacılar VI (fig. 59), and shows the same broad vertical stripes.

249 HACILAR VII. Figure 49

The excavations have shown that Hacılar VII is the first phase of the well-known settlement of Hacılar VI and it marks the building of a greatly expanded settlement.

In the pottery also there are changes and the old cream and pale wares gave way to the rarer red-buff and brown slipped vessels, and at the same time painted ware increases in quantity. The shapes, however, show but a gradual change, and the development is continuous and uninterrupted. The most outstanding of the painted pieces (fig. 49:13) is a deep simple bowl, a rare shape at Hacılar. The painted pieces (fig. 49:10, 14) belong to lentoid jars with four lugs, like fig. 49:16, 17, a shape that first appears in the late neolithic and will continue to the end of Hacılar IIB. The other painted bowls and jars are like those of levels IX, VIII and VI. A tall jar (fig. 49:13) is unique.

All the other shapes illustrated in fig. 49 show types common to levels IX, VIII and VI: the bowls of all three varieties (fig. 49:1–7) and the jars (fig. 49:8, 9, 11, 12).

HACILAR VI. Figures 50–9; plates LI–LXIII 99–111, 250–70

In contrast to the fragmentary and often scanty material from rubbish dumps or an occasional room of Hacılar IX–VII, the pottery of Hacılar VI is derived from sealed deposits in burnt houses, with the results that a great number of pots could be mended and restored (figs. 50–9). 251–71

The pottery of Hacılar VI has shed the last vestiges of archaic early neolithic shapes: the number of shapes is more restricted and variations are better documented. On the whole the size of the vessels is somewhat larger than in Hacılar IX. The quality is excellent with many exceptionally fine burnished pieces. The colour of the pottery is now predominantly red, red-brown and buff; mottling is still frequent and most of the vessels are slipped. Painted pottery is still rare and does not amount to more than 10 per cent of the total bulk.

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Bowls (figs. 50–2) 251–5

A. Small bowls with swung profiles, occasionally with small lugs (fig. 50:1–9). Characteristic of Hacılar VI is the outward flare of the lip of the bowl. This is the most common shape among small bowls.

B. Small shallow bowl (fig. 50:10–12) with flaring rim. Less common.

C. Larger bowls with flaring rim (fig. 50:13–18). A type known since level IX, but more common now. Often fairly coarse and with streaked or wiped exterior.

D. Medium-size bowls with wide mouth and S-profile. Most frequent shape (fig. 50:19–24, 29, 30; 51:1–7). Rarely with lugs (fig. 51:7).

E. Medium-size bowl with sharply everted lip, a variant of (D) (fig. 50:25, 27), and with four lugs (fig. 50:28).

F. Deeper bowls, more globular in shape (fig. 50:26, 29; 51:10, 11). Even larger version (fig. 51:12–14).

G. A variant on type (F) is an oval with two vertically perforated lugs on the interior of the rim (fig. 51:9), a type known since Hacılar IX.

H. Large bowl with straight flaring sides (fig. 51:8). Uncommon.

I. Very large deep bowls (fig. 52:1–5), essentially a larger version of type (F), but never provided with lugs.

Jars (fig. 52:6–8; 53–57). The jars of Hacılar VI show a straight development from 255–67

those of previous building-levels. Hole-mouth shapes are rare and may be imports,
271 although the painted one (fig. 59:13) was probably locally made. Jars can be divided into the following types:

A. Medium-sized jars, usually with two or four lugs, less often paired than before (fig. 54:1–1a, 6), but diagonally placed lugs are still found (fig. 53:8). Very few jars have no lugs at all (figs. 53:2; 54:3). The lugs vary in shape from tubular to mere blobs, but with one exception (fig. 53:9) they are always vertically perforated.

Profiles of jars vary: many are fairly squat, resembling deep bowls (figs. 53:1, 3, 4, 6, 8, 10; 54:3), whereas others are more piriform (i.e., pear-shaped) with a more pronounced lip (figs. 53:10, 13, 15, 17; 54; 1, 4, 6, 9, 10, 13).

B. Funnel-necked jars are rare (fig. 54:2), but similar types existed already
247 in Hacılar VIII (fig. 48:20).

C. Large jars, fairly globular in shape and without any lugs are not infrequent (fig. 52:6–8). Such jars may instead be decorated with small animal heads modelled in relief (fig. 56:1, 3–8).

D. Small jars, rather squat or biconical in shape, and frequent (figs. 53:7, 9, 12, 14, 16; 54:5, 8, 11, 12). The jar in fig. 54:8 is exquisitely burnished and has an offset neck, rare in jars of this period. Evidently the small jars follow the large ones in form, but they are usually less well made.

E. Miniature jars (fig. 55:1–3). These are all coarse and badly made.

F. Oval jar (fig. 55:4) with a lozenge-shaped mouth and two pairs of lugs. Unique.

G. A group of jars of different manufacture (fig. 55:5, 8, 9, 11, 12) may possibly be regarded as imports on account of their brown burnish and different surface texture, which is closer to the early neolithic wares of Çatal Hüyük. Their provenance is unknown. Two of these jars (fig. 55:5, 8) have anti-splash rims; the first is oval, the second sub-rectangular in shape, suggesting vessels made of skin or leather. Fig. 55:11 is of the same ware, and has four triangular tubular lugs; fig. 55:12 would be at home at Çatal Hüyük.

H. Jars with ledges below the rim (fig. 55:16–18) are only known from fragments. The shape might suggest that they were provided with a lid, but lids are unknown in Hacılar VI pottery.

104, 105 I. Lentoid jars (figs. 56:2; 57; pls. LVI, LVII) with four stout lugs for carrying. This is a shape first encountered in Hacılar VII (fig. 49:16, 17), but probably present since level IX. Resembling a huge lentil, it evidently served for carrying
271 water. Painted versions also occur (fig. 59:11).

263–7 JARS AND BOWLS WITH RELIEF DECORATION. Figures 56 and 57

A characteristic of Hacılar VI pottery is the presence of applied decoration. Fig. 56:1 shows a very fine bucranium (bull's head) placed upside-down, which like the human face on the cup in fig. 57:3 suggests that such vessels were often inverted when not

in actual use, or after a libation. On the jar in fig. 56:3 the tubular lugs are used as a schematised head to which horns were added in relief. On another jar (fig. 56:4) there is a human arm with outstretched hand, and fig. 56:5–8 shows animal heads of which fig. 56:6 is almost certainly that of a bear.

A number of fragments with relief decoration are shown in fig. 57: 4, 5, 7–10, 12 and 13. Remains of human figures are uncommon: fig. 57:5 shows the head and one shoulder of a woman's figure, but the sherd was unstratified and need not belong to Hacılar VI, and as it is unique its date cannot be established. A human arm and hand is shown in fig. 57:8, a lug being used to indicate the upper arm. Animal figures are somewhat more common: there is a fine scorpion (fig. 57:10), two ibexes (fig. 57:11–12) and the hind leg of a long-tailed animal, probably a feline (fig. 56, 7), in which the relief is accentuated by the application of white paint. Two crosses in relief form the bases of bowls (fig. 57:13, 14).

THERIOMORPHIC VESSELS

Pots in the form of an animal were very popular in Anatolia at most periods of advanced ceramic development. There are vases in the form of birds, pigs, fish and tortoise in the Yortan culture; at Kültepe almost every Anatolian animal is found; at Gordion there are goats or ibexes, and even in the Seljuk period animal-headed vases were produced. The earliest examples of this delightful ceramic trait are found in Hacılar VI (fig. 57:1, 2, 6, 11, 14). 265–7

The figure of a resting doe (fig. 57:1; pl. LXI), 26 cm in length, shows the animal with its head turned back, the same attitude as found in the wall-paintings of deer at Çatal Hüyük.[1] Of the wild boar (fig. 57:2; pls. LXI, LXII) only the back of the animal and the four feet were found. Restored it would have been 40 cm long, and 26 cm in height.[2] 109 109, 110

A miniature cup (fig. 57:5; pl. LXIII) is modelled in the form of two animal heads placed back to back. They show little detail, but the absence of tusks or horns rules out their identification as boar or bull. They may represent bears, like a similar head on a jar (fig. 56:6); a bear also figures at Çatal Hüyük.[3] 111 263

The small resting figure (fig. 57:11; pl. LX) shows a hoofed animal, but the head is lost and its identification is therefore uncertain. 108

The figure of a bird (fig. 57:4; pl. LX) is also not very distinct but the outline of the wing is incised. The position of the head does not indicate a vulture. 108

All these vessels were made in monochrome ware and none were painted; most have lugs or perforations. They were probably ritual vessels and, with the exception of the bird (house P.1), they were found with the statuettes in houses Q.3 and Q.5.

CUP IN THE FORM OF A WOMAN'S HEAD. Figure 57:3; plate LXIII 265–7, 111

Anthropomorphic vases do not appear at Hacılar until level I, but there is one remarkable cup found with a burial in house Q.6. It had been wrapped in cloth and was partly burnt, suggesting that it belongs to Hacılar VI, had been rescued and buried

[1] *AS*, XII (1962) pls XVI–XVII.

[2] For its predecessors in the wall-paintings of Çatal Hüyük see *AS*, XVI (1966) pls. LIII, LIX, LX, LXIa, LXIIa. [3] *AS*, XVI (1966) pls. LX, LXIa.

with a possible victim of the fire in the ruins of the house. This vessel is unique in Hacılar VI and has four typical lugs, incised eyes, modelled features, and a bun of hair at the back of the head exactly like the Hacılar VI statuettes. The outline of the hair is rather poorly painted. After use, probably ritual, such as libations, the cup would be put upside down showing the head. This is common practice at Hacılar, where more than one jar shows a bucranium in relief, or later painted, placed upside down on the vessel. The cup is of particular importance in that it foreshadows a
351 whole series of oval cups in Hacılar V–II, which represent human heads (fig. 102;
120, 127, 128 pls. LXXII, LXXIX, LXXX). The idea of drinking or pouring libations out of human head or skull is widespread, but it would be dangerous to deduce from this evidence that the Hacılar people were head hunters or drank out of the skulls of their enemies. We have no evidence for such barbarous practices, and one is more inclined to connect the Hacılar head-cups with old skull cults so well illustrated by early neolithic practices in Syria and Palestine, Çatal Hüyük, and aceramic Hacılar itself.

261 MISCELLANEOUS VESSELS. Figure 55:6, 7, 10, 13–21

Among the odds and ends from Hacılar VI there are a number of interesting features. Fig. 55:6 shows a small beaker such as might have been used by a child; fig. 55:10 a funnel; fig. 55:7 the only pedestal (probably for a bowl) found in the entire excavation at Hacılar. A strange lug on the interior of the rim (fig. 55:13) reappears in Hacılar I (fig. 109:17). Then there are small oval scoops or ladles (fig. 55:19–21) the ends of which may end in animal heads, and finally there are coarse clay 'incense burners' or lamps (?) (fig. 55:14, 15), some of which contained a lump of sulphur.

271, 107 PAINTED WARE. Figure 59; pl. LIX

Although painted pottery was not conspicuous among the predominantly monochrome and mottled wares of the last late neolithic settlement, a number of more or less complete vessels were found. They are decorated in a red paint on a buff, cream or light red surface, which was burnished after painting. A few sherds show the use of white paint on buff, red or brown ware, a technique also found on the statuettes of this period. It should be noted that the use of white paint at Hacılar is confined to Hacılar VI and Hacılar I and it is extremely rare. Not a single white-painted sherd was found in the intervening levels of Hacılar V–IIB.

269 The shapes of the Hacılar VI painted wares (fig. 58) are the same as those of the monochrome ware; differentiation in shape between the two categories of pottery had
271 not yet occurred. Only fig. 59:13 has no monochrome parallel.

Bowls

A. White-painted. A fine red-brown bowl (fig. 59:2) bears groups of diagonal parallel lines in white and a second fragment has thick crusty white bands, horizontal, vertical and diagonal on red burnished surface.

B. Red on cream. A simple bowl (fig. 59:5) is ornamented with parallel horizontal bands on the interior. Two others bear red crosses, the first (fig. 59:8) on the interior, the second (fig. 59:9) on the base.

Jars. These are more common than painted bowls and fall into four groups: small jars (fig. 59:1, 3, 6, 10); medium-size jars (fig. 59:4, 7, 12, 14); a lentoid jar (fig.

59:11); and a unique hole-mouth jar (fig. 59:13). All are decorated in red paint; there is only one fragment of a jar with animal relief that is painted in white (fig. 57:10). 265–7

Patterns. The patterns are all simple and unsophisticated. Vertical or slightly curving bands of paint are by far the most common and usually extend from rim to base, but in one example (fig. 59:12) they stop just below the rim. In another (fig. 59:7) 271 they are framed between a horizontal band of paint on the rim and the solid red-painted lower half of the vessel, which foreshadows the usual distribution of the pattern in painted vessels from Hacılar V onwards. Cross-hatching is found on one small jar (fig. 59:1) and on the lentoid jar (fig. 59:11). The decoration of the hole-mouth jar (fig. 59:13) is clumsy and consists of rows of vertical V's between two vertical bands that also cover the handles and divide the painted surface of the vessel into two panels. In the later pottery, panelling was extensively used. A more sophisticated pattern (fig. 59:10) introduces a serrated band surrounding a larger area of solid paint. Such serrated bands become frequent in Hacılar V. A small sherd, part of a closed vessel, bore neat circles in red-brown paint on a buff ground.

DISTRIBUTION

The number of pots in use at the time of the fire is estimated at about 150 which gives an average of a maximum of about twenty pots per house. The ratio of painted pottery to unpainted is one to ten, or 10 per cent, that of vessels with relief decoration to plain burnished ware is one to seven, or about 15 per cent. With so little of the settlement excavated such statistics are not very reliable.

Hacılar V Pottery. Figures 60–3; plates LXV–LXVII 273–9, 113–15

The most striking feature of the Hacılar V ceramic repertoire is the appearance in bulk of painted pottery. In previous levels (IX–VI) painted pottery, decorated with simple designs, had formed less than 10 per cent of the bulk of the pottery. In Hacılar V the situation changes abruptly and the monochrome class, though still numerically predominant (*c.* 80 per cent) is made with less care than the new painted ware. Although the latter is not always decorated in the best taste, especially where jars are concerned, a much larger number of patterns is now employed, and the simple lines, bands, cross-hatchings of the late neolithic give way to complicated geometric textile patterns (cf. fig. 59 with fig. 62). Although this style predominates there is another, the so-called fantastic style, in which curvilinear elements are often contorted into weird and wonderful patterns, many of which defy interpretation (e.g. fig. 62:15, 18, 21). The fantastic style in Hacılar V does not account for more than one-sixth of the painted sherds, but it is present in a fully-developed form. A comparison with the relief decoration of the previous building-level shows that some of its elements, such as bucrania, other animal heads, crosses, and stylised animals, were taken over into Hacılar V, but were now rendered for the most part in painting in the fantastic style rather than in naturalistic relief. A similar development leads from isolated animal heads on Hacılar VI pottery to the animal head handles (or

247 lugs) which, though already known in Hacılar VIII (fig. 48:25, 26) only become common from Hacılar V onwards.

In shapes, the Hacılar V pottery shows a very clear descent from Hacılar VI, though there are of course a number of innovations, for example the greater popularity of oval cups (known since Hacılar IX, but for some reason not well attested in Hacılar VI) and jars with handles in the form of stylised animal heads. It may be suggested that the development of painted pottery at Hacılar went hand-in-hand with the technical advance of being able to produce a clear cream surface without mottling or other discolorations, which lends itself better to painted ornament than the mottled surfaces of late neolithic pottery. With the fine light cream or even dead white slips that were commonly produced by Hacılar V the potter could proceed with more ambitious schemes of decoration than had occurred so far, and he chose the largest pots to decorate with patterns derived almost certainly from the textiles of the period. That these textile patterns incorporate a number of motifs of great age is now shown by the excavations at Çatal Hüyük. At the same time the potter used the traditional (early neolithic Çatal Hüyük) religious symbols such as bucrania, crosses, and stylised animal designs and gave up the complicated theriomorphic vessels of the previous period, retaining only the cup in the form of a human head.

The changes seen in the pottery of Hacılar V are therefore easily explained as a local development. There is no evidence whatsoever for a hiatus between Hacılar VI and Hacılar V, for a change in population, or for the arrival of any newcomers.

273 MONOCHROME WARE. Figure 60

The red and brown burnished monochrome pottery of Hacılar V, which forms 80 per cent of the total ceramic bulk, is closely related both to that of Hacılar VI and that of Hacılar IV, and hence stresses the continuity of culture. A glance at fig. 16 shows, nevertheless, certain differences when compared with the pottery of Hacılar VI. There is a reduction in size in the monochrome wares, for the larger vessels are now gaily painted. The tubular lugs, so characteristic of the late neolithic, tend to give place to lugs or handles in the form of animal heads, if they do not disappear entirely.

Bowls. Whereas many of the Hacılar V bowls still preserve earlier (level VI) characteristics (fig. 60:1, 2, 6, 9, 10, 12, 14, 16), one should note the predominance of bowls with sharply everted rims (fig. 60:3–5, 7, 8, 11, 13, 15–17), a shape that is most
113 typical of Hacılar V. On these bowls tubular lugs become less common (pl. LXV).

Oval cups. The two complete oval cups (fig. 60:20, 21; pl. LXV) are of the type with a pinched mouth at either side, which we have called the 'double oval cup'. They both have a pair of tubular lugs at either side. Fig. 60:13 may be a fragment of a similar vessel. The other type of oval cup with a single pinched lip for pouring also exists, both in monochrome and painted ware. Oval cups, first attested in Hacılar
245 IX (figs. 47:1) but not represented in Hacılar VI, become common in Hacılar V and continue without change till the end of level IIB.

Jars. A small jar with an internal ledge along the rim has four perforations for a
273 lid (fig. 60:19). Other jars (fig. 60:18, 22) show Hacılar VI shapes, but a tendency towards emphasising the rim of jars is typical of Hacılar V, as it was in the case of

the bowls. Another jar (fig. 60:23) has a funnel neck and, instead of tubular lugs, two handles imitating animal heads. Others are shown in fig. 60:24, 25, and such handles remain in use till the end of Hacılar IIB. Another innovation of the period is the 'altar' or 'table' (fig. 60:25), perhaps the successor to the incense burner of Hacılar VI (fig. 55:14, 15); but none showed any traces of fire and their purpose thus remains unknown. 261

PAINTED WARE. Figures 61–3; plates LXVI–LXVII 275–9, 114–15

The painted pottery of Hacılar V is decorated in red on cream ground, with many variations in the colour of both paint and slip, for details of which the reader is referred to the catalogue. The pottery is burnished after painting.

The number of painted shapes (fig. 61) is restricted to bowls, cups and jars. In bowls, the lowest part of the vessel, below the carination, is coated in paint, while the upper part bears decoration in a single or double horizontal field (e.g. fig. 62). On some vessels the rim is left plain (fig. 62:5, 13), whereas on others the patterns continue to the base of the vessel (fig. 62:2); but the latter is uncommon.

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The bowls include miniatures (fig. 62:2, 5, 6, 9, 11) all with a carinated profile. 277
Fig. 62:20 may be a fragment of an oval cup, and a large double oval (fig. 62:7) has two pairs of lugs. Small oval cups are also found. Larger bowls are carinated with slightly concave rims (fig. 62:3, 12, 13, 15, 17–19, 21) or with an offset lip (fig. 62:1, 8, 11, 16). The first group usually has ornament in one, the second in two superimposed registers, but this arrangement is not always consistent. Painted jars are common (fig. 63). All have short, but marked necks or taller funnel necks (fig. 63:1, 3, or 5, 8, 10). Decoration is found on the neck and the upper part of the body. 279
Where the neck is left blank in the drawing (as in fig. 63:11, 13) no fragments are preserved. The lower part of the jar is either coated in paint (fig. 63:13) or left without decoration. The inside of the rim is sometimes painted (fig. 63:10), but more often left plain.

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Bowls. The design is either continued all around the bowl (fig. 62:1–4) or inter- 277
rupted by vertical or diagonal lines, forming panels (fig. 62:5, 7–14, 18). A few motifs hark back to level VI, for example the wavy bands (fig. 62:3), which are similar to those of fig. 59:4, 6, or the hatched rectangles of fig. 62:7 (cf. fig. 59:1, 11). Most others have no immediate ancestry at Hacılar and strongly suggest the influence of patterned textiles (e.g. fig. 62: 5, 8–14, and perhaps also fig. 62:2 and 4, which are simpler) and possibly basketry.

The 'fantastic style' on the other hand is represented by fig. 62: 13, 15, 16, 18, 19, 21, but it is easy to recognise bucrania in fig. 62:16, 19 and 18 (inverted) as well as human hands in fig. 62:20, and flying birds in fig. 62:6.

Jars. The decoration of jars is on the whole less sophisticated in level V, and the influence of Hacılar VI painting, which was concentrated on jars (and not bowls), is still notable. It is far more linear in style (e.g. fig. 63:3, 4, 8, 10) and comparable to the jars of fig. 59. Chevrons, already seen on the bowls (fig. 62:1–2, 4), are very

279 common on jars (fig. 63:2, 5, 6, 13, 15) and so are solid or open triangles (fig. 63:1, 5, 6, 7, 8, 11), or step patterns (fig. 63:14). Here again is a Hacılar VI parallel (fig. 59:10). Curving garlands are frequent (fig. 63:4, 5, 7, 8, 10, 11) and the first quatrefoils appear (figs. 63:11; cup), which in the previous phase were rendered in relief (fig. 57:13–14) but which hark back to Çatal Hüyük wall-paintings. The profiled rim (fig. 63:12) has parallels in Hacılar VI (fig. 55:16–18).

In short, the painting in Hacılar V is confined to a number of shapes, variants of carinated bowls, oval cups and jars with short or funnel necks. Links with Hacılar VI are obvious, but with Hacılar IV are even stronger. In all respects Hacılar V is transitional.

281–91, 116–17 Hacılar IV Pottery. Figures 64–9; plates LXVIII–LXIX

In Hacılar IV, painted pottery reaches its first great floruit with a wealth of patterns hitherto unsuspected. It now reaches about 35 per cent of the total production of pottery, but the number of shapes is limited. The monochrome ware continues the level V tradition and late neolithic features such as tubular lugs are now almost extinct.

281 Monochrome Ware. Figure 64

The unpainted pottery of Hacılar IV is red-brown or buff burnished ware, easily distinguishable from late neolithic ware. Few of the old features persist (fig. 64:30, 31); and animal-head handles are common (fig. 64:32, 34–6, 38–42). Even a horizontally placed handle appears (fig. 64:43). Relief ornament still lingers on in the form of a crude scorpion (fig. 64:32), and grooved 'eyes' (fig. 64:9–10) are an innovation. Incised lines along or across the rim (fig. 64:10, 11, 23) are also new and characteristic. Bowls on low pedestals with circular cut-outs appear (fig. 64:9) and the old knobbly feet, three or four to a bowl, reappear (fig. 64:8).

Miniature vessels are typical of Hacılar IV and subsequent levels, as they are in the painted ware; they were probably used for drinking (fig. 64:1–5, 12, 13, 15–22). Larger carinated bowls (fig. 64:5, 6, 14) are a novelty and again these shapes continue into levels III and IIA.

Rims are now clearly defined, and though the sharply everted rim, typical of Hacılar V, still exists (fig. 64:25, 26, 28) it is now much less common. More common is an almost vertical rim (fig. 64:15, 22, 27, 29, 30) as well as bead rims or grooved rims (fig. 64:9, 10, 11, 19, 23).

Jars now show proper necks (fig. 64:24, 31–3). Among the rarities are a fragment
273 of a rhyton with an animal head (fig. 64:37) and more 'altars' (fig. 60:27, 28) on round or cruciform feet, a feature paralleled in the Starčevo culture of Rumania and Hungary.

283–91, 116, 117 Painted Ware. Figures 65–9; plates LXVIII:1 and LXIX:5

The painted ware of Hacılar IV, which is much more plentiful than that of Hacılar V or III, leaves one in no doubt that by now it has triumphed over the monochrome.

Technically it is very close to the pottery of Hacılar V and III, and details of ware, paint, colour and burnishing can be found in the catalogue and need no further description. What is notable is the sophistication of ornament, which has now completely shed the primitive features of the late neolithic.

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The number of shapes remains restricted and these can be summarised as follows (fig. 65): 283

Small carinated bowls: figs. 66:1–10; 67:11, 18; 68:1, 2, 3; 69: 8, 9.

Medium-sized carinated bowls: figs. 66:11–21, 23–31; 67:1–10, 13–17, 19, 21; 68:4–22; 69: 1–5, 7, 10.

Bowl with flaring sides, with pedestal: fig. 68:25, 26.

Large bowls: fig. 68:28.

Deep bowl: fig. 68:21.

Oval cups: figs. 66:22; 68:23, 27, 29, 30; 69:1–4 (?), 6.

Double oval cup: fig. 67:12.

Globular jar with short neck: fig. 69:13.

Funnel-necked jar: fig. 69:11, 12, 14–16.

Hole-mouth jar: fig. 67:22.

One might note the large numbers of carinated bowls, the steady increase in the number of oval cups and the comparative rarity of other shapes. Bowls far outnumber jars and they will continue to do so in Hacılar III, IIA and IIB.

PATTERNS. Figures 66–9 285–91

Hacılar IV is rich in patterns incomparably more developed than those of the previous building-levels. Rare examples of archaic motifs are found in figs. 66:6, 10, 14; 67: 13, 14, 15, 18, 19; 68:10; 69:6, 12. Simple zigzag ornament continues into Hacılar IV and even later, stressing the continuity with earlier design (figs. 66:14; 67:19; 68:10).

Most common, however, are close-patterned textile ornaments (*passim*) of geometric type, arranged in two superimposed rows, richly diversified and always interesting. It would be tedious to describe each variation; the illustrations speak for themselves.

The 'fantastic style' is better represented than before and accounts for nearly one-fifth (20 per cent) of the patterns (figs. 66:9, 21-28; 67:8, 16, 22; 68:7, 18, 29, 30; 69:1–5, 13–16). Hands appear on bowls and jars (fig. 69:7–10, 11, 13), crosses or stylised flowers in fig. 67:11 and 68:16, 25, and figures of goddesses (so-called step-patterns) in profile in fig. 68:3, 5 and 8. Many of the 'fantastic' patterns are still recognisable as bulls or other animal heads with or without horns, and they occur either painted in red or cream or left in reserve (fig. 67:16, 22). Attention should perhaps be drawn to the presence of spiral ornament (fig. 68:24 and 69:8, cf. 13 and 14), where the ends of animal horns terminate in spirals. The complexities of the origin and interpretation of the fantastic style, and in particular the strange creations like fig. 68:30 or fig. 69:1–5 will be discussed below (p. 128).

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Hacılar III Pottery. Figures 70–4; plates LXIX, LXXXIII

Like the pottery of Hacılar V and IV that of level III is fragmentary, nor is there much of it. In every respect Hacılar III continues the general ceramic tradition and there are few innovations. The painted pottery increases to about 45 per cent, the 'fantastic style' to one-quarter of the designs in common use. Monochrome ware is less common.

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Monochrome Ware. Figure 70, lower

It is the new features first introduced in level IV that are most characteristic of Hacılar III: the miniature bowls, the larger carinated bowls, the bowls with plastic knobs, 'eyes' and incised rims. There are no more tubular lugs, no bowls with everted rims, no bowls with vertical rims characteristic of levels VI, V or IV, respectively.

In coloration Hacılar III prefers orange red, buff and light brown; the darker shades disappear. A high burnish is still characteristic and a white porcelain-like fabric is typical but not frequent.

Among the miniatures we now find shallow dishes (fig. 70:1–2), oval cups (fig. 70:3–4), some again with tubular feet (fig. 70:7, cf. 12) and carinated bowl (fig. 70:5–6). The cups (or jars) fig. 70:8–9 have no earlier counterparts in contrast to those shown in fig. 70:13, 14, which are early types.

Carinated bowls (fig. 70:10, 11) are common like the larger bowls (fig. 70:16–19). The bowls (fig. 70:20, 21) are a new shape and the coarse Bucak bowls (fig. 70: 22–4), named after a site south of Burdur where they are extremely common, revive earlier types, but their main range is from Hacılar III–IIB. An oval cup is shown in fig. 70:15.

Jars have handles in the form of animal heads (fig. 70:26–8) and one (fig. 70:26) has inlaid obsidian eyes, a novelty that is to gain ground at Hacılar in levels II and I (pl. CXI). Finally the lentoid jar of late neolithic origin is still there, the only vessel now with tubular lugs (fig. 70:25).

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295–301

Painted Ware. Figures 71–4

The increase in painted ware has already been mentioned. Typical of Hacılar III is the use of a very fine deep red paint on a dead-white slip and a good amount of blurred wet-burnished decoration (figs. 72:18, 20; 73:4). Bolder shapes make their appearance as in the monochrome ware and there is a general tendency towards the production of larger vessels, in contrast to the numerous miniatures characteristic of Hacılar V and IV. This is particularly notable among the bowls (figs. 72:32; 73: 16, 19, 20) and it continues into Hacılar IIA and B.

The shapes (fig. 71) are almost the same as before and consist mainly of small, medium and large carinated bowls (figs. 72; 73:1–5, 11–20; 74:1–9), oval cups (figs. 72:9; 73:3, 6–9), large double oval with two pairs of lugs (fig. 72:31) and jars with short wide neck (figs. 73:4; 74:11) or short funnel neck (fig. 74:12, 13, 18).

Among unusual shapes there is a carinated bowl on a ring base (fig. 73:13), a

red coated shallow dish (fig. 74:21) and a simple bowl (fig. 74:22) with cream exterior and red painted interior.

PATTERNS 297–301

Decorative patterns continue the close patterned textile tradition of Hacılar V and IV, but there is some bolder ornament, already noticeable in level IV, which covers less of the surface of the vessel (figs. 72:7, 29, 30; 73:7, 8, 20; 74:1–7, 9, 18). There also seems to be an increase in reserve patterns, known before but more common now. Among these are a number of vessels with square or round 'eyes' in reserve, giving the impression of faces, frequently, as in the oval cups, placed upside down so that the bowls must have been used as lids (figs. 72:10, 28; 74:1, 3, 4, 11). Figures of goddesses ('step pattern') are common (figs. 72:29; 73:20). Spirals also occur (fig. 72:22) and other creations of the fantastic style are well documented (figs. 72:5, 6, 8, 23, 30, 32; 73:1–4, 6, 8, 9, 12, 16). Hands are very common (figs. 73:1, 4, 5, 14; 74:5, 19; 78:28), and birds still appear (fig. 73:11). It is particularly 309
difficult to distinguish between pottery of Hacılar III and the immediately following phase of Hacılar IIA.

Hacılar IIA Pottery. Figures 75–89; plates LXX–LXXVII 303–29, 118–25

The amount of pottery from Hacılar IIA is nearly as large as all that from Hacılar V, IV and III together, and unlike the latter much of it is derived from deposits in houses and courtyards sealed by a disastrous fire that destroyed the eastern half of the settlement (areas P, O, R, and B, figs. 78–83). The western half of the village escaped the fire and in these areas (N and Q) there are no hermetically sealed deposits of Hacılar IIA pots, but only sherds in courtyards or beyond the walls (area N) or covered by the later IIB floor of the buildings of area Q (figs.85–9). As there were no buildings of Hacılar III–V in area Q, the chances of contamination are few; but the Hacılar II people dug pits for storage and rubbish disposal and some contamination is always possible wherever pits are dug, for the ancient inhabitants would like ourselves have found sherds whenever they dug into the mound. As it is virtually impossible to distinguish between individual painted sherds from Hacılar V, IV, III, IIA and those from IIB, I have, in order to satisfy over-critical colleagues, kept the pottery from these two areas separate in the publication. At a casual glance it may look as if the sherds from the western half (figs. 84–9) were even richer in decoration than those from the eastern quarters and this may derive from the fact that most of the richer houses, including a shrine, were situated in area Q. Taken together, figs. 78–89 give one an excellent idea of Hacılar pottery at the height of its development at the end of level IIA. They also show the extreme conservatism of the Hacılar potters, for it must be obvious that many shapes and patterns would be equally at home in Hacılar V–III, if not much earlier in Çatal Hüyük VIII, *c.* 6300 BC, where wall-paintings discovered in 1965 yield interesting confirmation in the form of identical textile patterns.[1]

[1] *AS*, XVI (1966) pl. XLIIb.

Hacılar IIA pottery is characterised by the very superior quality of its wares, a maximum richness of motifs, both geometric and fantastic, and an increase in reserve patterns, oval cups, oval bowls and large carinated bowls. In its geometric ornament it preserves the best of the old tradition to which is now added a wealth of fantastic ornament. The latter is also typical of Hacılar IIB, the next period, but there it is no longer accompanied by the fine geometric textile patterns. The painted pottery forms roughly 55 per cent of the total bulk, about a quarter of which is decorated in the 'fantastic' style. The monochrome wares have been reduced to the second rank.

303–5, 118–19 MONOCHROME WARE. Figures 75–6; plates LXX–LXXI

Orange buff, light brown, and some red are the prevailing colours of the burnished monochrome wares of Hacılar IIA. Many of the jars have a leathery brown, unslipped surface. The burnishing is often brilliant.

The tendency to produce more and more carinated bowls, which started in Hacılar III, continued during Hacılar IIA, and some of these still have four stumpy feet and a groove on the rim (fig. 75:34, 35; pl. LXX). Others are provided with low pedestal or ring bases with cut-out 'windows' (fig. 90:32, 33), incision, plastic bars, frequently grooved 'eyes', etc. (fig. 90:3, 33), the last representatives of a group of vessels which range from Hacılar IV–IIA.

Among carinated bowls, a somewhat exaggerated profile is not uncommon (fig. 75: 1, 4, 5, 8), and some now have dimple bases (fig. 75:38). Other bowls are less distinct (fig. 75:2, 6, 7) and remind one of earlier types. One bowl (fig. 75:9) has a spout, probably for pouring libations. Very large bowl shapes now also occur (fig. 75:14).

Jars are better represented in Hacılar IIA than in previous building-levels. Many are fairly coarse and small with two lugs or handles in the form of animal heads (fig. 75:10–17, 19–21). Others are larger and have a more rounded (fig. 75:22) or sharply carinated (fig. 75:18) profile. The latter vessel has a relief bar and two small lugs which give it the appearance of a face (pl. LXX:1). A series of large jars show little variation except in the shape of the handles (fig. 75:23–25 and fig. 76:1–6). Most of these are a leathery brown colour.

307–29 PAINTED WARE. Figures 77–89

Like the monochrome ware, the painted pottery of Hacılar IIA continues the earlier tradition and marks the fullest development of the innovations of Hacılar III: brighter colours, larger shapes, greater use of reserve patterns, and a fully developed 'fantastic' style.

307 SHAPES. Figure 77

Miniatures (fig. 78:1–5)

Small carinated bowls (figs. 78:6–23, 25, 26; 84:8, 10, 20; 85:1–30; 87:1, 2). Some of these have ring bases (fig. 78:24, 29) or have three or four stumpy feet (figs. 78:19; 85:33).

Medium-size carinated bowls (figs. 79:1–17; 80:1–6; 84:1–4, 6, 7, 9, 11, 13–19,

21; 85:31–4; 86:9–39; 87). Some have three feet (figs. 79:15; 84:14), others have ring-bases (fig. 79:1, 14) and some have dimple bases (fig. 79:16). A deep bowl (fig. 79:9) is unusual.

Large carinated bowls. These are now common (figs. 80:7–11; 88:1–6, 8, 13). See col. pl. I, facing p. 99, in this volume.

Oval cups. These reach their widest development (figs. 81:1, 3, 4, 6–9; 84:12; 85:40; 87:3–8; 88:7, 9–11; 89:12).

Double oval bowls. These occur in several forms: fig. 81:2 has a pair of tubular lugs on either side, the most archaic type; fig. 78:30 and fig. 81: 10 and 13 are deep vessels, and fig. 81:2, 5, 11 and 12 is by far the most common type in Hacılar IIA.

Jars. These are more plentiful than in the lower levels, except, of course, in level VI. There are small short-necked jars (figs. 78:27; 83:2, 3; 89:6–10, 14).

There are lentoid bottles (figs. 79:5; 89:5), small versions of the large water jars known since Hacılar VII.

Few of the large jars have wide open mouths (fig. 82:2) and most are provided with funnel necks (figs. 82:1, 2, 4–7; 83:4–6; 89:11).

Among miscellaneous vessels there is a ring vase or kernos (fig. 89:13) and a fragment of a cup in the shape of a woman's head (fig. 89:16), both from the shrine in area Q.

PATTERNS. Figures 78–89 309–29

Decorative patterns reach their climax of diversity in Hacılar IIA, and they can easily be divided into several classes:

A. close patterned textile ornament (like Hacılar V–III): figs. 78:11–15, 17, 18, 21, 22, 26; 79:1–11; 80:7, 8, 10; 81:3, 4, 7; 85:11–17; 86:1–24; 88:1–6.

B. traditional up and down patterns; chevrons and filled triangle step patterns and lines known since Hacılar V: figs. 78:4, 6–10, 16, 30; 81:12; 82:3, 4, 7; 83:5, 6; 85:4, 6, 8–10, 21–5, 33, 34; 87:12–15.

C. bolder patterns often in reserve, common since Hacılar III:figs. 79:12–17; 80:9, 11; 82:5, 6; 85:1–3, 7, 35–41; 87:16–26.

D. 'fantastic' style patterns, including

1. hands and arms: figs. 78:7, 19; 81:6; 83:1, 2, 4; 84:8; 85:26–32; 87:6; 88:7; 89:15
2. crosses: figs. 78:29; 79:15; 80:4, 6, 11; 83:1; 88:10
3. spirals: figs. 78:20; 81:13; 85:38; 86:4; 89:7
4. birds: figs. 87:1, 4; 88:11; 89:5
5. goat or ibex: fig. 87:8
6. animal heads, mainly bucrania: figs. 78:3; 80:1, 2, 5; 81:5, 11; 82:1; 83:3; 84:13–15; 89:8, 11, 14
7. complex fantastic patterns, including goddesses (fig. 84): figs. 78:23; 81:6, 8, 9, 11, 13; 82:2; 87:2, 3, 5–7; 88:8, 9, 13; 89:1–4, 9

These will be discussed in the section on patterns, p 120ff.

331–49, 126–34

Hacılar IIB Pottery. Figures 90–9; plates LXXVIII–LXXXVI

The destruction by fire of half the settlement of Hacılar IIA led to a decrease in the population of the village, estimated now at about 50–75 souls, but two of the three potters' workshops remained in production. The amount of pottery recovered from the burnt ruins of Hacılar IIB is about two-thirds of that of Hacılar IIA, the previous settlement. Painted pottery forms about 60 per cent of all pottery found, and the amount of wares decorated in the fantastic style increases to between one-third and a half. This is the result of the great decrease in the earlier geometric textile style, which has almost disappeared. In the meantime the monochrome ware has developed a number of new shapes, and there is more variety than before.

293, 331–3, 126

Monochrome Ware. Figures 70 (top), 90, 91; plate LXXVIII

There are numerous miniature bowls in Hacılar IIB (fig. 90:1–5) used as paint cups

341 by the potters. Other small vessels (fig. 95:6, 7) have small feet or a solid pedestal, and a very small bowl, no larger than a thimble, has four minute feet (fig. 90:10). Scoops also are common (fig. 90:9–11).

Small bowls with carinated profiles (fig. 90:12) are somewhat larger, and may have flaring sides (fig. 90:12). There are also shallow cups (fig. 90:14), shallow dishes (fig. 90:16–18) and beakers (fig. 90:19, 20, 25). A series of larger shallow bowls, probably derived from the 'Bucak bowl', is new (fig. 90:22, 24, 30). Other simple profiled bowls (fig. 90:21, 23, 27) have parallels in contemporary vessels in marble

168 (fig. 103:7, pl. CXIV). Other large bowls have a carination below a slightly outbent rim (fig. 90:28, 29). None of these vessels seem to have been very common and in frequency of occurrence they yield second place to the medium-size bowls, carinated or with flaring sides, set on a ring base (fig. 90:31 flaring sides; fig. 90:36, 42 slightly and fig. 90:37, 41, 43 heavily carinated). Others have flat or sunk bases. A single

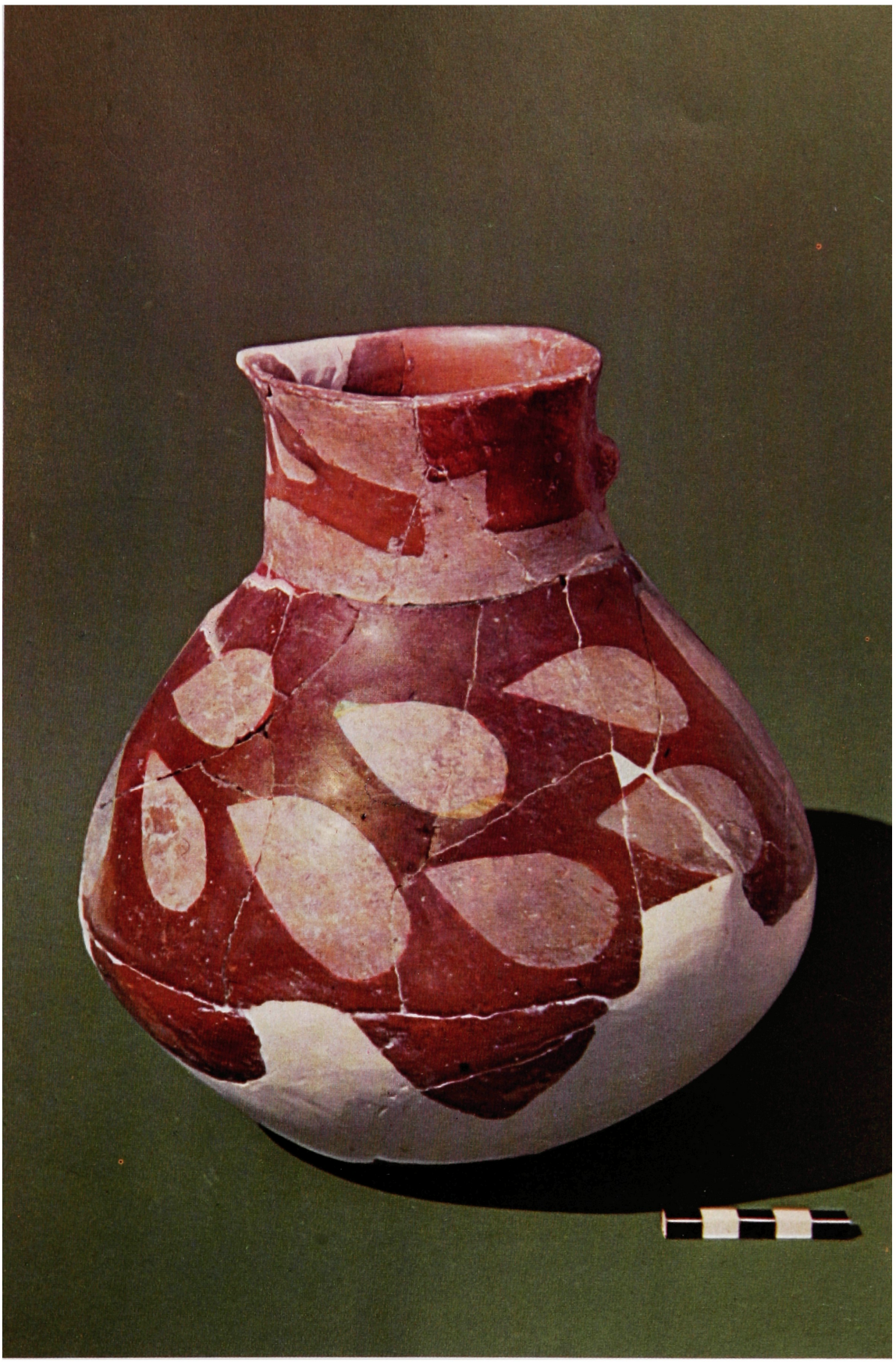
293 bowl with flaring rim (fig. 70:10) may be extrusive from the lower levels. None of these bowls is provided with lugs.

A variant on these bowls is a large or small vessel with two handles (fig. 91:4,

119 7–9, 11–13 and pl. LXXI:3). Some of the larger ones may have been used as cooking pots, but none showed any signs of having been exposed to the fire. Traces of soot, however, may have disappeared in the heat of the fire that destroyed the settlement.

293 Oval cups are not very common in monochrome ware (fig. 70:11). The jars of Hacılar IIB are like those of the previous building-level, with rounded profiles (figs. 70:1; 91:1, 6), biconically shaped (fig. 91:2, 3, 5), or boldly carinated (figs. 70:2, 3; 91:15, 16). Most of these jars are provided with a pair of handles in the form of stylised animal heads, but others have solid or vertically perforated lugs. Lentoid water jars are still found (fig. 91:17) and fragments of a double one (fig. 91:10) and a miniature (fig. 70:7) survive.

Decoration in relief is sometimes found. A globular jar (fig. 70:6) has four applied



11. Hacılar IIB. Painted jug (cf. vol.2, pl.LXXXV:4 and fig.98:1)

crescents, each vertically perforated at the top. Rhytons, that is jars with animal heads for pouring libations, occur but remain infrequent (fig. 70:4, 5), and the first of these has three solid semicircles in relief above the carination. A phallus (fig. 70:9) may have been part of another rhyton. A box on four feet (fig. 70:12) belongs to the same group of cult vessels. For painted rhytons see fig. 99:2 and pl. LXXXIV.

PAINTED WARE. Figures 92–9; plates LXXIX–LXXXVI 335–49 127–34

In spite of the destruction at the end of Hacılar IIA, the technical ability, brilliant finish, bright colours of the Hacılar IIB pottery remained as high as before and the potters' workshops as well as the north-west quarter of the settlement have yielded many splendid pieces. Such changes as there are stand out in the predominance of the oval cups and bowls (figs. 93, 94), the large bowls (fig. 97) and a fine series of jugs (figs. 98, 99). Miniatures are rare, but a whole series (fig. 95:1–10) was found on one of the latest floors. They are rather crudely painted. The carinated bowls (fig. 95:11, 15–30 and fig. 96:1–19) show little variation in shape, and are with two exceptions (fig. 96:5 and 11) very well made.

SHAPES (Figure 92) 335

Oval cups (figs. 93; 94:1–4, 6–8, 11; 95:12, 13, possibly 14 and 23).

Double oval bowls (fig. 94:5, 9, 10).

Small bowls (fig. 95:1–10).

Carinated bowls (figs. 95:11, 15–30; 96:1–19) including a number of deep ones (fig. 96:8, 10, 18, 19).

Large carinated bowls (fig. 97), including deep ones (fig. 97:6, 7, 9, 10).

Jars with funnel necks (figs. 98:2–8; 99:5–10 including oval ones, nos. 6 and 9).

Jars with short, wide necks (fig. 99:1, 3, 4).

Jar with oval neck (fig. 98:1). See col. pl. II, facing p. 118, in this volume.

Jar with animal head, perforated for pouring (rhyton), (fig. 99:2).

The number of shapes of the painted ware of Hacılar IIB is fairly restricted, but the decorative motifs are still extremely rich.

PATTERNS. Figures 93–9 337–49

Characteristic of level IIB is the decline of the old traditional patterns: the textile ones (fig. 96:3, 6, 8–11, 13 and 18) and the up and down chevrons, step patterns and parallel lines (figs. 94:9; 96:1, 2, 5, 12, 15, 17; 98:7; 99:5, 6).

On the positive side the bold style with many reserve patterns, typical of Hacılar III and IIA now reaches its fullest development (e.g. figs. 94:6; 95:12; 96:19; 97:9; 99:8, 9), often in combination with the 'fantastic' style, which has also reached its peak (most vessels in figs. 93–5, 97–9) and which runs riot in such creations as figs. 93:8, 97:6 and 8. Among easily recognisable motifs there are still:

hands and *arms:* figs. 93:5; 95:6, 7, 21a; 96:6, 16; 97:1

crosses: figs. 98:4; 99:4

animal heads: figs. 94:8; 95:19, 26, 32; 98:3, 6; 99:2

'*eyes*' in reserve: figs. 93:1, 16; 96:14; 97:8, 10

goddesses ('step patterns'): figs. 95:16, 24, 27, 29; 96:4, 7

Relief decoration is very sparingly used: there are crescents on either side of the oval bowl (fig. 94:5), two circles applied to the large bowls (fig. 97:8 and 10), and a spout in the form of an animal head in the rhyton (fig. 99:2). Small lugs are found on most ovals and the handles on jars take the familiar form of a stylised animal head. None of the bowls have any lugs or handles; their bases are nearly all flat, ring-bases and low pedestals having disappeared.

Although this represents the end of the local development of painted pottery since Hacılar IX, the painted wares were by no means decadent when the settlement was destroyed abruptly *c.* 5250 BC, probably by the people who introduced the somewhat different Hacılar I culture.

In previous chapter, p. 25 ff., the architectural lay-out of Hacılar II has been fully described as well as the indications for different quarters provided by the pottery finds. Among these the potters' workshops were of the greatest interest and their prominent position in the centre of the settlement indicates the importance attached to this craft at the time. Besides pottery, statuettes in clay were made in these same workshops, and with the querns for grinding red and yellow ochre, the pounders and pestles, the palettes and paint cups, we found numerous modelling tools in polished bone. Making pottery and modelling clay, using the same materials, are closely connected art forms; vessels in the form of human figures or animals combine the two techniques. Whether the potters of Hacılar worked for local consumption only or supplied a wider market is a question that cannot be answered without excavation on other sites of the period.

Styles, Patterns, and Decorative Motifs. Hacılar IX–IIB

In the discussion of the pottery development from Hacılar IX–IIB, a period of about five hundred years, many references have been made to the various styles of decoration. If we are to understand how painted pottery came into being in Anatolia, we must briefly summarise the events that took place during the thousand years or so that preceded the foundation of Hacılar IX, *c.* 5750 BC.

c. 7000

Aceramic period (non-pottery)

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c. 6500

Çatal Hüyük (early neolithic). Levels XIII (and earlier)–VIII

Cream burnished pottery: heavy with simple shapes; cream and light grey, some red wash; straws and grits.

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c. 6200

Çatal Hüyük. Levels VII–II

Dark burnished pottery: thin, grit-tempered; black, dark grey, brown, redbrown, red.

From Çatal Hüyük V onwards, lighter coloured wares; red, orange, buff on finer wares.

From Çatal Hüyük III onwards, some coarse red on cream painted ware.

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c. 5750

Hacılar (late neolithic). Levels IX–VI

Light burnished pottery: cream and light grey in IX–VIII; red, buff, light brown in VII–VI. More than 90 per cent monochrome. Some in relief. Some linear red on cream painted, less white on red.

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c. 5600

Hacılar (early chalcolithic). Levels V–IIB

Steady increase of red on cream painted pottery at expense of red, brown and buff monochrome ware, (20 per cent in V; 35 per cent in IV, 45 per cent in III, 55 per cent in IIA and 60 per cent in IIB). Two main styles, linear and solid geometric and 'fantastic' styles.

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c. 5250 – *c.* 5000

Hacılar I

New painted wares (70 per cent), mainly red on cream, with a little white on red. Red or cream monochrome ware. Painted style linear.

It is not really essential to our inquiry whether the Hacılar IX pottery was directly descended from that of Çatal Hüyük or whether it was derived from the Kızılkaya culture, a western variant. What is significant is that in a few centuries before the foundation of Hacılar the shrines of Çatal Hüyük were richly and consistently adorned with sophisticated reliefs in plaster and splendid wall-paintings, two forms of decoration which together with elementary linear patterns on pottery definitely influenced the development of late neolithic pottery at Hacılar. With the disappearance of wall-paintings and plaster reliefs, selected elements were transferred to the pottery, such as animal heads (already in Çatal Hüyük III and II) and animal figures (Hacılar VI). With the development of painting in Hacılar V, textile patterns, common at Çatal Hüyük since level IX in wall-paintings, are transferred to the pottery and the animal reliefs or heads are transformed into painted motifs, which are frequently difficult to recognise. Human hands, arms, etc., show an unbroken development from Çatal Hüyük into Hacılar I. The cup in the form of a human head from Hacılar VI develops into the painted oval cups of Hacılar IV–IIB and in Hacılar I there is a splendid series of anthropomorphic vessels. Zoomorphic vessels also reappear, but perhaps they were never quite lacking, as a few rhyton heads from levels IV and II indicate.

Stylistic Sequence at Hacilar

In Hacılar VI and in Hacılar I we are dealing with very distinctive linear styles, the one inept and simple, the second highly sophisticated. The period in between, that is Hacılar V–IIB, is characterised by at least four different styles, which overlap.

Table Showing Stylistic Sequence of Pottery

IX–VI	A. LINEAR STYLE				RELIEF STYLE *animals, theriomorphs, human heads*
V	rare	B. GEOMETRIC (*linear*) common		C. GEOMETRIC TEXTILE common	D. FANTASTIC rare (1 to 6)
IV	(extinct)	less common		most common	more common (1 to 5)
III		rare	E. BOLD STYLE (*reserve*) present	very common	common (1 to 4)
IIA		rare	common	common	common (1 to 4)
IIB		nearly extinct	very common	nearly extinct	most common ($\frac{1}{2}$ to $\frac{1}{3}$)
I	F. LINEAR STYLE	?	uncommon	(extinct)	(extinct)

The most distinctive of these are the close-patterned textile style and the 'fantastic' style which range from Hacılar V–IIB respectively, the former almost disappearing in Hacılar IIB, in which period the latter, rare in level V, reaches its fullest development. The two others are a geometric style with chevrons, triangles, etc. (common from Hacılar V–IIA), and a bolder style, making great use of reserve ornament, which gradually supplants the other in levels III–IIB, but without ousting it completely (see table opposite).

Human, Animal, and Plant Motifs on Hacilar V–IIB Pottery. Figures 100–7 350–6

Motifs derived from nature are considerably more common in the painted pottery of Hacılar V–IIB than would at first appear, but they are invariably stylised, sometimes rendered in reserve technique, and frequently very hard to recognise, especially when fragmentary.

Among these motifs some are easy to recognise with the help of earlier material from Çatal Hüyük: the 'flowers', reduced to 'crosses' (fig. 100), the hands, arms and eyes representing human forms according to the principle of *pars pro toto*, in the same way as the animal heads stand for the entire form. Hands and eyes already suggest a symbolic attempt to ward off the 'evil eye', a method still widespread in Near Eastern and Mediterranean countries and as long established as the use of the blue bead as an amulet.

One might surmise that the prevalence of textile patterns, on wall-paintings at Çatal Hüyük and on pottery at Hacılar, served a similar purpose, for cloth has a natural protective function from the cradle to the grave. The following motifs can be distinguished:

VEGETABLE	PARALLELS OR PREDECESSORS	
flowers (crosses) (fig. 100)	Hacılar VI (relief) (fig. 57:13, 14) Çatal H.IV (seal) Çatal H.pre-X (Maltese cross) Çatal H.VI, III (wall-paintings)	350
HUMAN		
Hands and arms (fig. 101)	Hacılar VI (relief) (fig. 56)	350
1. bent upper and lower arm and hand	Çatal H.IV (seals)	
2. lower arm and hand	Çatal H.VIa, VIb, VII (wall-paintings)	
3. hand with three or four fingers		
4. stylised hands like flying birds	cf. Upper Palaeolithic (Gargas, Castillo, etc.)	
Eyes (fig. 102)		
1. naturalistic almond-shaped, sometimes with pupil	Çatal H.VIII (Shrine E.31)	351
2. lozenge shaped, sometimes half filled		
Heads (fig. 102)	Hacılar VI cup (fig. 57:3) pl. LXIII	
oval cups in the form of a human head with painted details		

352	*Figures* (Goddesses) (fig. 103)	Çatal H. VII–VI plaster reliefs
	painted in profile, single	
	idem, with smaller figure (child)	
	two figures	
	frontal view	
	accompanied by animals	
	head and uplifted arms	
	Row of figures with linked hands (fig. 103)	Çatal H.V wall-paintings
	ANIMALS	
353	*Heads* (fig. 104)	Çatal H.X–II bucrania, etc.
	1. bucranium (bull's head)	Hacılar VI (relief)
	2. ram's head	
	3. deer's head	
	4. Onager's head (?)	
	5. bear's head	
354–5	*Birds*	cf. Çatal H.IX–VII vultures, V cranes (wall-paintings)
	swan? (figs. 105:32; 106:16, 22)	
	birds of prey (fig. 106:33)	
	storks? or cranes? (fig. 105:3)	
	birds (figs. 105:8, 9; 106:40)	
	Snakes (fig. 105:7, 22? 28–30, 33–5)	
	Boar (fig. 106:37)	Çatal H.V (paintings)
	Dog (?) (fig. 105:17)	Çatal H.V, III (paintings)
	Ibex (fig. 106:25)	Çatal H.VII (paintings)
	Deer (fig. 105:19; 106: 9,10)	Çatal H.III, V, VII
	Leopards (figs. 105, 106 *passim*)	Çatal H.VI, VII, VIII (reliefs)

FLOWERS

It is a safe assumption that man's interest in nature and plant life is part of his biological heritage. Unfortunately, hardly anything is known about the vegetable diet of palaeolithic man, even in the sophisticated later stages of the upper palaeolithic. This aspect of man's behaviour has been sadly neglected and we can only presume that he did not only live on meat, but collected fruits, berries and wild vegetables as well. Some of these should have left traces. The unique achievement of the post-glacial Near East was the so-called neolithic revolution, or rather evolution in which man turned gradually towards a more balanced diet, including many new food plants such as wheat and barley, peas and lentils, gathering them first and finally growing them. By this momentous change from food-gathering to food production, in which the domestication of certain food plants and certain animals went side by side, he laid the basis for all civilisation. By 7000 BC, agriculture was already well under way and it is the deposits of aceramic Hacılar V that have yielded the earliest carbonised food plants yet found. Nevertheless, hunting continued to play a most important

part in the economy of the early neolithic and it is only towards the end of the period, *c.* 5600 BC, or in rough terms the middle of the sixth millennium, that agriculture dominates food production. One might therefore have expected a greater number of plant motifs on the pottery than are actually found, but at Hacılar, as pointed out, decorative motifs are strongly traditional and seem to derive from the wall-paintings of the previous period at Çatal Hüyük. Neither at Çatal Hüyük, nor at Hacılar, Çatal West or Can Hasan is there a single representation of an ear of corn, and thousands of years are to pass before they appear in the realistic art of classical times. Instead we have a number of symbols: flowers and bees or insects in a wall-painting at Çatal Hüyük VI, following similar stylised four-petalled flowers in paintings even earlier than level X (*c.* 6400 BC) or in level VII (*c.* 6200 BC). Similar motifs reappear in clay seals in Çatal IV and in more paintings in levels VI and III, or painted on the dress (?) of a goddess statue in Çatal Hüyük VI. It would be naïve to pretend that such recurring flower motifs were merely decorative in function; like many other early motifs, such as breasts and horns, they almost certainly had a symbolic meaning probably beginning in the neolithic period.

In later times we have the same association of plants and flowers with deities and festivals, ritual and magic. The Hittite Spring festival is that of the *Antahsum* plant, now thought to be the Saffron Crocus (*C. sativus* L.), lilac-purple in flower, the source of a famous yellow dye still used in Anatolia to colour rice at weddings on account of its aphrodisiac properties. A Saffron gatherer (male or monkey?) was the subject of a wall-painting at Knossos and in classical Greece we hear of the Anthestheria feast and deities with plant names such as Narcissus, Iris and Hyacinthus. There are Adonis flowers (Pheasant's Eye), St Brigid anemones and Madonna Lilies to mention but a few. In mythology and folklore we have Daphne (Bay), the plant of youth in the Gilgamesh epic, the poppies held by Minoan goddesses, white heather, Lily of the Valley, *antahsum* and four-leaf clover for luck, Rowan, Ivy, and Ruin Weed (*Peganum Harmala*) to ward off evil, roses for love, other flowers for mourning and the dead, etc.

Exactly which flowers were chosen in neolithic Anatolia as symbols cannot be determined until more naturalistic renderings of flowers are found, or actual seeds unearthed. The exact nature of the symbolism cannot be established either, but in fertility cults such as those of the neolithic with its agrarian rites, the importance of the seasons for agriculture, the parallels between the life of humans, plants and animals, cannot have remained a mystery for long. In the discussions of plant domestication, the uses of plants other than as food are frequently ignored. From the early neolithic period of Çatal Hüyük they yielded vegetable dyes and provided artistic inspiration, and the medicinal and aphrodisiac properties of certain plants were probably recognised. Crucifers, acorns, and pistachio provided vegetable oils; wines were made from Hackberry fruits and the importance of alcoholic drink in societies without any other sedatives is self-evident. The association of bees, the only source of a sugar, with flowers was obviously known at Çatal Hüyük, if not before. Flowers were also buried with the dead in Çatal Hüyük VI.

HANDS AND ARMS

If elements of plant life are first recognised in the art of early neolithic Anatolia, representations of arms and hands hark back to the Aurignacian at the beginning of the upper palaeolithic (at least in Western Europe). At Çatal Hüyük, hands with all five fingers are the only form found, but at Hacılar this form is absent and we either have the arm and hand, first in relief (level VI) then in painting, or hands with three or four fingers. The thumb is not shown. This suggests the origin of the outstretched hand with thumb (and second finger) bent back, which is the gesture still used throughout the Mediterranean against the 'evil eye'. If so, this is the first example of
350 it, to my knowledge. The long arm plus hand (fig. 101) has upper palaeolithic parallels in Spain.

EYES

The 'all-seeing eye' is another common motif in early pottery throughout the Near East and is closely linked with statuettes, figurines, stone slabs of Hacılar VI and later 'goddesses'. The earliest examples in Anatolia come from Shrine E.VIII, 31 at Çatal Hüyük,[1] *c.* 6300 BC.

351 A number of bowls (fig. 102) seem to show two eyes, drawn more or less schematically, and these are in turn related to the head-cups.

OVAL CUPS IN THE FORM OF HUMAN HEADS

At the time of the discovery of Hacılar the relationship between the cup in the form
265, III of a naturalistically modelled human head from Hacılar VI (fig. 57:3 and pl. LXIII) and the later ubiquitous oval cups was not realised. The link is provided by a cup which, in addition to the typical painted ornament in the fantastic style, is provided with two obsidian eyes. In this respect it is a unique document. Its date is probably Hacılar II, or II–IV as its widest range. Such cups are unknown in Hacılar I, which is, on the other hand, the period in which obsidian inlay reached its highest development.

351 When turned round (fig. 102) a number of the oval cups, but certainly not all, still preserve some features that can be associated with a woman's head. The nose has gone, unless one imagines the head cut off below the nose which then forms the pointed spout. The hair done up in the form of a bun at the back of the head is turned into a small lug, present on all oval cups. The nose may be indicated by a vertical bar, which covers the sharp ridge in front, or by a bar in reserve on those red cups on which almond shaped eyes are still naturalistically rendered. On most, the lower part of the vessel, painted red, shows the hair on top of the head and at the back, whereas the face itself is cream coloured but for the nose. Locks of hair are indicated by drop patterns in reserve, either in a curving band or in a field at the back of the head. In most cases it is the eyes which have become transformed into weird patterns, as fantastic as the painter could make them; but it is here that the cup with obsidian eyes provides the clue to identification. Evidently the eyes of these women were heavily made up. In other cases one might even suggest that a bandage
351 was worn over the eyes (fig. 102, second row, right).

Stylisation played more and more havoc with the original design. The great

[1] *AS*, XVI (1966) pl. XLVIIa.

number of these cups in Hacılar II might suggest a particular (and ritual?) use for this sort of cup similar to that of the anthropomorphic effigy vases of Hacılar I. Unlike the latter the cups do not appear to be common in graves.

HUMAN FIGURES. Figure 103 352

Like the heads on the cups, the representations of human beings in Hacılar V–IIB are all female. Very characteristic is a figure of a seated woman seen from the side, the so-called step-pattern. The figures usually show head, breast and legs as three consecutive steps but there are more elaborate forms in which even the feet form a further step. The figure usually sits upright, like the statuettes, but in some cases she leans backward, a position only common in the subsequent Hacılar I period. Interior details are most often schematised, for example, to a lozenge, but a number show the arms as a diagonal or curved line in reserve and occasionally the eye is shown. In some figures the woman motif is broken up into incomprehensible shapes (fig. 103 middle, third row). In a number of others, the figure of a seated woman is shown *en face*, with breasts, arms and line of the legs showing in reserve. Others are solid; still others show the breaking up of this motif (fig. 103:13, 14).

These seated goddesses occur singly or in pairs, the one behind the other or facing each other, usually in combination with a stylised animal head in between (fig. 103:20–2). They can be accompanied by smaller solid figures, perhaps children (fig. 103:7). Another pair are seated with their backs to two triangles, which may stand for mountains or hills (fig. 103:23).

The most interesting groups are those (fig. 103:9, 12–14) in which the seated goddess is flanked by a pair of strange creations in the 'fantastic style', which, on analogy with the Çatal Hüyük reliefs, we are inclined to designate as stylised leopards in a rampant position. These leopard figures occur in large numbers on the Hacılar pottery, and their association with the goddess leaves one little choice of identification: they cannot be bulls, rams, goats or stags, for they have long tails and are able to raise themselves on their hind legs, like heraldic lions.

Unusual and still unique is a group of three headless figures holding hands (fig. 103:17), of which the central figure is larger and has a pronounced stomach. These figures are in negative reserve pattern whereas the goddesses and their attendant animals are invariably painted in positive, red on cream.

ANIMAL HEADS. Figure 104 353

Among the animal heads, those of bulls outnumber all others. They appear in relief in Hacılar VI and in positive painting from V–IIB (fig. 104). The bucrania are easily recognisable by their great horns, however much the head may have been deformed by stylisation.

Much less common are the heads of rams, identifiable by their spirally curved horns. Heavily serrated 'heads' without bulls' horns may represent stags, but these are not common.

Much less frequent are animal heads in reserve painting and here identification is often difficult, except where enormous, curved horns obviously indicate rams. With some diffidence one could recognise an onager or wild ass by its prominent ears, a

stag's head by its antlers and some sheep or goat by their horizontally placed horns. None of these reserve paintings are recognisable as bulls, but there may be one or two boars with pointed snouts.

Animal Pictures

To interpret the many weird creations of the 'fantastic style' on the Hacılar V–IIB pottery is well nigh impossible without comparative material, and in our preliminary reports we have therefore not gone into this problem. However, we can no longer ignore this evidence and any interpretation, however bold and subjective, is better than none. Our first consideration must be whether it is the red paint or the cream background that makes the pattern, in other words whether it is positive or negative. There are a number of figures, which can be recognised without any difficulty as birds, an ibex, a dog, boar or snake. The elaborately made-up eyes on the oval head cups again suggest positive patterns. However, one cannot be certain that this is always the case and ideally one should reverse all the patterns and see whether their negatives make better sense. With one or two exceptions the results are nightmarish creations of long griffon or weevil-beaked 'worms and embryos', endlessly pecking
356 away (fig. 107). Repulsive or not, modern aesthetics are no guide to early painting and one must seriously consider the possibility that creatures looking like stylised vultures, weevils or larvae may have found a place in the Hacılar repertoire of painting. In reverse, fig. 107, centre, shows a row of 'human' heads and upper parts of
352 bodies with arms linked, a pattern known also from fig. 103:17. The reverse vulture-like creature (fig. 107, bottom left) occurs in positive painting on an oval bowl
354 (fig. 105:22). Prototypes for the 'fantastic style' are found as early as Çatal Hüyük
357 VIII (*c.* 63rd century BC), and these include human figures in reserve (fig. 108a–c) as well as positive designs in the same painting. It seems reasonable, therefore, to examine the Hacılar painting for similar practices.

As already pointed out, certain motifs only occur in positive red painting, for example the bulls' heads, snakes, birds, and the ubiquitous creature in which we see a leopard. Others, such as the 'vultures', 'weevils', 'embryo-like creatures or larvae' occur only in negative white reserve. Headless bodies, or heads and torsos with linked hands are in reserve, goddess figures are positive. The antithesis between red 'leopard' and white 'vulture – weevil', etc., which occurs over and over again on vessels of all sorts must have some symbolic significance both in pattern and in colour. Here the evidence of Çatal Hüyük sheds valuable light, with its red ochre burials, its red protective panels contrasting with the white figures on the platform (a sort of tombstone) of the priestess's burial in shrine E.VIII.31, or the dead man's head and other white figures in the shrine of E.IV.1. Evidently the colour symbolism is red for life and white for death. At Çatal Hüyük one has the same almost macabre sense of symbolism that puts scorpions on drinking vessels or shapes them in the form of a woman's head at Hacılar. Full breasts hide the skulls of Griffon vulture, fox, weasel or the deadly tusks and lower jaw of wild boars at Çatal Hüyük; life versus death is expressed in a variety of ways and the most impressive wall-paintings show enormous vultures pecking at the corpses of headless human beings, and

skeletons are occasionally provided with boars' jaws or are wrapped in matting containing numerous skulls and leg bones of common mice.

The choise of these animals is significant: all are scavengers or pests in contrast to the bull, ram, deer, dog and leopard which were useful as a great source of food, skin, bone and other materials needed in neolithic economy. If the interpretation of the Hacılar animal figures is even partly correct, a strong continuity can be shown. 'Leopards', deer, bulls' heads, dogs, snakes and birds (swan or duck, falcon?) are positive, red and useful, but the 'vultures', 'weevils', etc., are negative, white and harmful. One might note *en passant* that the boar has changed its rôle from being a wild and dangerous animal at Çatal Hüyük, a symbol of death and excluded from the menu, to a useful animal, shown in relief vases (Hacılar VI) or painted in positive red on Hacılar II pottery, and definitely part of the Hacılar diet. This change of attitude towards the pig is probably the result of domestication, but this unfortunately cannot be proved at Hacılar as it can be at Can Hasan.

A further point of interest is that the positive red pattern is most often painted on the pot used the right way up and only when inverted does the negative pattern reveal its significance. This suggests an equation between fullness or abundance with the forces of life, and emptiness (that is, lack of food) with the forces of death. In other words, all the negative, frightening and unpleasant aspects of the 'fantastic style' of Hacılar V–IIB are shown only when the food pots are inverted and empty, and hunger and discontent stalks the land. The 'up and down' symbolism associated with food vessels requires a careful study, but one example of recent date may be quoted: the over-turning of the food-cauldrons by the Janissaries when discontented.

There is insufficient evidence to suggest that the more sophisticated creations of the 'fantastic style' occurred on any scale before Hacılar III, but at Hacılar it is always most unsafe to argue from negative evidence. One must also ask how such motifs could have survived from Çatal Hüyük VIII, some seven to eight hundred years before they turn up at Hacılar, and the answer is probably the same as in the case of the close-patterned geometric motifs: on textiles, kilims and appliqué felt-work. The 'fantastic style' motifs would have been highly effective in appliqué felt or on kilims, where negative and positive patterns are very much at home, and are still described by the makers today as ram's head, wolf's tooth, wolf's track, scorpion, goat, hands, etc.

In view of the close connection between weaving and painting in neolithic Anatolia it may perhaps be worth mentioning that on the Kara Dağ, for example, anyone entering a tent will know the mood of its occupants from the type of kilim laid out, whether there is discord in the family, whether man and wife do not want to be disturbed, whether there has been a death, and so forth. The kilims bear names to this effect.

Many archaeologists claim that it is impossible to learn anything about the thought of ancient peoples if they were illiterate and hence 'prehistoric'. But who would deny that the neolithic people of Çatal Hüyük and Hacılar were unable to express at least some of their religious thought in their paintings and sculpture? This may not be writing, but it is symbolic material from which many early pictographs and

ideograms derive. The paintings cannot be read but they invite interpretation, and provided the material is plentiful and if possible derived from several sites, there is hope that one day the meaning of these symbolic representations may be unravelled.

It is precisely for this reason that systematic research is necessary. Hacılar is unintelligible without Çatal Hüyük, and the spectacular developments at the latter site will no doubt remain puzzling as long as what preceded it remains unknown. An ultimate heritage from the upper palaeolithic age can be sensed rather than demonstrated by actual finds, and the period between *c.* 9000–7000 BC is still a blank in our knowledge of Anatolia, except in certain peripheral areas which have developments different to those on the Anatolian plateau.

Returning to the study of animal and human motifs on the Hacılar pottery, it is significant to note that, in spite of the profound change that takes place between Hacılar IIB and Hacılar I, we still find many of the same elements in Hacılar I, even if the extravagant 'fantastic' style is now extinct. Before describing these motifs, the wares, shapes and general character of Hacılar I ware must claim our attention.

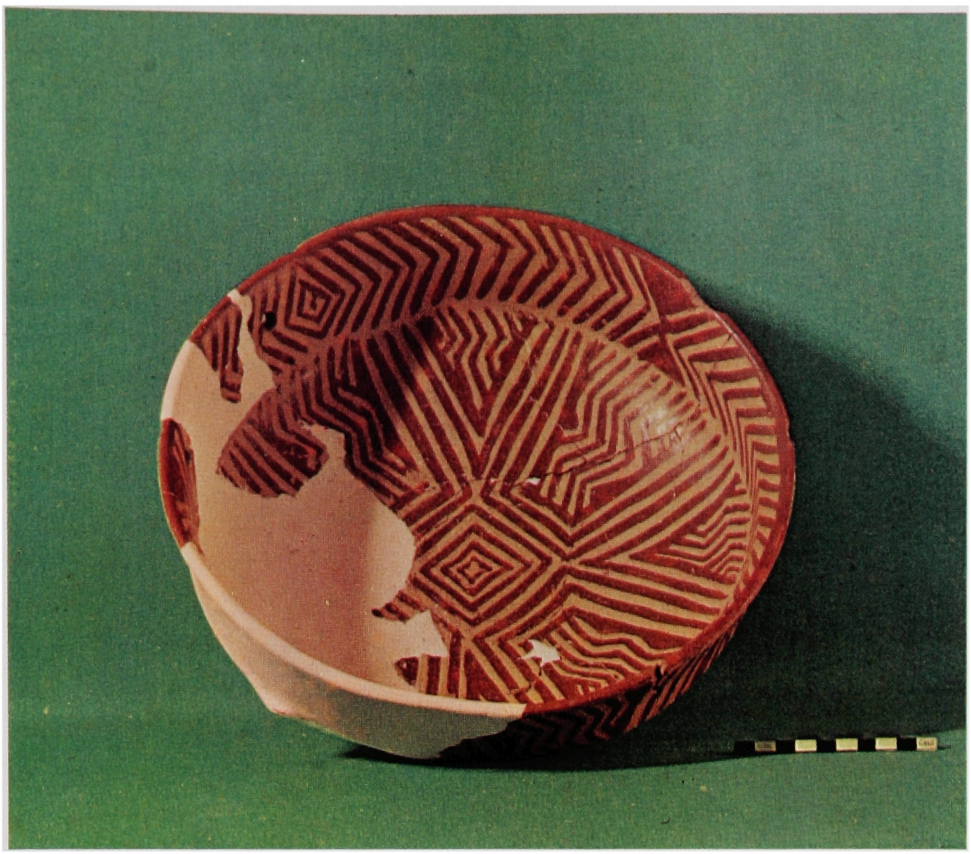
Hacılar I Pottery

The people who introduced the Hacılar I culture *c.* 5250 BC, were not the descendants of the people of Hacılar IIB, but newcomers. They built a fortress around the old mound, introduced a somewhat different form of architecture, new pottery and new statuettes. For making pottery they used both different clays, paints, slips, and somewhat different techniques (see the Petrological study, pp. 142–4). The character of the painting also differs considerably from that of Hacılar IV–IIB: the style is linear, the fantastic patterns have disappeared. Although predominantly red on cream, some white-painted pottery makes a reappearance. Monochrome wares still exist, but form less than 30 per cent of the total pottery bulk. Incised and grooved decoration appears, mainly on coarse ware. Relief decoration is common, especially in the form of anthropomorphic and theriomorphic vases, some of great complexity and interest. In general, vessels are larger than in the earlier periods and there are many ovals, ovoids, square, oblong, and subrectangular vessels, reminiscent of wooden or basketry prototypes. Oval cups in the form of human heads and handles in the form of animal heads disappear, but not entirely; rather they reappear in somewhat different shapes. The impression one gets is that after Hacılar VI there were two separate developments, one that led locally to the pottery of Hacılar V–IIB, the other developing into the wares of Hacılar I at some unspecified place and not appearing at Hacılar until after the destruction of the walled settlement of Hacılar IIB.

For Hacılar I also, we are in the position to be able to compare the pottery from the settlement excavated by ourselves with that of the cemetery pillaged by the peasants since our departure in 1960.

359–65 MONOCHROME WARE. Figures 109–12

In level I the monochrome wares (red and cream burnished and coarse buff or light red ware) are even rarer than in the earlier levels. As before, the monochrome



111. Hacılar I. Painted bowl with basketry pattern (cf. vol.2, pl.XCVIII:1 and fig.126:1)

shapes closely reflect the forms of the painted wares, especially in the categories of bowls (fig. 110) and jars (fig. 111). Not only in the shapes, but in the decoration can a distinct break with the earlier tradition be observed. Incision is found, but without the white filling of the later periods (fig. 109: 4, 9, 10, 22, 25), and there is grooved ornament (fig. 109:20, 26), ribbed ornament (fig. 109:27), and impressions (fig. 109:24, 25, 28), some of finger-nail type, others produced with an instrument. This has nothing to do with the 'barbotin and cardium decorated wares' of the Balkans and Thessaly.

SHAPES

Among the smaller vessels not many shapes are represented. There are a few small bowls (fig. 109:1, 2) with flaring sides, two small carinated bowls, of which one is 359
square (fig. 109:3, 4). There are sharply carinated bowls on feet (fig. 109:8, 9) with incised ornament. Among drinking vessels there are beakers (fig. 109:10, 11) and a cup with partition (fig. 109:7).

There are also deeper bowls, some with rounded bases and solid lugs, sometimes with incised patterns (fig. 109:10, 11). A large, probably oval vessel (fig. 109:12) has a ring base and is sharply carinated. Solid knobs ornament a bowl with flaring sides (fig. 109:13). Of two cups only one has the handle preserved (fig. 109:14, 16). An unusual oval vessel has two rim lugs on the interior (fig. 109:13), a feature also found in the late neolithic period of Hacılar (cf. fig. 51:9). Another rare vessel is square in section (fig. 109:21) with two lugs, and is matched in painted ware.

Small jars (fig. 109:18–20) are closer in shape to their predecessors. Among bowls there are shapes familiar from the painted pottery (fig. 109:15, 22, 23). The fragments illustrated at the bottom of fig. 109 are unique, including a deep bowl or jar with stabbed decoration (fig. 109:24), and the fragment of another (fig. 109:25). Sherds (fig. 109:26, 27) come from unidentified vessels and the small pedestals (fig. 109: 29–30) have no known parallels.

All these various shapes are comparatively rare when contrasted to the masses of monochrome red or cream carinated bowls (fig. 110:1–12), the square or rect- 361
angular vessels with ribs or rim-lugs (fig. 110:13, 14) or the ubiquitous jars, round or ovoid in shape (fig. 111:1-8). Handles on jars are either stout lugs, loop handles 363
(rare), or horned handles (fig. 110:15–17). Another innovation is spouts (fig. 110: 20–2) presumably fitted on to large carinated bowls as in the painted ware.

Characteristic of Hacılar I are potstands of a buff or grey ware with two horns. These are summarily burnished and frequently decorated with incised patterns (without white fill). The patterns consist of lozenges, chevrons and zigzags like the linear patterns of classical Hacılar I type (fig. 112:1–3). Previously, potstands at 365
Hacılar had been solid and undecorated. At contemporary Çatal Hüyük West the coarse-ware potstands again occupy a prominent place, but they are of a different type, closer to that of Hacılar II and richly decorated with pointille and incision.[1]

PAINTED WARE. Figures 113–53 366–434

More than 99 per cent of the painted pottery of Hacılar is painted in red on cream;

[1] *AS*, XV (1965) fig. 10.

the rest is painted in a thick crusty white or off-white on red or brown. Details of grits, texture, burnish and colour are to be found in the catalogue and need not detain us here. The same wide range of shades of red paint is found as before, but the slip is nearly always a yellowy cream. Burnishing is universal, and the paint is often very thick. Wet-burnished pieces still occur, but they are less common and are indicative of poor quality. Many vessels show variations in the paint from red to black, the result of firing, which is accidental and not intended. Polychromy is unknown.

The quantity of Hacılar I pottery is enormous and was estimated at between 100,000 and 200,000 sherds (only fifty of which were white-painted). Bowls form about 70 per cent, jars 25 per cent, and cups, mugs, etc., 5 per cent of the total. More than seventy pots complete or restorable were registered, and like all our finds from Hacılar, deposited in the Ankara Museum. Many more could be restored on paper from sherds.

366–7 SHAPES. Figures 113–14

The shapes of Hacılar I pottery are listed below and in figs. 113, 114, together with a legend indicating the frequency with which they are found.

HACILAR I. List of shapes. * = common. ** = very frequent. r = rare

Beakers

* 1. Short beaker or tumbler
* 2. Tall thin beaker
* 3. Large wide beaker
* 4. Large narrow beaker

Small bowls

* 5. Small shallow bowl with flaring sides
* 6. Small carinated bowl
* 7. Small deep bowl
r 8. Shallow dish, circular or square

Mugs

** 9. Oval straight-sided mug
* 10. Oval carinated mug

Medium to large bowls

r 11. Bowl with S-shaped profile and rounded body
** 12. Small carinated bowl
** 13. Carinated bowl with flaring rim
* 14. Deep carinated bowl, subrectangular
* 15. Sharply profiled bowl, round or oval
r 16. Deep bowl with rounded body and short neck
* 17. Deep bowl with everted neck
r 18. Truncated bowl
* 19. Large bowl with sharp S-profile
r 20. Small simple bowl
r 21. Large simple bowl
r 22. Deep and large bowl

r 23. Spouted carinated bowl

** 24. Large carinated bowl (round, oval, oblong, subrectangular or square)

Wide-mouthed jars

** 25. Small short-necked jar

** 26. Medium globular short-necked jar

** 27. Large globular short-necked jar

** 28. Tall-necked globular jar

r 29. Large short-necked carinated jar

Collar-necked jars

r 30. Small ovoid collar-necked jar

** 31. Large carinated collar-necked jar

** 32. Ovoid carinated collar-necked jar

** 33. Tall ovoid carinated collar-necked jar

r 34. Ovoid jar with perforated top

Effigy vases

r 35. Small single effigy vase

** 36. Large single effigy vase

** 37. Large double effigy vase

Miscellaneous

r 38. Double jar

r 39. Pithos or large storage jar

r 40. Tables or 'altars'

** 41. Potstands, coarse ware only

Most of the shapes of Hacılar I are new: the beakers, mugs, small bowls, the medium and large bowls, most of the jars, and the highly characteristic anthropomorphic vases. Only in a few instances does the Hacılar I pottery show resemblances to that of Hacılar IIB, and none of those is very specific, or significant. More than in earlier levels, we find pots of oval, ovoid, square, oblong or lozenge shape, as if basketry and wood carving formed their prototypes, a situation reminiscent of the early neolithic pottery of Çatal Hüyük, nearly three quarters of a millennium before. The pottery of Hacılar I does not often reach the sophisticated standard of the elegant Hacılar II ware, but it is of excellent quality and displays a boldness and sense of plasticity not seen since Hacılar VI. It lacks the almost schizophrenic beauty of the 'fantastic style' but replaces this with a bold linear pattern of design adapted to a rich and variegated number of extraordinary shapes. The pottery of Hacılar V–IIB is that of the painter, but that of Hacılar I shows the hand of the sculptor, and nowhere more typically than in the effigy vases.

Characteristic of Hacılar I is a linear style of painting, but much use is also made of patterns left in reserve. Wide bowls have red rims or triangle patterns along the interior and the typical large bowls are decorated both on the exterior and the interior. Unlike Hacılar IV–IIA the lower part of a vessel is not infrequently left plain whereas before it was invariably painted, but both types occur. Rims and bodies of bowls and jars frequently, if not always, bear different patterns, and interiors and exteriors of

bowls rarely have the same ornamentation. It is unusual for a bowl to have a plain red interior; plain cream ones are not found. Nearly all decorative motifs used on Hacılar I pottery are different from those found in the previous levels, and this includes even the stylised treatment of hands, eyes, figures of goddesses, and animal heads. White-painted pottery does not appear to have had a different repertoire of patterns, although some of the shapes are somewhat different.

369 *Beakers* (figure 115: 1–9, 11, 13). Occurring in several forms, this is a new shape to Hacılar. Some beakers are tall and thin, others short and wide, but all intermediate forms are found. Essentially they are the equivalent of our glasses or tumblers, used for drinking, and are not provided with lugs, though they may have knobs (fig. 115:1, 7–9). The orifice is round and only rarely slightly oval.

The decoration includes horizontal and vertical wavy lines or chevrons, V-patterns and stylised bucrania, either positive or left as reserve patterns. The shape also occurs in plain ware.

369,387 *Oval mugs* (figures 115:10, 12, 14–18; 124:2). A larger drinking vessel, frequently provided with two lugs, resembles a beer mug. It is invariably oval in shape, but the points of the ovals are not pinched to facilitate pouring as in the double oval vessels of earlier levels.

Decoration employs many of the patterns familiar from the beakers such as vertical and horizontal chevrons and zigzags, but rows of reserve lozenges, sometimes filled with dots are also common. Vertical plain bands on the narrow side of the ovals (as in previous levels) or horizontal ones at the height of the lugs are characteristic and emphasize the tectonic nature of the ornament. The shape also occurs in monochrome ware, like that of the closely related beakers.

373,387 *Small bowls of various sorts* (figure 117, centre row; figure 124:1). Small shallow bowls with flaring sides (fig. 117:2), wavy lines on the exterior and a row of triangles hanging from the interior rim, are not uncommon. Small carinated bowls (fig. 117:5, 6) are essentially miniatures of their larger counterparts. Small deep bowls (fig. 117:12, 17) are fairly rare and a square dish (fig. 124:1) is unique. Compared to medium- and large-size bowls these small vessels are rare indeed, and may have been used for specific purposes or by children.

373 *Bowls with S-shape profile and rounded body* (figure 117:9, 13, 16). This is a rare class, close to the deep bowls (shape 16), and frequently poorly painted, with horizontal bands and dots on the exterior and circles, hanging loops, or plain red on the in-

371 terior. Similar in profile is a bowl with a crescentic animal head in low relief (fig. 116:3), painted in a strong reserve style.

All seem to have had a round orifice and a round body, which distinguishes this shape from the predominantly square and oval vessels illustrated in fig. 116.

371 *Deep bowls with rounded body and short neck* (figure 116:11, 13). Only fragments of two of these rare vessels were found, both bearing the figure of a goddess of Çatal Hüyük type in reserve painting, with the goddess's abdomen indicated by a knob. It is unfortunately unknown how many goddesses were shown on these bowls; one, two or four?

Bowls or jars? The distinction between jar and deep bowl is often arbitrary at Hacılar as in other cultures. Fig. 116:10 is obviously a bowl, but fig. 116:1, 5, 8 could be described as a bowl or jar with equal justification. These shapes run into each other without clear demarcation: the small jar (fig. 117:11) belongs to the same striped group as fig. 116:7, a larger and less jar-like version. Similarly the pot in fig. 117:15 is linked both to the bowls of fig. 117:9, 13 and 16 and fig. 116:11 and 13, and to the carinated deep oval bowl (fig. 116:9). 371, 373

The striped bowl (fig. 117:12) is closely related to the more highly profiled one (fig. 116:6), but the one is round, the other probably square in horizontal section. In the more highly profiled vessels with a marked rim, this rim often bears a separate band of ornament which differs from that painted on the shoulder of the vessel (figs. 116:1, 2, 4, 5, 8, 10, 12, 14, 15; 117:3), but as it occurs on bowls and jars alike it is not a criterion for distinguishing between these two, assumedly different, types of vessels. Evidently the division did not exist at the time and modern typology (or logic) is quite inadequate for dealing with materials (or thought) of pre-classical periods.

Sharply profiled bowls (figure 116:1–3, 8). Of the illustrated examples the first two are square in shape, the others oval. The offset neck is usually decorated with chevrons in reserve. The corners of the mouth of square vessels are thickened and there are four knobs on the widest party of the body of the vessel. In the case of ovals the rim is not strengthened, but there are two knobs on the carination of the pot. 371

Deep bowl with everted neck (figure 116:4, 6). This shape is closely related to the preceding, but, as it is represented only by fragments, it is impossible to tell whether it was round, oval, or square. Other related forms are shown in fig. 116:5, 9, the first with a straight neck like a jar, the second carinated and oval in shape. 371

Large bowls with sharp S profile (figure 116:14, 15). This is essentially a larger form of the two previous types, but is only known from fragments. Both restored vessels were oval in shape. 371

Carinated bowls, square or subrectangular in shape (figure 117:1, 4, 8, 10, 18). Whereas carinated bowls are among the most common vessels of Hacılar I, they are usually round. There is however a group of these which is square or oblong in shape and these are here grouped together. Characteristic of these vessels is decoration in panels, tectonically arranged. The only intact example (fig. 117:18) had two lugs, vertically perforated. Fig. 117:8 shows an unusual profile in that the rim above the carination is straight instead of concave (cf. fig. 118:4). A further feature of these bowls is that they have a plain interior or at most a row of triangles below the rim (fig. 117:18), and thus they differ from the common round carinated bowls which are invariably decorated on both surfaces. 373

Simple hemispherical bowls (figures 118:10, 17, 20; 59:14). This simple shape is a rarity in Hacılar I. The bowls are usually round, but two ovals are known. 375

Deep or shallow bowls with almost straight sides (figures 118:3, 5, 11, 12, 14, 19, 21, 22; 124:7, 8). Another rare group which often gives the impression of being a poor version of the more sharply carinated bowls (cf. fig. 118: *passim*). Decoration on the interior, 375

though sometimes found (fig. 118:11) is usually absent in this class or at most confined to a broad band or a row of triangles below the rim.

375 *Truncated bowls* (figure 118:18 and probably 15). These are unique, but painted in characteristic Hacılar I fashion, so that they are unlikely to represent imports. The shape is also known in the western Halaf repertoire.

375–411 *Carinated bowls with more or less concave rims* (figures 118–39). This is the typical bowl of Hacılar I. It occurs in massive quantities, in all sizes, with diameters ranging *c.* 12–60 cm, and is painted both on the interior and exterior. Although most are round, others are square, oblong, subrectangular or lozenge shaped. Bases are nearly always flat and are frequently coated in red paint. On the carination there are two or four oval knobs, never perforated. A very few are provided with short spouts (fig. 121: 29, 32). The square or subrectangular vessels described above belong to this same group, but they lack interior painting.

Fragments of small carinated bowls are shown in fig. 118:1, 2, 4, 6–9, 13. Their decoration is on the whole, fairly simple, but not enough interiors have survived to form an opinion of their range of patterns.

Larger carinated bowls, again fragmentary, are shown in figs. 119 and 120. No interiors are preserved, but fig. 119 shows the rim decoration of those bowls which have strong linear designs, probably derived from basketry, and figs. 120 and 124:5, 6 those on which reserve ornament is most marked. Bowl fragments, including some centre pieces, are grouped together in fig. 121, which also shows unusual lugs, feet and pedestals and a number of spouts. A few more fragments are shown in fig. 122:23–5.

Carinated bowls that were more or less complete or could be restored were fairly
385–411 numerous (figs. 123–39), but hardly two are identical. According to the interior decoration these round bowls can be roughly grouped into the following varieties:

138 1. Bowls decorated with concentric circles (figs. 123:1–3; 124:4; pl. XC)

139 2. Bowls with rotating or swirling patterns (figs. 125:1, 2, 4; pl. XCI)

146 3. Bowls with basketry patterns (fig. 126:1, 3, 4; pl. XCVIII; col. pl. III, facing p. 130)

4. Bowls with star, flower patterns, etc., in reserve (figs. 124: 2, 3; 126:2; 127;
141–3 128; 129:1; pls. XCIII–XCV)

144–5 5. Bowls with crosses or crossing bands (fig. 130; pls. XCVI–XCVII)

150, 154 6. Bowls with superimposed crosses in centre (fig. 131; pls. CI, CIII)

7. Bowls with spiral hook patterns (fig. 131; pls. CI, CIII)

8. Bowls with four negative animal heads and a positive cross (figs. 125:3;
139–46 133; 134:2; 135:3; 136; pls. XCI:1; XCII:2; XCIV:2; XCVI:2; XCVIII:2;
148–54 C:3; CI:2; CII:3–4; CIII:2)

9. Bowls with four negative human figures and a positive cross (figs. 134:1,
155, 156 3, 4; 135:1, 2, 4; pls. CIII:3–4; CIV:1)

139 10. Miscellaneous bowls with rare patterns (fig. 123:4; pl. XCI:2)

Oval, square and subrectangular bowls (figures 137–9; 125:2, 4; 129:2; 132:4; pls.
147, 158 XCIX, CV). These are considerably less common than round carinated bowls, though by no means rare. Unless the vessel is more or less intact it is difficult to distinguish

these vessels from the round variety, but the rims are less concave. The decoration is similar to that of the round bowls, but with less emphasis on negative patterns. Peculiar are the central patterns of figs. 129:2, 138:3 and 137:2, or the 'faces' of figs. 137:3 and 138:1. Animal heads are easily recognisable in fig. 139:1 (restored from the fragment shown in pl. C:5). The central patterns of figs. 137:1 and 139:2 have numerous parallels in the 'crosses' on the round bowls.

The patterns will be described in more detail below.

Jars. With the exception of some miniature vessels (fig. 140:3–5), the jars of Hacılar I fall into two main groups: wide-mouthed jars and jars with a collar neck. Whereas the former are usually round, the latter can be round, squarish, or ovoid in horizontal body section. The ovoids have two strong lug handles painted red just above the knobs on the carination; round vessels have no lugs but do have knobs, two or four (ovoids have only two), regularly spaced at the widest part of the body. Groups of knobs (figs. 140:6; 149:3) are rare. 413

413,427

Round vessels usually have a round orifice and a round base, ovoids have a round or oval mouth, sometimes pinched on one side to facilitate pouring (figs. 147:3; 149:1; 150:2), as in the earlier levels at Hacılar. Lids are unknown. Relief decoration is rare (figs. 145:1; 141:2, 10). 424 427,429 421,415

Typological subdivisions, attempted on p. 135, are fairly arbitrary, for intermediate types exist between the various shapes and we have already seen above that the dividing line between deep bowls and wide-mouthed jars is equally uncertain. Moreover, both classes of jars occur in a gradation of sizes: small, medium, and large; and a special class of collar-necked vases is modelled as anthropomorphic figures (see chapter 10), with round, square, ovoid, lozenge-shaped, or lentoid bodies.

The pottery of Hacılar I does not lend itself to being forced into a straight jacket of typology; it is far too individual and human to be mechanically classified.

The decorative scheme on jars of Hacılar I is fairly consistent. On most vessels neck and body are treated as separate entities, each with their own pattern (e.g. fig. 146; col. pl. IV, facing p. 146). In other cases neck and body have the same motifs: on the large wide-mouthed jars (figs. 141:12, 15; 149:3), the jar or jug (fig. 149:1), the double jar (fig. 143:5) and the round and ovoid jar (fig. 140:9 and 1). 423 427 417,413

Jars are painted all over (e.g. fig. 145) or the lower part of the vessel is left plain (e.g. figs. 142:2, 5, 6; 149). Vessels decorated in a simple linear style are rare (figs. 140:3, 4, 5, 8; 141:3; 142:5; 143:1, 2; 146:1, 3). Most others make efficient use of the reserve technique (*passim*), and by far the most common pattern is that of parallel, wide chevrons or wavy lines, probably a symbol for rippling water. This pattern is particularly common on the necks of jars, where it is most appropriate, for one usually fills a jar up to the neck.

Wide-mouthed jars. This is a very common shape in all its variations: squat-bodied (fig. 141:1, 2, 4) and a somewhat larger variant (fig. 140:6), or figs. 142:3 and 4 and 144:2, 6, 7, which are oval in shape. More globular forms are illustrated in figs. 140:7, 141:5 and 144:1, 3, 8. Really large vessels of this type with wider or narrower necks are shown in fig. 149:3, 4. Squat carinated forms, round or 413–16 419 427

ovoid, are shown in figs. 140:8 (ovoid) and 144:4 and 5 (shape not determinable from the fragments).

The ovoid vessels of this group are only distinguishable from the other ovoids by their wide and short necks, whereas the others have funnel necks, which are high and narrow. As so often the two groups of jars distinguished here run into each other through inter-
413 mediate types (cf. fig. 140:8 and 9).

Collar or funnel-necked jars, round or ovoid. Whereas round funnel-necked jars are
347,349 evidently derived from earlier Hacılar types (e.g. figs. 98 and 99) and include those in
427,347 which the mouth is pinched for pouring (cf. fig. 149:1 with fig. 98:1), the two-lugged ovoid is an innovation of Hacılar I and a very popular shape indeed. It has no good ancestors in Hacılar V–II, for, although these earlier levels knew lentoid or bottle-shaped vessels, these are not immediately comparable, though both represent flattened shapes. True lentoids are not found in Hacılar I and proper ovoid jars are almost unknown before. What is noteworthy is that the earlier funnel-necked jars have two handles often in the form of stylised animal-heads, a form that is adopted not in the funnel-necked jars of Hacılar I, which are with few exceptions without handles, but in the Hacılar I ovoids, where the lug placed above the knob on the carination looks like a degeneration of the earlier type of handle. What is further interesting is that in the earlier levels these handles imitate animal heads, but in Hacılar I they are sometimes subtly transformed into human faces by the addition of a set of eyes, the lug forming the nose, and the knob below the chin. In the same way the Hacılar II mono-
303 chrome jar (fig. 75:18, pl. LXX : 1) with two projections and a bar on the tall neck is turned into a face – or effigy-vase: the bar becomes a nose, the projections become ears, and the resemblance is enhanced by the addition of eyes (incised, modelled, or inlaid in obsidian), a chin, and some rudimentary arms above the carination, where one or more knobs indicate the abdomen and the buttocks. The faint prototypes of anthro-
347 pomorphic vases can be found in Hacılar II (fig. 98:1), but they become a speciality of Hacılar I. The origin of these vessels will be more fully discussed in chapter 10, and
429 only a few unusual ones are included here (fig. 150).

Round-bodied jars with high collar or funnel necks are frequent in Hacılar I (figs.
413–17 140:9; 141:3 and fragments: 141:6–11, 13, 14, 16–18; 142:1, 5, 6; 143:1–4; pl.
159 CVI).

Ovoids are even more common and they occur in all sizes, mostly with two lugs, but
413,421,160–1 sometimes without (figs. 140:1; 145–8; pls. CVII–CVIII). Some are only 10 cm in height, others reach dimensions of 60 cm. Some have round necks, others oval and splayed. Not a single vessel from the excavation showed more than one neck, but it is said that some with two necks have been found since.

It is possible that some of these vessels could have been used as churns for making butter, but one would expect such domestic tasks to have been carried out in less splendid versions of the richly decorated examples we found in the settlement. If these vessels were really used in such a way in daily life one might have expected a few broken lugs, but this is the one part of the ovoids that is always intact! It seems more likely that these vessels *imitate* churns.

Jars are always less common than bowls in early settlements and Hacılar I is no exception. From the richness and variety of the jars one can easily estimate the profusion of bowls at this site. Unlike the bowls the jars are far more difficult to divide into groups according to their painting, but we have the same varieties of purely geometric patterns (e.g. fig. 140:9), a linear style, which covers only a part of the pot (e.g. fig. 143:1, 2), 413,417
a style which makes clever use of negative and positive patterns (e.g. fig. 144:3), 419
including animal heads (e.g. fig. 144:4, 7, 8), and a group decorated in the traditions of basketry (e.g. figs. 145 and 147). 421,424

Unusual vessels. Among the oddities of Hacılar I there is a double jar (fig. 143:5), 417
which is unique like the 'owl-faced' and lozenge-shaped vessel (fig. 150:1), or the ovoid with covered mouth perforated by three holes (fig. 150:2). Presumably these 429
vessels had more of a ritual than a domestic function, but their provenance unfortunately did not indicate the presence of a shrine or sanctuary and they were presumably thrown out among the rubbish of the settlement. It is only when they are compared with equally unusual vessels found by the peasants in the Hacılar I cemetery west of the site that their true nature is revealed.

MOTIFS AND SYMBOLISM IN HACILAR I ORNAMENT. Figure 154 435

At first sight the gulf that separates Hacılar I from the culture of Hacılar V–II seems too vast and deep to warrant any obvious survivals. The 'fantastic style' of the earlier period has gone, as have the 'face-cups'; the shapes show few links if any with the pottery of the past, and the new linear style does not seem the right vehicle for the expression of pregnant symbolism. To the casual observer the break seems complete and it is only when one marshals all the evidence of the Hacılar I pottery that one realises that the old symbolism is by no means dead. I admit that the idea only struck me after seeing pots from the cemetery, with male and female figures naturalistically modelled in relief or with an incised triangle on one side matched by a raised bar and two knobs below on the other side – unmistakable symbols!

The human element is represented by the same features as we have already seen in Hacılar V–II:

Hands (figure 142:1) 416

Eyes in the form of obsidian inlay (pl. CXI), as lozenges on the interior of bowls (figs. 164
137:3; 138:1) or left in reserve on a number of bowls and clearly visible when these 408,409
are turned round (figs. 116:2; 116:8; 117:14; 120:8 and possibly 6). These bowls of 371,373,379
various shapes take the place of the 'head-cups' of earlier levels. Figures of *goddesses* are found in reserve on bowls and jars alike (figs. 116:11, 13; 144:4, 5). In fig. 144:4 371,419
the goddess is associated with two animal heads also in reserve. A row of three human figures holding hands is shown on the unusual jar (fig. 150:2) and the heads are indi- 429
cated by the three holes in the covered top of the neck. Other figures of goddesses are shown in reserve on the bowl (fig. 116:3) when reversed, and these are remarkably 371
like the statuettes of the same period with their pointed heads and short curved arms. Another small figure occurs on a sherd (fig. 122:5). 383

Animal heads are also fairly easy to recognise (fig. 154). There are highly schematised 435
bucrania reminiscent of Halaf pottery in fig. 115:1, 9, and possibly fig. 116:15. An 369,371

373 applied ram's head ornaments a bowl (fig. 117:3) and other horned animals figure
375,379,399,411 in bowls (figs. 118:2; 120:5, 9, 12; 132:3; 139:1, and on the fragments of 122:12 and
383 perhaps also 122:2, 4, 8, 9, and 14). On jars they are not absent either: a plastically
415 rendered bull's head is found on the neck of a jar (fig. 141:10); another in reserve is
415,419 shown in fig. 141:6, and fig. 144 shows a series of motifs derived from animal life. Unmistakable animal heads decorate the jars (fig. 144:7, 8, and the rim of fig. 144:2, which inverted shows another animal head as the central motif on the body of the vase). Fig. 144:4 has two animal heads associated with the goddess and fig. 144:3 has two bull's heads separated by oval panels, the one upside down, the other the right way up
317,315 like the earlier jars and bowls with bull's heads in Hacılar II (figs. 83:3; 81:5) but here combined into a single pattern.

Bowls with four animal heads or four goddesses. A fairly large number of bowls are decorated with four bulls' heads in reserve painting arranged around a cross or flower
401 symbol, in the middle of which is a rectangle filled with wavy lines (fig. 133:1, original, and 1a, drawn in reverse). The 'flower symbol' is already known at Çatal Hüyük, where it is associated with the goddess and is, for example, painted on the figure of a seated goddess. In this bowl it was possible to observe the way in which the painter drew the figures: he first outlined the four bulls' heads in reserve and then filled in the centre with the flower symbol. The representation then is of four bulls' heads arranged around a pool of water in the middle of the flower; this pattern is repeated with varia-
401,405,407 tions on a number of other bowls (figs. 133:2, 3; 135:3; 136:2, 3). A similar arrange-
389 ment is found in another bowl (fig. 125:3) where the 'animal heads' may not be those
403 of a bull and the negative figures round the cross in the bowl (fig. 134:2) also defy
407 identification. Still more interesting is the fine bowl (fig. 136:4), where the negative pattern seems to show two pairs of animals (wild asses?) facing each other.

Parallel to this group of bowls decorated with bull's heads is another in which figures of goddesses drawn in negative reserve painting take the place of the bull or animal heads. Whereas the bulls' heads are arranged with the muzzle pointing inwards towards the centre of the bowl, the goddesses are placed in such a way that their heads converge
403,405 on the centre (figs. 134:1, 3, 4; 135:1, 2, 4). The centre bears a cross without central lozenge, which could be interpreted as the flower symbol, though that shown in fig.
301 74:1 could also be interpreted as four stylised heads of horned animals. The negative goddesses of figs. 134:1 and 135:1 and 2 are particularly clear and foreshadow the characteristic flat marble idols of the Early Bronze Age of western Anatolia. The goddesses of fig. 134:3 and 4 when inverted could also be seen as animal heads, resembling
419,405 those of fig. 144:7. The strange figures seen on the bowl of fig. 135:4 are stylised beyond recognition, but remind one of the 'step-pattern' goddess of Hacılar II
319 (fig. 84:6).

399 Many other bowls are difficult to interpret: fig. 132:3 seems to show the familiar pool of water surrounded by two bucrania and two rams' heads. Water is evidently the
396 central pattern of fig. 130:2, but it is not certain that the white triangles depict stylised
391 animal heads. The splendid bowl, fig. 126:1, shows some similarities to the bowls with animal heads; if the panels do represent bulls and other animal heads, the linear

decoration may indicate the hairiness of the beast. Such an interpretation is however far from certain, and this motif is extremely common in Hacılar I.

Jars in the form of heads? In Hacılar VI, and more frequently in Hacılar V–II, we have noted the presence of cups and jars which, when put upside down, show a human face. From the practical point of view it would be unwise to invert a huge ovoid for it is likely to fall over and break, but one must remember that such vessels were not put in show cases but stood on the floor so that anyone standing obtained a different view of the vase from anyone sitting on the floor. Moreover, ungainly vessels like ovoids were probably put on their side for pouring and the beholder would automatically get a view of the pots decoration upside down. There is plenty of evidence to show that the Hacılar I potters took account of this in their decoration, and we have already mentioned the cups and bowls with such decoration. Among the jars there are many striking, if not bizarre creations (e.g. fig. 142:5, the 'Donald Duck' of fig. 142:3, the mask of fig. 144:2, the possible human head of fig. 144:4, and the toothy monster of fig. 144:1). With some imagination one can see a pig's head in fig. 146:2, a 'golliwog' in fig. 146:5, and an 'elephant drawn from hearsay' in fig. 146:6. That the Hacılar I people did see faces and figures in their pots is abundantly clear from the extremely rich series of anthropomorphic vases, modelled with every degree of naturalism or semi-naturalism that could be expected of the age. Among the latter is the 'owl-faced' vase of fig. 150:1; the obsidian eyes on either side of the pointed oval neck of a large jar (pl. CXI); or the beady eyes and the stylised arms on the ovoid jars shown in fig. 147:1 and 2. The more naturalistic vases will be described with the statuettes.

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It is therefore evident that, in spite of the significant changes that took place at Hacılar between levels II and I, a very similar sense of symbolic decoration of pots continued to prevail. This is more or less what one might expect, for the religious concepts of the period were more permanent than the changes in pottery, statuettes, architecture, and artifacts. The cult of a Great Goddess and of her son and husband represented as a bull or a ram continued long after the last survivors of the fire of Hacılar I had left the settlement, just as it had dominated the thought of neolithic Anatolians long before Hacılar was founded.

WHITE-PAINTED POTTERY. Figures 122:27–36; 151–53; plate CXI

383, 431–4
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Pottery painted in white on a red or brown monochrome is rare in Hacılar I. The paint is usually mat and crusted on the monochrome surface, and white, creamy, pink, or light orange in colour. The quality of this type of pottery is on the whole inferior to that of the red on white ware, but there are notable exceptions. The few recognisable shapes are illustrated in figs. 151–3; they consist of a carinated bowl (fig. 151:1); a simple bowl (fig. 151:7); a cup (fig. 151:8), oval in shape with a marked ridge in front and unique; and several deep bowls (fig. 151:2, 3, 4). The other shapes are a deep jar (fig. 151:5), funnel-necked jars (fig. 152:3, 4, 5, 7), and very large storage jars of the same shape (figs. 153; 152:1, 2, 6; 151:6) with horned handles. Patterns are almost exclusively geometric with the exception of fig. 152:3. Plastic ribs occur on the fragments (fig. 122:34–6). White-painted ornament is sometimes added to a

vessel already decorated in the red on cream technique. The loops at the bottom of the zigzag band of the jar shown in fig. 146:7 and the outermost circle and spiral whorls on fig. 146:7 are in crusted yellow-white paint.

The use of white paint on red monochrome vases appears to be a short-cut, replacing the elaborate reserve decoration of most of the Hacılar I pottery. Evidently the new technique did not find favour; most of the vessels are rather poorly painted and so insignificant in number that one suspects that only one potter's workshop was responsible for these pieces. Some of the shapes are specialised: the bowl and cup (fig. 151:2, 8), the large storage jars (figs. 153; 152:1; 153:6), and the painted horned handles have no counterparts in the red on cream ware. One might even suggest that the white on red ware at Hacılar I was an import; and though this is perfectly possible, its origin is still unknown, for no other Hacılar I site found on surveys has yet yielded white-painted pottery.

The one interesting link with the cultures of western and southern Anatolia in the following late chalcolithic period is that they produced white-painted (but not red on cream painted) wares, but even if the technique survived the complete break in culture, shapes and patterns are completely different and there is no continuity.

Appendix

Petrological Examination of Sherds

Ann Stoves and *H. W. M. Hodges*

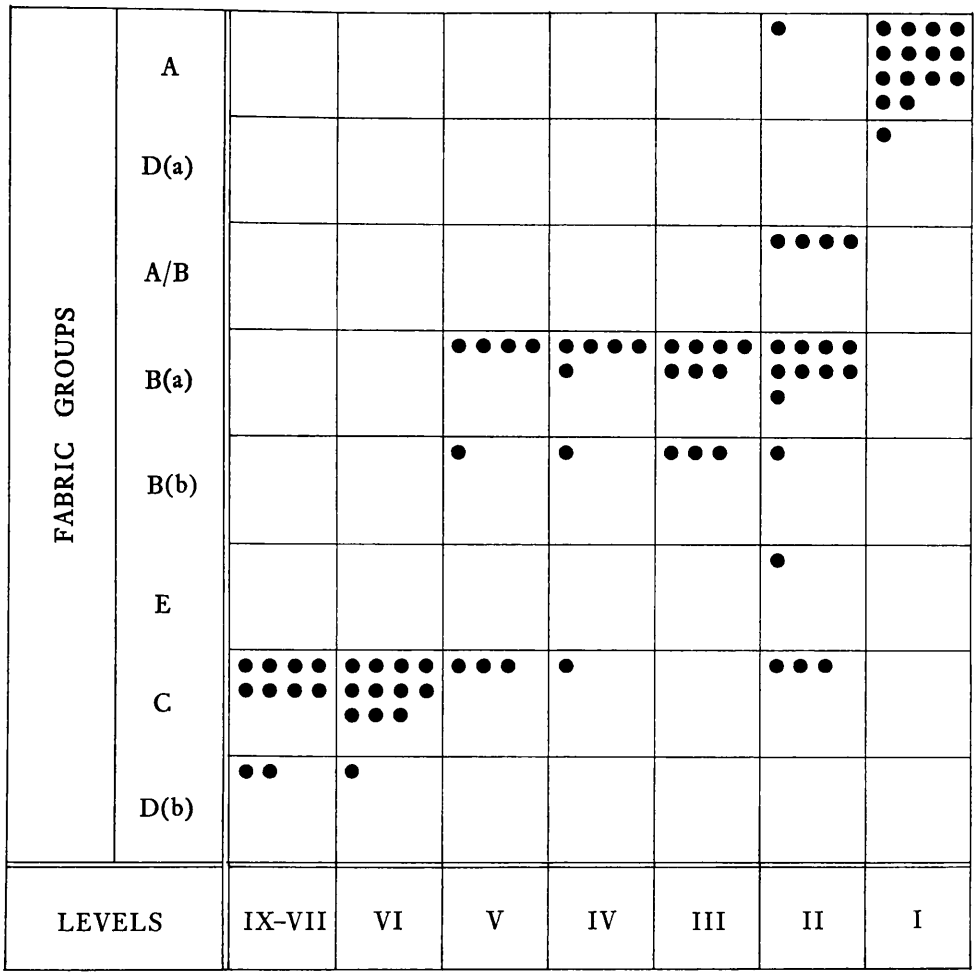
A group of eighty-five scrapings from the nine Hacılar levels were selected for petrological examination by Mr David Biernoff, to whom we are grateful for this help. The sherds were selected to present as wide a range of surface differences, in colour and decoration, as could be managed for each level. The sample was thus not a random one, for the sheer quantity of pottery would have made this impossible in the time available to us, but rather a selection aimed at providing the greatest likely variation.

As a result of the examination, eighty-one of the sherds could be classified on the basis of their mineralogical content into eight distinct groups, A, A/B, B(a), B(b), C, D(a), D(b) and E. Sixty-six of these sherds fell into one of the three main groups, A, B(a) or C. Four sherds, two from level V and two from levels VIII and IX remained unclassified. See fig. 158, opposite.

As detailed knowledge of the geology of the area surrounding Hacılar was not available, it was neither possible to ascertain the tempering material available to potters in the vicinity, nor to identify, with any degree of certainty, which of the inclusions in the sherds had been artificially added. In this article, therefore, the sherds are discussed in terms of their inclusions, and not in terms of temper and natural inclusions.

Group A sherds are characterised by a fine clay body, with numerous *calcareous* and *quartzite* inclusions. The calcareous material, which is predominant, consists mainly of rounded, slightly altered, grains, a few angular fragments and occasional oolitic material. Plutonic quartz, anorthoclase feldspar, devitrified glass, (G1), and small lathes of mica are also present, but in a smaller quantity. A second type of devitrified glass (G2), is also conspicuous, due to its yellow iron-stained colour. It is unlikely that

glass of this type would survive as a detrital mineral in the clay, which would suggest that it has been artificially added as tempering material. The appearance of the calcareous material, however, would also suggest that it has been artificially added; and as it seems unlikely that both the glass and the calcareous material would have been mixed and added as temper, this poses a problem which probably cannot be solved until there is a greater knowledge of the clay types and tempering materials which were available to potters at that time. Fragments of grog, clinopyroxene, and shell were also found, but only as rare fragments in one or two sherds.



158. Ceramic fabric groups are plotted against levels. Each dot represents a sherd sample.

The predominant inclusions in Group B(a) sherds are of an *acid vesicular rhyolitic glass*, possibly pumice. A little angular feldspar and occasional fragments of devitrified glass (G1), mica, and calcareous material, are also present; and certain of the sherds contain small inclusions of the yellow stained glass (G2) found in Group A. No quartz was found.

Group B(b) sherds are characterised by inclusions of very *fine vitric tuff*, and small *angular sherds of glass*. Fragments of tubular pumice are present in one or two sherds, as are small inclusions of feldspar and calcareous material.

Sherds of Group A/B differ from those of Group A or Group B(a) in that they are less calcareous than Group A sherds and have fewer glass fragments than group B(a).

The principal inclusions are of *feldspar* and *pumice*, but some sherds also contain devitrified rhyolitic rock fragments and angular glass sherds.

Group C sherds contain relatively large fragments of muscovite, quartzite, twinned feldspar, and a little devitrified glass is present.

Groups D(a), D(b) and E are minority groups. The inclusions in Group D(a) sherds are principally calcareous, but a small quantity of *quartz* is present, while Group D(b) inclusions are *totally calcareous*. The sherd in Group E contains *shell* fragments.

The mineral inclusions in the four unclassified sherds are similar to those occurring in one or other of the above groups, but the relative proportions of the inclusions and the forms in which they are present differ from the classified sherds.

The sherds from level V both contain calcareous material, devitrified glass, and a little clinopyroxene, feldspar and quartzite. The two sherds differ in that one contains larger calcareous fragments and some oolitic material.

The two sherds from levels VIII and IX have principally calcareous inclusions with numerous small feldspar fragments and a little devitrified glass. One sherd contains a higher percentage of calcareous material, the individual fragments of which are much larger than the fragments in the other sherd.

In so far as the surface treatment is concerned, thin sections revealed very little working worth comment. Painted areas, whether black, brown or red viewed superficially, were evidently coloured with a thin slip of fine clay mixed with haematite. The colour differences are due solely to the conditions of firing; reducing conditions causing the otherwise red haematite to be converted, totally or partially, to black magnetite.

It is significant that in levels IX–II the slips are uniformly relatively thin, but that in level I they are far thicker, and the clay contains rather large inclusions.

COMMENTS

The distribution of the different body fabrics within each level is shown in the diagram, and this is largely self-explanatory. In the lower levels only fabrics of Groups C and D(b) were utilised; but in level V new fabrics, namely Group B, were introduced although the older fabrics, C and D(b), continued to be found sporadically. In level I, however, only the fabrics of groups A and D(a) are found; the earlier fabrics have disappeared.

In terms of human activity, this means that in the earlier levels potters were concentrating on two formulations for their raw materials. In level V, the potters began to utilise other sources. The fact that in these upper levels there continue to be found fabrics of the earlier groups may mean either that pottery was continuing to be made from the earlier fabrics, or that there was a residue of pottery of the earlier periods still in use and suffering breakage. Thus from levels IX to II there appears to be a continuous evolving ceramic tradition, undergoing a rapid change in level V. Level I, with its new fabric and different slip, must represent a complete break in potters' traditions, and would suggest a different population from the earlier levels.

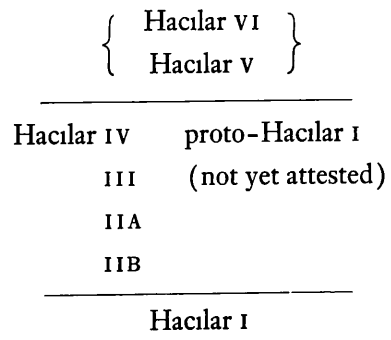
It should perhaps be pointed out further that this technique of examination will allow, in the future, the allocation of ceramic materials from unstratified locations to probable horizons in the archaeological record.

Chapter 7. The Origins and Relations of the Hacılar I Culture

The Hacılar I culture has clearly been introduced from elsewhere, and although its origins are at present unknown some theories might be formulated about its antecedents. Hacılar I pottery continues the tradition of red on cream painted ware, heavily burnished, although it uses different clays, pigments, and different patterns. The religious concepts behind the decoration resemble those practised in earlier phases of Hacılar culture, differing only in detail. The same observations may be made about the religious statuary, the architecture, and the small artifacts. Hacılar I is not derived from Hacılar II, or in a wider sense from Hacılar IV–II, but one can find links, however tenuous, with Hacılar VI and V. The beakers and oval mugs may be belated descendants of the small tumbler and the two-handled hole-mouth jar of Hacılar VI; the simple and straight-sided bowls, the deep bowls, the bowls with flaring rim decorated with horizontal parallel bands, could all be similarly related to Hacılar VI. The painted jars of Hacılar V with funnel necks and interior triangles, the wide-mouthed globular jars, the bowls on four feet, the crescentic lugs, the lugs in the form of animal heads, the occasional basket handle, linear decoration and the use of white paint, occur in Hacılar I as well as in Hacılar VI–V, but, on the whole, not in Hacılar IV–II.

The few parallels between Hacılar I and II are quickly summed up: animal-head handles, eyes in obsidian, pedestals with circular cut-outs, the prototypes (though rare) for the effigy vases of Hacılar I, and some square-bodied jars.

The impression one obtains is that after Hacılar VI, there were two separate developments, one of which can be studied in Hacılar V–II, the other branching off, perhaps in Hacılar V, remaining obscure to us during Hacılar IV–II, but then, fully developed, taking over the site. The implications are that Hacılar I ware has the same, or similar ancestry as the Hacılar IV–II ware, but that it developed elsewhere in South West Anatolia, probably nearby. The sequence may be shown as follows:



GEOGRAPHICAL DISTRIBUTION OF HACILAR POTTERY.
Figure 156

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Surveys in southern and western Anatolia have contributed much to establish the extent of the various Hacılar cultures, their close relations and their different neighbours. From the point of view of field survey, Hacılar pottery can be roughly grouped into only three identifiable categories: the red or mottled monochrome wares of Hacılar VI and V, the painted wares of Hacılar IV–II, and Hacılar I ware. It would be preposterous to claim further precision at this moment: later monochrome wares are hard to date and one cannot distinguish between painted sherds of Hacılar IV, III, or II unless a whole pot is preserved (and often not even then), which is not the case.

The distribution of Hacılar VI monochrome ware is interesting in that it covers a wide area (fig. 156a), extending roughly from Lake Eğridir, or even the top of Lake Beyşehir, to the region of Afyon and Uşak in the north and to the plain of Elmalı in the south. Westward there seems to be an extension to the plains of Akhisar, Manisa, Kemalpaşa and the centre of the west coast *via* the natural routes, the valleys of the Maeander and the Hermus. Without excavations it cannot be determined whether these western wares are really part of the Hacılar VI complex or a related, contemporary, or conceivably even later, version.

Although monochrome wares of 'Hacılar VI type' are widely distributed, one is immediately struck by the paucity of material that can be attributed to Hacılar IV–II (fig. 156c). Painted pottery of this type has been definitely identified only at two sites, Hacılar and Dereköy I, and monochrome ware at Yarım Hüyük (Tefenni vil.) and at Bucak, at both places without any trace of a painted component.

Hacılar I pottery, easily recognisable on account of its striking painted ware, shows a wider distribution (although confined to the regions of Dinar, Burdur, Bucak and Elmalı) and was found on about fourteen sites, but nowhere in any quantity except at Hacılar (fig. 156b).

What conclusions, if any, can be drawn from this admittedly scanty material? Considering the amount of survey work involved, and the competence and experience of the archaeologists, who besides myself, were engaged on this survey (Mr D. H. French, Mr C. A. Burney, Mrs J. Birmingham and Bay Riza Incel), I feel justified in saying that the distribution of *painted* pottery in South West Anatolia appears to be much more limited than was at one time thought to be the case. One gets the impressions that after Hacılar VI, the greater part of the area continued to produce fine monochrome wares, whereas only in a few centres, of which Hacılar is one, painted pottery was produced and perhaps exported as luxury ware to the surrounding villages. The site of Bucak, for example, cut by modern installations, has yielded hundreds of sherds easily classified as monochrome Hacılar V–II pottery, from which they differ only in the extraordinary proportion of 'Bucak bowls'. Painted pottery, on the other hand, is conspicuous by its absence, and it is clear that Bucak did not participate in the Hacılar development. What previously has been called 'Bucak culture' is therefore a monochrome ware of Hacılar V–II with some local varieties. It is doubtful whether it is more than a pottery group, but without excavations one cannot be certain.

IV. Hacılar I. Painted ovoid jar (cf. vol.2, pl.CV:4 and fig.146:4)

The distribution of Hacılar I pottery covers the greater part of the southwest, and painted sherds resembling Hacılar I ware occur sporadically near Akhisar and in Ayio Gala cave in Chios. It is interesting to note that on a great many if not most of the sites Hacılar I painted and Hacılar VI monochrome are the only classes reported. Does one interpret this situation as a wave of Hacılar I people reoccupying a series of long deserted mounds, an almost uninhabited southwest and west Anatolia during the period of Hacılar V–II, *c.* 5600–5250 BC? Could the Hacılar I pottery at the other sites represent luxury ware imported from Hacılar itself whereas the local wares were still monochrome and made in Hacılar VI and V tradition? Petrographical analysis could establish the question of local ware versus import and the possibility, especially in the west, that monochrome traditions lasted longer there should seriously be considered, but needs stratigraphical confirmation. In the southwest, on the other hand, we have monochrome wares of Hacılar V–II type at sites such as Bucak, Yarım Hüyük, and the drastic solution of a wholesale abandonment of sites between Hacılar VI and I is evident nonsense.

Hacılar I ware appears fully fledged at the site *c.* 5250 BC, and during the quarter of a millennium that its makers occupied the site it did not develop. The inference then is that, except at Hacılar and one or two other sites, Hacılar I ware when found *could* also be earlier. Above we have argued that the Hacılar I ware probably developed on a Hacılar VI–V basis, during the period Hacılar V–II, and only at the end of this period did Hacılar I people take over the site of Hacılar itself. The apparently strange situation, seen on so many mounds, of Hacılar VI ware followed by Hacılar I ware, could be perfectly normal and bears certain resemblances to the situation at Çatal Hüyük West and Mersin, where monochrome wares are succeeded by wares painted red on cream with bold linear designs. A similar situation is found in the Uşak region, according to the finds made by Bay Riza Incel, which are not yet published. Here, also, a bold linear style of red on cream pottery is found as well as earlier monochrome wares of the Hacılar VI variety.

This hypothetical solution of the problem, which ought to be tackled by excavations, suggests two parallel developments, of which that of the Hacılar V–II wares would seem to have been the unusual one, confined to a small number of sites. Why is Hacılar unusual? This is the question that needs answering as much as why Çatal Hüyük is unusual; for it would be as naïve to take these two sites as representative of the general level of culture during the neolithic and early chalcolithic culture in Anatolia as to judge the general level of culture of fifth-century Greece by the Parthenon, sixteenth-century Italy by the Sistine Chapel, or seventeenth- and eighteenth-century France by Versailles, to choose a few examples at random. What is unmistakable is that the artistic achievement of Çatal Hüyük and Hacılar clearly distinguish them from numerous other contemporary sites. And in this context it is as well to remember that great art is produced only by individual genius and not by committees, societies, or communities, and that good craftsmanship comes from rigorously trained small bodies of artists controlled by a master craftsman. For the production of creative art patronage is essential, and in an age where the only form of

authority could have been exercised by members of the established religion, priestesses and priests of what is vulgarly called 'Fertility cult', the force behind the creation of art must have been religious. As both Çatal Hüyük and Hacılar are outstanding examples of this religious art of Anatolia, it must be obvious that both sites were cult centres. This argument is fully supported by the vast number of shrines or sanctuaries at Çatal Hüyük and by the extraordinary series of statuettes from Hacılar VI, Hacılar V–II, and those recently recovered from the cemetery of Hacılar I. The symbolism of the painted pottery of Hacılar V–II, that of its predecessor, Hacılar VI with its relief vases, and that of its successor Hacılar I with its goddesses, animals heads, anthropomorphic and theriomorphic vases of all sorts and types, should show beyond any shadow of a doubt that Hacılar was not just a village of peasants, doomed to work the soil in long and joyless toil, haunted by fears of hunger and superstition, disease and hardship – the Victorian misconception of neolithic man, based on mistaken ideas of 'progress'.

Like Çatal Hüyük before, Hacılar would appear to have been a centre of culture, religious authority and, intimately linked with it, of art and craftsmanship. In modern terms, they were 'capitals' of some sort or other, comparable in rôle with cities such as Constantinople and Rome in the millennia to come, seats of religion, art, and thus power.

The rarity of Hacılar V–II pottery is no more surprising than that of, say, Iznik ware, for it was made in only a small number of workshops, that is by a few families, and it was vulnerable to any untoward happenings. The fire of Hacılar IIA reduced the number of workshops from three to two and, with the destruction of Hacılar IIB, production came to an end. There is nothing surprising in this, and ceramic history yields numerous parallels: workshop TT 6 at Arpachiyah, or Kültepe I B, marks the end of Tell Halaf ware and the spectacular Kültepe ware, destroyed as effectively as Ray or Raqqa during the Mongol invasion.

Relations With Other Cultures

The excellent quality of Hacılar wares further explains another feature: the absence of
438 any recognisable imports. There is only one certain importation (fig. 157) the base and lower part of a small jar (?), decorated with a pattern also found in bowls of Mersin XIX,[1] described as 'imported Halafian ware'. Clay analysis has shown that the sherd is not of local Hacılar I manufacture, but it is certainly not Halaf ware either, and it is painted in red on a dead white slipped ware. The comparison with the Mersin piece does not help, for the latter is an import itself, and as the Hacılar sherd comes from a deposit disturbed by peasant digging, its stratigraphical position within the four phases of Hacılar I is unknown. For chronological purposes the sherd is useless.

Not a single piece of Uşak ware was found at Hacılar, nor were any sherds of Çatal Hüyük West, early or late; nor for that matter was any painted Hacılar ware found on the sites of the Konya plain or in the region of Lakes Beyşehir and Seydişehir. No direct links with these cultures can therefore be established and it is only by general resemblances and radiocarbon dating that the contemporaneity of some of these cultures can be surmised, if not yet established. Here, indeed, there is plenty of scope for further work.

[1] *Preh. Mersin*, fig. 72:10.

Chapter 8. White Marble Vessels

Stone vessels are common in neolithic cultures, and in a number of them, such as the neolithic Khirokitia culture of Cyprus, or Pre-Pottery Neolithic B of Jericho and the earlier levels of Jarmo, stone vessels take the place of pottery. This has given rise to the idea that stone vessels preceded pottery in the Near East. But in Anatolia the picture is considerably more complicated because of the discovery of wood and basketry, perishable materials most often imperfectly preserved, if at all, in other places and therefore usually ignored in the discussions of the origins of pottery.

Such considerations do not very much concern us here; two fragments of marble bowls were found in the Aceramic settlement (fig. 165), which might indicate the use of marble bowls in the settlement around 7000 BC, but they could equally be imports from a more advanced centre. 'Evidence' of this sort proves nothing unless one has other sites for comparison and these we do not have. 447

After a long lacuna we find the use of marble bowls in Hacılar VI (there are no fragments from Hacılar IX, VIII or VII), where they are not only common in the settlement, but are distinguished by their size and sophistication. There can be no doubt that in a rich settlement of this nature, which knew very well how to make pottery, the presence of marble vessels, similar to the pottery shapes, indicates a luxury ware and nothing else. The pots were not copied from the stone vessels, but vice versa, and the marble bowls were the more permanent and precious possessions of the rich. The numerous mending holes clearly show how precious these vessels were.

Compared with the pottery of Hacılar VI, the stone bowls show certain characteristics: they have reinforced bases, thicker than the pots; they have three or four feet to break the shock when a full vessel is put on the floor and when they break it is at the carination where the walls of the vessel are abruptly diminishing in thickness (pls. CXII, CXIII). All are well carved and polished. The distribution of marble bowls at Hacılar is revealing: they are common in the burnt ruins of Hacılar VI, but after that their numbers dwindle rapidly. There are only three pieces in Hacılar V, one in IV, a fragment in III, a few in IIB (the burnt settlement), but *none* in Hacılar I. The conclusion to be drawn is that after the late neolithic period, marble bowls gradually fell into disuse to disappear altogether in Hacılar I, which was otherwise a rich and prosperous period. 166, 167

HACILAR VI

Hacılar VI has the richest series of white marble bowls (figs. 159–61) ranging from 439–41

small bowls with a diameter of 11·5 cm to giant bowls with diameters of up to 38–40 cm (fig. 160).

There are bowls with almost vertical sides and others with a gracefully curved profile, on disc bases with slightly raised centres or supported by three or four feet. Some of
166–8 the larger bowls have two vertically perforated lugs (figs. 159–61; pls. CXII–CXIV). Much rarer are simple bowls or dishes (with profiled rim) on three or four stumpy feet (fig. 159:10, 11) and small bowls on three high feet (fig. 159:3), restored like the complete example from a level V grave (fig. 162:1). Jars (fig. 159:6) are uncommon in stone, but there are curious, shallow, semicircular dishes, possibly palettes (fig.
442 161:4) the shape of which cannot be restored. These reappear in Hacılar V (fig. 162:3)
445 and in II (fig. 164:1).

HACILAR V–III

Whereas the white marble bowls of Hacılar VI are distinguished in shape and finish, a marked decline in the stone vessels industry is evident in the later layers. The few
442, 167 pieces from Hacılar V and IV are illustrated in fig. 162 and pl. CXIII. The bowl on three feet, found in a grave, may have been an heirloom of Hacılar VI; the sherd (fig. 162:2) shows numerous mending holes, and the 'palette' (fig. 162:3) is indifferently made. In contrast, the remains of the Hacılar IV bowl (fig. 162:4) show a well-made vessel, gracefully curved like the pottery of the period. There is a single bowl fragment from
446 Hacılar III (fig. 164:8).

HACILAR IIA

From the burnt remains of the Hacılar IIA and IIB came a small number of marble bowl fragments, which contrasts sharply with their total disappearance in Hacılar I.
443 Nearly all of these date from Hacılar IIB, the later settlement, and only fig. 163:1–3 and 9 are securely dated to Hacılar IIA, having been found on the floor of a burnt house (B.IIA) of this period. It should be noted that a good number of fragments of stone vessels come from the Hacılar IIB shrine (Q.II, 1 and 2) (figs. 163 : 10, 14;
443–4, 445–6 164:3, 5, 6, 7).

443–4 The earlier vessels are all miniatures (fig. 163:1–3 and 9). The most interesting is an
168 oval cup with a ram's head carved in fairly high relief (fig. 163:9; pl. CXIV), the sort of vessel that is found in pottery as early as Çatal Hüyük III. A fragmentary little jar in green plutonic rock (fig. 163:3), unfinished, shows clear drilling marks in the interior. It probably broke in the process of manufacture and was discarded. A small bowl on three feet (fig. 163:2), rather clumsily made in whitish marble, perpetuates earlier versions more familiar from Hacılar VI and V. Found during the first week of our excavations at Hacılar in 1957, when we still trusted our workmen, it was stolen and is now in the H. Kocabaş Museum in Istanbul. The miniature bowl (fig. 163:1) is made of white marble with blue veins; it is well made and has a neat bead rim and a
168 small pedestal base (pl. CXIV).

HACILAR IIB

443–6 The other vessels in figs. 163 and 164 came from houses or deposits of the Hacılar IIB period. They include small bowls with or without disc bases (fig. 163:4, 5, 7, 8), larger vessels of which only the rims are preserved (figs. 163:10, 11; 164:6, 7), an

archaic hole-mouth jar (fig. 164:3), a fine vessel comparable to that of Hacılar IV (fig. 164:4, cf. fig. 162:4), a deep bowl with incised design (fig. 164:5), a palette (fig. 164:1), a clumsily heavy bowl (fig. 164:2), and a set of vessels on three feet. These pedestalled vessels (fig. 163:12–17) continue the old tradition of the late neolithic, but it seems that they are now provided with three feet, whereas in the earlier period there were some with three and many others with four feet. In the pre-Hacılar period, bowls with four feet, whether round or L-shaped, appear to have been the rule. A further feature of all these Hacılar IIB tripod bowls is their shallowness: they are 'soup plates' or dishes, rather than bowls (as in Hacılar VI and V). Their forms are heavy, their profiles clumsy, and their stumpy feet are quite inadequate. One perceives the end of a long tradition. Fig. 163:15 still retains some of the qualities of the Hacılar V type, which is, nevertheless, far more elegant; fig. 163:13 cannot stand properly on its inadequate feet. Fig. 163:16 or 17 are sensible shapes, but fig. 163:12 and 14 would stand just as well without their vestigial feet.

It is possible that we read too much into these few representatives of the class of marble bowls, but one cannot escape the uncomfortable feeling that, after the end of the late neolithic, that is Hacılar VI, this once flourishing industry declined. If one is wrong, future discoveries will no doubt correct the impression. From Hacılar I not a single fragment of a stone bowl is known and on the evidence available one must conclude that this craft was by then extinct.

Catalogue of Stone Bowls and Fragments Illustrated.
White marble, if not otherwise indicated.

HACILAR VI. Figure 159 439

1. Q.VI. House 5, diam. 16 cm
2. Q.VI. 1 (kitchen of house 4), diam. 17 cm (60/430)
3. Q.VI.2, diam. 11·5 cm
4. P.VI. House 1, diam. 18 cm
5. Q.VI. House 5, diam. 16 cm; four legs
6. P.VI. House 1, diam. 14·5 cm; base calcined
7. P.VI. House 1, diam. 20 cm; three legs
8. P.VI. House 2, diam. 18 cm; base calcined
9. Q.VI. House 3 (kitchen), diam. 23·5 cm; four feet
10. P.VI. House 1, diam. 22 cm; probably base on feet
11. P.VI. House 1 (fallen from upper storey), max. diam. 21·5 cm

HACILAR VI. Figure 160 440

1. Q.VI.3, diam. 29 cm; base calcined, three or four feet
2. Q. VI. House 5, diam. 38 cm; calcined
3. Q.VI. House 5 (60/630), diam. 37 cm; base lost; pl. CXII:d 166

HACILAR VI. Figure 161 441

1. P.VI. House 1, diam. 20 cm
2. Q.VI. House 5, diam. *c.* 20 cm
3. Q.VI. House 5, diam. 22 cm

4. P.VI. House 2 (60/448), palette (?), diam. 32 (?) cm
5. Q.VI. House 5, diam. 26 cm
6. Q.VI. House 5
7. P.VI. House 1, diam. 18 cm; mending hole

442 HACILAR V, IV. Figure 162

167 1. Q.V. Top burial in house 2 (60/426); pl. CXIII:a
2. P.V. diam. 12 cm; four mending holes
3. Q.V. (60/496); broken palette
4. P.IV. (60/442) fragment with mending holes, diam. 20 cm

443–4 HACILAR II. Figure 163

IIA

1. House B.II (57/9)
2. House B.II (now in H. Kocabaş Museum, Istanbul)
3. House B.II (57/17); light green plutonic rock
9. House B.II (57/19)

IIB

4. Q.II.2 (shrine) (59/343)
5. A.II.2 (57/62)
6. A.II.1 (57/4)
7. B.IIB
8. A.II (57/109)
10. Q.II.1 (shrine)
11. N.II.4
12. N.II.4
13. N.II.6 (59/312)
14. Q. II.1 (shrine) (59/345)
15. P.II.2 (59/338)
16. N.II.4 (59/346)
17. A.II.2 (57/29)

445–6 HACILAR II. Figure 164

1. B.IIA
2. N.II.6 (59/344)
3. Q.II.1 (shrine)
4. F.IIA (58/162)
5. Q.II.1 (shrine) (59/347)
6. Q.II.1 (shrine)
7. Q.II.2 (shrine)

446 HACILAR III. Figure 164

8. C.III (57/57)

Chapter 9. Small Finds and Local Industries

Other parts of this report have dealt with the architectural remains, the few graves, the site chronology and the pottery and stone vessels. There remains the discussion of the many and varied crafts practised in the settlements: the industries in chipped flint and obsidian, in polished stone, antler, bone and baked clay, which will be described in that order. Impressions of cloth, coiled baskets or twilled matting have survived and it is obvious that many objects and commodities of every-day usage were made of perishable materials. At Hacılar these have unfortunately not survived. There are no objects of wood, no fragments of cloth or leather, no skin or felt, materials the use of which may be safely assumed. The use of copper is certain, and traces of it have survived as green stains on the interiors of pots in Hacılar VII and VI or as minute fragments (of beads, pins or awls) in Hacılar IIA, IIB and IA–B. The shape of not a single metal object was recognisable, and finds of copper are rare. Generally speaking the industries of Hacılar IX–ID are still those of the stone age and the conventional terminology used is misleading.

As on all archaeological habitation sites it is only in the burnt levels that objects are left *in situ*, that is to say, at Hacılar, in levels VI, IIA, IIB and IB. In the other levels we only found objects broken or discarded or accidentally lost. Compared with the vast amount of pottery and the considerable number of statuette fragments, especially in Hacılar VI, other objects of all sorts are rare. It is usual enough to find a score or more pots in a single room, but it is unusual to find more than half a dozen spoons or axes. Articles of personal adornment are very infrequent indeed and even chipped stone tools are by no means abundant.

Chipped Stone Industry

Figures 166–8; plate CXV: a,b 447–9, 169

Peder Mortensen

The collection available for the description of the chipped stone industry is very small. From the aceramic, the late neolithic and the chalcolithic levels we only have 667 pieces of chipped stone, more than 85 per cent of which is débitage, that is cores, flakes, and blades without any signs of characteristic and deliberate retouch.

Most of the material used for flaking is greyish-brown tabular flint or chert of local origin. In the following account no attempt has been made to distinguish between these two varieties of chalcedonic silica. They are both referred to as flint. Thirty-six per cent of the aceramic material and 42 per cent of the late neolithic and chalcolithic

materials are made of obsidian, showing a grey or smoky colour in transmitted light. Four pieces which have been analysed indicate that the obsidian at Hacılar comes from a source 8 kilometres east of Acigöl-Topada, 11 kilometres south-west of Nevşehir, on the Akşaray road (Renfrew, Dixon and Cann, 1966, p. 62–3).

The aceramic levels at Hacılar revealed only 11 pieces of flint and obsidian:

447 1 conical *blade-core* with an oval striking platform (fig. 166a). Height 3·9 cm
2 *flakes* (fig. 166b–c). Length 3·8–4·9 cm
4 *blades* and *blade fragments* (fig. 166d–e). Length 2·2–4·1 cm
1 fragmentary *arrowhead* made on a strong flint blade, irregularly chipped along the edges, and with a short tang, steeply retouched on the obverse (fig. 166f). Length of fragment 4·2 cm
1 fragmentary *dagger* (?), made on a core, the obverse of which is worked out by lamellar pressure-flaking (fig. 166g). The reverse is partly covered by cortex. This piece did possibly break before it was finished. Length of fragment 5·2 cm
1 *core knife* made from a narrow blade core one edge of which is bifacially prepared by a flat squamous retouch (fig. 166h). Length 4·5 cm
1 *blade section with a steeply retouched notch* on one edge (fig. 166i). Length 2·4 cm

If one can judge from this small collection, the aceramic chipped stone industry at Hacılar is primarily based on blades and blade cores. And it can be stated that unifacial lamellar pressure-flaking and bifacial squamous edge retouch occur.

In general the aceramic habitation, tentatively dated to about 7000 BC, seems to be contemporary with Suberde and Aşikli Hüyük in Central Anatolia. Since the chipped stone industry of aceramic Hacılar is very sparsely represented it is, however, impossible to get a real impression of its relation to these sites. But the implements illustrated from the surface collection at Suberde (Solecki, 1964, figs. 4–6), and the description of its chipped stone implements as being essentially microlithic in size (Bordaz, 1965, p. 31), do not suggest any resemblance to Hacılar. The rich surface collection from Aşikli Hüyük shows an industry principally based on blades, and with scrapers as a dominating group. Lamellar pressure-flaking occurs but is rare and not so well executed as at Hacılar (Todd, 1966, fig. 2:17 and 19). Most of the arrowheads are characterised by a short, steeply retouched tang, similar to the fragmentary arrowhead from Hacılar (cf. fig. 166f with Todd, 1966, fig. 1:3 and 5–6).

In the late neolithic and chalcolithic levels were found 656 pieces of flint and obsidian:

448 Conical and cylindrical *blade-cores* (fig. 167a–e), pointed at one end opposite the circular or oval striking platform. The scars are regular, usually covering the whole surface of the cores. Height 3·1–8·7 cm
Ovoid *cores with irregular scars from flaking* in several directions on the surface (fig. 167f–g). Lumps of this kind might perhaps have been used as raw material for the preparation of blade-cores, but since they are smaller than many of those, it is more likely that they have had a special function of their own. Unfortunately,

it has not been possible to distinguish any traces of wear which might indicate their use. By size, shape, and weight they would be well fitted for use as sling-stones. Height 3·6–4·7 cm

Flakes (fig. 167h), some of them with cortex partly preserved. The group is not uniform and seems to represent waste materials. Diameter 2·1–4·2 cm

Blades, generally long, strong, and regularly struck from the cores, representing an excellent technique (fig. 167i–p). The edges are straight and parallel, and the obverse has got two or three scars from previous flaking running parallel to the edges. Use-retouch is visible on a few blades (fig. 167k–l), indicating that blades of this kind have functioned without further treatment, e.g. as knives. Length 3·3–12·6 cm, average length 6–9 cm

In level VI was found a hoard comprising 363 *micro-blades*, all made of flint (fig. 167q–v). It is most likely that these blades are raw material for the preparation of micro-points like those shown on fig. 168k–m. Length 2·1–4·9 cm 449

Pendant made on a cylindrical core of obsidian (fig. 168a). A horizontal 1 mm deep groove has been cut around the core 5 mm below the top. Height 3·7 cm

Scrapers made on sub-rectangular or circular flakes with partial steep or semi-steep edge retouch (fig. 168b–c). Diameter 3·1–5·2 cm

End-of-blade scrapers with a semi-steep convex or straight edge at one end (fig. 168d–e). One of the blades is irregularly chipped along the edges (fig. 168d), the other is blunted by a coarse semi-steep retouch all along the edges (fig. 168e). Length 5·9–7·9 cm

Angular blade knife made on a strong blade by the intersection at one end of an oblique retouch and an angular retouched notch, producing a burin-like cutting edge (fig. 168f). Length 6·2 cm

Sickle blades of flint with silica sheen along one edge (fig. 168g–i). The blades are sometimes irregularly retouched and the bulb of percussion is often broken off in order to produce a blade with a slender longitudinal section, suitable for setting into a sickle handle. Six such handles of polished antler were found in level VI, one of them with seven blade sections still preserved *in situ* forming a 20 cm long cutting edge (fig. 178). Length 2·6–9·6 cm 460

A few irregularly *serrated blades* of obsidian may have been used as sickle blades (fig. 168j). Length 3·4–4·2 cm

Micro-points produced on micro-blade sections, the ends of which are retouched diagonally to the axis of the blades (fig. 168k–m). The retouch is steep, 449 directed from the bulbar face. As indicated by ethnographic parallels points of this kind were probably used as elements in spears or projectiles (cf. Allchin, 1966, p. 203). Length 1·9–2·6 cm

Irregularly *retouched flakes* (fig. 168n–o) and *blades* (fig. 168p–r). Length 2·8–6·9 cm

The number and distribution throughout the levels of the types described above are shown in Table 1. It is notable that the industry is based on excellent blades and micro-blades, constituting about 90 per cent of the material. The remaining 10 per cent are

mainly blade and flake-cores, and a few flake scrapers and retouched flakes, most of which are made of flint.

Table 1. The distribution of flint and obsidian throughout the late neolithic and chalcolithic levels.

	CHALCOLITHIC LEVELS					LATE NEOLITHIC LEVELS				
TYPES	I	II	III	IV	V	VI	VII	VIII	IX	TOTAL
Blade-cores	1	6		2		26		2	1	38
Flake-cores	4					2				6
Flakes	1	5				4	1			11
Blades	9	35		3	3	58		10	20	138
Micro-blades						363				363
Core pendant						1				1
Flake scrapers	1					2			1	4
End-of-blade scrapers	1	1								2
Angular blade knife						1				1
Sickle blades	1					9		1	1	12
Serrated blades	1	3				2				6
Micro-points						4				4
Retouched flakes		4				2			1	7
Retouched blades	5	28		1	8	11		1	9	63
TOTAL NUMBER	24	82		6	11	485	1	14	33	656

The type range seems to reflect an unbroken chipped stone tradition throughout the late neolithic and chalcolithic levels. But at the moment it is not possible to point to any evident predecessors for the late neolithic chipped stone industry at Hacılar, and it is also difficult to find any contemporary Anatolian industries which are related to Hacılar.

It might have been expected that the younger part of Çatal Hüyük, which seems to be contemporary with late neolithic Hacılar, would exhibit some resemblances. But the dissimilarities between the two sites are more obvious. The Hacılar chipped stone industry is based on blades to a much higher degree than at the upper levels at Çatal Hüyük, and in contrast to late neolithic Hacılar lamellar pressure-flaking is well known at Çatal Hüyük (Bialor, 1962, figs. 7–12). Where Hacılar shows a very restricted type range Çatal Hüyük has got 43 different types of tools and weapons in levels II–III (Mortensen, 1964, p. 16. fig. 12), comprising, for example, borers, burins, chisels, arrowheads, spearheads, and daggers, all types that are completely unknown at late neolithic and chalcolithic Hacılar. Finally, at Hacılar flint is dominating compared to obsidian, whereas at Çatal Hüyük II–III more than 95 per cent of the tools are made of obsidian (Renfrew, Dixon and Cann, 1966, p. 59). This difference may of course

be due to Hacılar's geographical position more than 300 kilometres away from the obsidian sources.

The dissimilarity between the chipped stone industry of Hacılar and its eastern contemporaries (Çatal Hüyük, Mersin XIX–XXXIII, etc.) leaves us with the impression that the Hacılar late neolithic and chalcolithic chipped stone industry is rather isolated. We can only hope that future exploration in South West Anatolia will reveal its origin and relations. A hint in this direction is perhaps given by a survey carried out on the lower stretches of the rivers Gediz and Büyük Menderes where one site, Morali (French, 1965, p. 17, fig. 2) produced a small collection of worked flint and obsidian which seems to bear a considerable resemblance to the chipped stone industry of Hacılar

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Polished Stone Industry

In sharp contrast to the decadent chipped stone industry, the polished stone industry evidently flourished. Not only were numerous bowls of white marble found in Hacılar VI, V, IV and II, but there is some evidence for stone statues, though none were found in our excavations.

Most numerous among the ground and polished stone tools are axes, with a few possible adzes (none very distinct), chisels and miniature versions of the same tools for finer work (figs. 169–71). These are the common carpenters' tools, found in every 451–3
'neolithic' settlement. Fully polished axes already occur in the aceramic neolithic period (pl. va) and they were not subject to much change. The material is nearly 5
always a green-stone, especially in the lower levels, but in Hacılar II and IA purplish rock is also commonly used. The varieties of shape are illustrated in fig. 169, from 451
Hacılar IIB (pl. CXVI:b), but the same varieties could be shown from Hacılar VI 170
(pl. CXV:d). Variations of shape are frequent, but they do not appear to have any 169
chronological significance at Hacılar. Typological subdivision is therefore omitted as irrelevant.

Far more interesting is the discovery of a number of chisels and axes with their

452 antler sleeves (fig. 170), or the latter by themselves. These come from level IV and II (chisels) and from level I (axes); but they are obviously accidents of discovery and the use of antler sleeves was probably general. Each has two holes, one for attachment to a wooden handle, the other for the insertion of the axe or chisel. As bitumen was unknown, some sort of resin was probably used. A roll of birch bark was found in house P.VI.1 and pines grew round the site, so it is clear that adhesives were easy to come by.

453 Even more interesting is the antler handle, found with axe in house Q.VI.4 (fig. 171;
169 pl. CXV:e), which foreshadows the axes of the Swiss and Danish neolithic. The lower end of the handle is unfortunately burnt and broken.

The only weapons in use at Hacılar were the sling and the mace. As ammunition
171 for the sling we have baked clay missiles in Hacılar VI (pl. CXVII:b), but maceheads
454, 171 were still made of polished stone (fig. 172; pl. CXVII). There are only four of these: a fragmentary 'apple-shaped' one in white limestone from level I (fig. 172:1); an egg-shaped one in burnt mauve stone (fig. 172:3) from level IIB; and two that are 'pear-shaped', one from level IIB (fig. 172:2) in reddish brown stone, the other in blue-veined white limestone (fig. 172:4; pl. CXVII:f) from Hacılar VI. One has the impression that maceheads were far more common at Çatal Hüyük, which may of course be connected with the decline in hunting at Hacılar.

Grooved stones are as characteristic of Hacılar as they were of Çatal Hüyük (fig.
455, 170 173; pl. CXVI). The groove is always highly polished from contact with the objects polished in them (fatty bone tools?). Such stones could have been used in a variety of ways, but the usual explanations given – such as arrow straighteners or net sinkers – are inappropriate at Hacılar where the bow and arrow was unknown and where fishing was not much practised, the river and lake containing sulphur and arsenic respectively. Two main types are found: anvil shaped (fig. 173:1 and 2) from levels VI and IIB, and round (fig. 173:3) from level IIA. The earliest example bears two grooves, one on top, the other on the side, and is ornamented with incised lines.

456 Flat sandstone palettes were found in levels VII and VI (fig. 174:1–2), whereas the later palettes are of limestone and provided with a flat rim (fig. 174:3) in levels II and III. Sometimes they are perforated, as in the example illustrated. Such palettes are fairly common and may have been used for preparing the paint.

456 A small pounder of greenstone from level IIB is shown in fig. 174:4 and there are
169 others from level VI (pl. CXV:c). From this same level there are fine pebbles (fig. 174:5), evidently used for burnishing pottery; other small burnishers of the same shape are made in bone.

457–8 JEWELLERY. Figures 175–6

A fair number of beads was found within the settlement, whereas at Çatal Hüyük such finds are almost all confined to burials. At Hacılar necklaces of beads were deposited with the dead (reg. nos. 460, 429).

Beads were made from the following materials: blue or green apatite, as at Kızılkaya and Çatal Hüyük (the provenance of this material, held in great esteem during the neolithic period, is unknown). Obsidian was used rarely (level VI, reg. no. 468).

Far more common were local limestones, blue, black, red, brown, pink, cream and white as well as white marble. Greenstone beads are unknown, nor is there any evidence for beads made of red or yellow ochre, such as were found at Çatal Hüyük. Dentalium shells were rarely used (two examples, in Hacılar VI and IV) and cardium shells (cockle) were found only in Hacılar I, room 5 (three examples perforated as pendants).

Unlike Çatal Hüyük, Hacılar has not produced any necklaces composed of more than one sort of stone and as a result, its monochrome necklaces are somewhat dull (pl. CXXIV:n). The shapes of the individual beads lack the sophistication of Çatal 179
Hüyük and they are usually disc or barrel-shaped, with a sprinkling of tubular and biconical forms. The lozenge shape, common at Çatal Hüyük, occurs only once in level III (fig. 175:11). The biconical type occurs first in Hacılar I and may bear pointille 457
ornament. It resembles the spindle whorls of level VI (pl. CXVII:b). 171

HACILAR I. Figure 175:1–4b 457

1, 2. Room 19. Blue apatite (350)
3. White marble
4. Shell
4a. Blue limestone
4b. Brown limestone

HACILAR II. Figure 175:5–7 457

Blue apatite beads. House A.II.2 (39)

HACILAR III. Figure 175:8–11 457

Elements of necklace (59) white limestone. Area C.III.

HACILAR IV. Figure 175:12–14 457

Elements of necklace from grave in P.IV (460).
Pink stone, 24 beads (8 large, 2 medium, 14 small)

HACILAR V–VI. Figure 175:15–18 457

Five beads from grave 2 in house Q.VI.2 (429).
Corroded surface – white stone or bone?

HACILAR VI. Figure 175:19–26 457

19. P.VI.1 (468). Pink stone
20. Q.VI.3. White marble
21. Q.VI.3. Cream limestone
22. Q.VI.3. Pink limestone
23. Q.VI.3. Brown limestone
24. P.VI.1. (468). Black obsidian
25. P.VI.1 (249). Brown limestone
26. A.VI. (112). Black limestone

HACILAR VII. Figure 175:27 457

Q.VII.2. Red sandstone

Apart from beads, perforated for stringing on to a thread, there are a few objects that can only be described as buttons (fig. 175:28–9). They are made of white marble, are perfectly spherical and came from houses Q.VI.3 and kitchen of Q.VI.4. Both have V-shaped perforations (repeated on no. 29 after a false start), and are larger in size

than the fine variegated marble spheres (e.g. fig. 175:32) which are found in levels VI, V and III and are probably marbles used for a children's game. It is unlikely that these marbles are unfinished buttons.

Two further objects (fig. 175:30, 31) came from the kitchen of house Q.VI.4 and were made of reddish-yellow limestone and pink-white marble, badly burnt. Both have a deep groove near the base for attachment. Such objects have been found at other sites and are frequently described as earplugs, noseplugs, studs, etc., but their use is by no means firmly established. A similar 'stud' from house P.VI.1 was found with a miniature
458 mortar (fig. 176:16–17) and suggests use as a pestle for grinding cosmetics. The pestle
179 (443) is made of white marble, the mortar (467) of yellow limestone (pl. CXXIV:i).

Pendants. Small pendants, perforated for attachment to a string, singly or as part of a necklace (on analogy with Çatal Hüyük), are not uncommon at Hacılar in the same materials: mother of pearl, slate, shell, and various stones: white marble, brown and
458, 179 black limestone, serpentine, and white and red striped rock (fig. 176: pl. CXXIV).

Most of these pendants are simple in shape: discs (fig. 176:5, 11, 15), oval (fig. 176: 7, 14), leaf-shaped (fig. 176:3, 6), triangular (fig. 176:4), rectangular (fig. 176:8), and trapezoid (fig. 176:12, 13). Others imitate fish-hooks (fig. 176:2) or are cut from a sea shell (fig. 176:21).

There remain three naturalistic pendants: a fine goddess figure in mother of pearl (fig. 176:1), a serpentine head of a horned animal (fig. 176:9), and a black limestone bovid (fig. 176:10), all from Hacılar VI.

458 Figure 176

1. Mother of pearl. A.VI. (110)
2. Mother of pearl. Q.VI.5. (527) Pair
3. Mother of pearl. P.VI.1. (504)
4. Grey slate. C.III (97)
5. Shell. Q.VI.3
6. Mother of pearl. N.II. Court (316)
7. Mother of pearl. Q.II. Shrine (333)
8. Mother of pearl. R.II. House (437)
9. Serpentine. P.VI area (454)
10. Black limestone. Q.VI.3 (434)
11. Black limestone. Q.VII.2
12. White marble. Q.VI.3 (burnt)
13. White and red stone. P.VI.1 (469)
14. Brown limestone. P.VI.1 (466)
15. White marble. Q.VI.4 (kitchen)
16. Yellow limestone. P.VI.1 (467)
17. White marble. P. VI.1 (443)
18. Polished bone. P.VII (445)
19. Polished bone. Q.VI.4 (kitchen)
20. Polished bone. A.II.3 (25)
21. Polished shell. P.VI.1 (470)

Finger-rings and bracelets. Three bone rings were found: one in Hacılar VII (fig. 176:18), which is very broad, and two narrow ones in Hacılar VI and II (fig. 176: 458
19–20). A fragment of a ring carved from shell was found in Hacılar I, and from room 2 of the same building-level comes half a bracelet of brown limestone (195) (pl. CXXIV:m). It has perforations at both ends for attachment to the other half, an 179
improvement on the one-piece bracelets in stone from Çatal Hüyük.

Lamps. Three lamps, heavily burned, were found in the houses of the Hacılar VI settlement (pl. CXVII:a). All are made from fossil specimens of *Gryphaea* (?), 9–11 cm 171
in length, and have the narrow curving end cut off.

HEAVY STONE IMPLEMENTS

Besides numerous faceted polishing stones (pl. CXV:c) there were a great number 169
of mortars, saddle querns and rubbers, made of local rocks, a selection of which is illustrated in pl. CXVI:d–f. The gritty sandstones and igneous rocks used for 170
grinding wheat (pls. CXVI:e) have left their marks on the teeth of the Hacılar skeletons, which are ground down to the gums. Dental complaints must have been widespread in marked contrast to the rarity of bad teeth at Çatal Hüyük.

Antler and Bone Industries

ANTLER

Red Deer antler was used at Hacılar for handles of a number of tools and implements. There is the handle for an axe from Hacılar VI (fig. 171); chisel handles from levels IV 453
and II (fig. 170:1–3), and antler sleeve for axes in Hacılar I (fig. 170:4–6). 452

A small antler pick from Hacılar I (fig. 170:7) may have been used in agriculture, but this is by no means certain.

The finest objects made of antler are the sickles of Hacılar VI, of which we have six complete (figs. 177–9; pl. CXX) as well as four more fragmentary examples (435 from 459–61, 175
house Q.VI.4 (kitchen); 436a, b from house Q.VI.2 and a burnt tip from house P.VI.2). With ten specimens from a dozen houses, sickles were evidently part of the normal furnishings of a late neolithic house.

The Hacılar VI sickles are all of the same curved type, previously attested in Çatal Hüyük VI, *c.* 5900 BC. Three come from house P.VI.1 (480, fig. 177:2; 481, fig. 178:1; 459–61
and 479, fig. 179:2); the others come from house Q.VI.4 (432, fig. 177:1), Q.VI.6 (499, fig. 178:1) and Q.VI.3 (561, fig. 179:1). The tips are either cut straight or carved into a knob (fig. 178:1, 481 and 436, not illustrated), and no. 480 (fig. 177:2) has a carving, possibly that of an animal head at the other end. All are provided with a deep V-shaped groove in which the sickle blades were set in a binding medium, probably resin (fig. 178). Where these blades were found *in situ*, there were in both cases seven pieces of chert, brown, red or buff (but not obsidian), and whereas those of fig. 178:1 showed no silica sheen, those of fig. 178:2 had a fine gloss.

A possible reaping knife of different type was found with a deposit of carbonised wheat in the well of Hacılar II, area P, dating from the very end of level II or from the filling-in at the beginning of Hacılar I. This fragmentary tool (422) (fig. 179:3) is 461
straight and is provided with a groove on both sides of the upper end. The findspot suggests that it is a reaping knife rather than a harpoon, which would be an exotic

and unnecessary implement in the fishless surroundings of Hacılar.

459 Figure 177

1. Q.VI.4 (432) smoothed only
2. P.VI.1 (480) partly polished; carved end

460 Figure 178

1. P.VI.1 (481) fine polished; seven chert blades
2. Q.VI.6 (499) polished; seven chert blades, lustre

461 Figure 179

1. Q.VI.3 (561) finely polished
2. P.VI.1 (479) very fine polish
3. P.II. Well (422) double groove

POLISHED BONE

Extensive use was made in Hacılar of carved and polished animal bones, especially ribs of cattle, which lend themselves to the productions of spatulae (flat spoons), pins, etc., whereas leg bones of sheep and goat made excellent awls; knuckle bones of the søme animals were used for the game of *aşık*.

462–5 The most common tools are spatulae (figs. 180–3) occurring in all building-levels
466 from Hacılar IX–I; awls (fig. 184:9–11) occurring from the aceramic to Hacılar I; modelling sticks pointed at both ends (fig. 184:12–16), common in levels VI–II;
467 and belt fasteners (fig. 185) ranging from Hacılar VI–I (?). Less common are pins (fig. 184:1–3), bone tools of unknown purpose (fig. 184:4–7), and there is only one bone needle from B.V. (no. 48) and one bodkin from level III (no. 41, not illustrated). Bone tubes are equally rare; there was one from area C, level III (no. 58).

176 *Spatulae*. Whereas spoons (pl. CXXI:c) and ladles or scoops are made of clay at Hacılar, spatulae are always made of bone, as at Çatal Hüyük. In Hacılar VI, fourteen whole or fragmentary specimens were found, but only two in level IV, four in level II and two in level I. Most of these are plain, but some are decorated: in level VI with animal heads
462–3 (figs. 180–1); one, in level IX, with a woman's head in a horned head-dress (fig. 181:3), one with the head of a bitch carrying three puppies (fig. 181:1). Another is carved
464 in the form of a swimming bird (fig. 182:1, level VI) and two others from level IV
464, 465 (fig. 182:2–3) have carved end-pieces. Finally, one spatula from level II (fig. 183:4) has heads or buds carved on the handle.

Many spatulae show signs of wear which often leads to a lopsided bowl of the spoon (fig. 183:6). The early examples are more carefully carved than the later ones, but care
465 was bestowed on all. The exact use of this tool is unknown: it could serve as a spoon for paste, porridge, pease or other non-liquid foods; but it could also be used for scraping flour from the grinding stones, which would ultimately lead to abraded left or right edges, depending on the left or right handedness of the person using it.

462–5, 175–9 Figures 180–3; plates CXX, CXXI:a, CXXII:a, c, CXXIII:a, CXXIV:k, l.

462, 463 Figure 180

1. P.VI.1 (473)
2. P.VI.1 (475)
3. Q.VI.4 (kitchen) (427) and P.VI.1 (477)

Figure 181

1. Q.VI.4 (kitchen) (428)
2. Q. VI.5 (530)
3. Q.IX (472)

v. Hacılar VI. Statuette (cf. vol.2, pl.CXXXIX and fig.211)

Figure 182

1. Q.VI.4 (502)
2. Q.IV (503)
3. P.IV (461)
4. Q.VI.2 (433)
5. P.VI.1 (476)
6. Q.VI.4 (kitchen) (431)

Figure 183 464, 465

1. P.IIa
2. N.II.4
3. N.II, court
4. L.II (228)
5. G.I (161)
6. N.I (339)

Pins, awls, modelling sticks, etc. (pl. CXXI). Most pins have carved heads. A fine example 176
(471) (fig. 184:1) came from a grave (level V) in house Q.VI.6. Fig. 184:2 has a head 466
carved like that of a figurine, with a bun of hair at the back; fig. 184:3 and 4 are carved into hands with fingers. The use of such objects as fig. 184:5 and 6 is unknown. The plaque, fig. 184:7 may be compared with the baked clay plaque (fig. 184:8) and could be regarded as a wristguard (pl. CXXI:d) but for the absence of the bow and arrow at 176
Hacılar. A different use is almost certain.

The awls (fig. 184:9–11) and the modelling sticks (fig. 184:12–16) need no 466
comment; the frequence of the awls explains the rarity of borers in the stone industry and they were obviously used for leather-working. Needles are almost non existent The pointed bone sticks were probably used for modelling clay statuettes, but they could have served for other purposes also.

Figure 184 466

1. Q.VI.6 (grave) (471)
2. P. IV
3. Q. II.2 (shrine) (337)
4. M.II (250)
5. J.I (190)
6. N.II, court
7. Q.VI.2 (439)
8. Clay plaque. C.III (56)
9. Aceramic, floor I
10. Q.VI.4 (501)
11. Q.VI.3
12. P.IV
13. P.IIa
14. N.II.b
15. P.IV
16. Q.VI.4

Belt fasteners. It is only since the excavations at Çatal Hüyük that the use of such bone objects as are illustrated in fig. 185 (and pl. CXXI:f, g) has been recognised. 467, 176
Hooks and eyes of polished bone served to fasten leather belts,[1] and these same types of object re-occur in Hacılar VI (fig. 185:1–4). Later versions of the hooks are shown in 467
fig. 185:5–6 from level II, and fig. 185:7, from Hacılar III, and the fragmentary flat plaques with holes for sewing onto the leather belt re-occur in Hacılar VI (fig. 185:8) and I (fig. 185:9). The bone plaque (fig. 185:10) may have had another purpose.

Figure 185 467

1. Q.VI.3
2. Q.VI.5
3. Q.VI.5
4. Q.VI.5
5. N.II, court (341)
6. N.II, court (326)
7. P.III
8. Q.VI.5
9. I, room 3 (206)
10. I, room 19 (336)

[1] *AS*, XIII (1963) pl. XXVIIc, d; XIV (1964) 100, figs. 43:17, 19; 44.

Objects in Clay

Besides pottery, statuettes, figurines and coarse undecorated spindle-whorls, bi-
171, 457 conical in Hacılar VI (pl. CXVII:b and fig. 175:33), and cut from potsherds with a hole in them during Hacılar V–I, there are few objects of baked clay.

From Hacılar VI, house Q.3, came two fragments of a dark burnished plaque (517)
463 (fig. 181) with an incised and partly raised pattern that is reminiscent of the plan of a Hacılar VI house with doors, oven and partitions. The drawing, however, remains enigmatic, and the use of the plaque unknown in the absence of any parallels
172 (pl. CXVIII:a). A coarsely baked object found on the floor of house B.II (phase A),
170, 470 pl. CXVI: c and fig. 188, is equally enigmatic and resembles a mould.

'*Seals*'. A small group of clay objects with small handles on the upper and an incised
469, 173 design on the lower surface are illustrated in fig. 187:1–7 and pl. CXIX. Of these seven examples, nos. 1, 5, 6 are unstratified and the others all come from Hacılar IIB. Such objects are also common at Çatal Hüyük,[1] and in neolithic layers in Syria, Greece and the Balkans (Starčevo culture). They are usually interpreted as being *pintaderas*, stamps used by primitive people to apply painted patterns to their skins. It is by no means certain that these stamps were used in this way in neolithic times: they could have been used to stamp patterns on to cloth. What does seem certain is that they were not used for marking clay sealings, for these would have survived and in any case this use of the stamp is not known before the Halaf period. Many of the patterns are reminiscent of those used at Çatal Hüyük, where we find the same use of pseudo-maeanders and similar designs, but none are identical. It is surprising that such stamps have appeared only in level IIB, and one wonders whether in earlier building-levels they were possibly made in a perishable material such as wood. One stamp was made out of an earlier sherd (fig. 187:7).

469 In Hacılar I these stamps have disappeared and the strange objects (fig. 187:8–10) that seem to take their place are decorated on the handles, side or back, but never on the lower surface.

469 Figure 187

1. Probably level II (247), light yellow clay
2. Q.II.2 shrine (322), greyish black clay
3. P.IIb (451), brown clay
4. N.II.5 (313), brown clay
5. H. Kocabaş Collection, Istanbul, brown clay
6. H. Kocabaş Collection, Istanbul, greyish buff clay
7. Q.II.2 shrine (328), greyish buff ware
8. I, room 18 (342), grey ware
9. K.I (224), light grey ware
10. I, room 1 (204), buff ware

Mat and Basket Impressions

Impressions of rush matting, were found in Hacılar I, outside the door of room 3

[1] *AS*, XIV (1964) 96, fig. 40; 98, fig. 41.

(fig. 189:1), and on a lump of red ochre from room 2 (fig. 189:2). There were a number 471
of others, but they showed no more variations. Impressions of burnt coiled baskets were common especially in levels VI, II and I, but no fragments were preserved. Spindle whorls are common but not a single loom weight was found. The best evidence for textiles comes from the designs on the painted pottery.

Chapter 10. Statuettes and Figurines

Late Neolithic Statuettes

Clay statuettes of women have been found in two of the late neolithic building levels: level IX (with two fragmentary figures) and level VI. The latter form a series unrivalled in variety by any other neolithic site. At this point it is perhaps necessary to introduce a distinction between 'statuettes' and 'figurines'. In contrast to the well-made and naturalistic statuettes, which are works of art, there are everywhere crude, schematised and on the whole inartistic representations of the deity and of animals, and it is for these that we feel the term 'figurine' should be reserved. At the earlier site of Çatal Hüyük, the distinction is particularly clear. Statuettes are found in the shrines as part of the cult inventory whereas figurines, *ex voto* substitutes, are not found in the shrines, but are stuck into crannies of the walls, into interstices where one building abuts on the other, or are found in pits where they were buried after use in some ceremony. The two groups are clearly distinct at Çatal Hüyük, but at Hacılar the division is less clear, perhaps because no definitely recognisable shrines have been found. At Hacılar, then, the distinction is based on quality, and the figurines will be discussed subsequently.

472,222 With the exception of the two figures of level IX (fig. 190; pl. CLXIV:b, c), which were found thrown away in occupation rubbish, the forty-five or more statuettes from this period all came from the floors of a number of houses in the settlement, in particular from those in area Q.VI, where houses 3, 4 and 5 all produced a number of statuettes, some of which were unbaked at the time of the fire. This suggests that statuettes were being manufactured in these buildings, which increases the possibility that these buildings were shrines. Unfortunately, there is no corroborative evidence to confirm this, and evidence for cult (other than statuettes) has been forthcoming from each building of level VI excavated in this quarter.

With the exception of two statuettes which were made of fine red burnished ware, nearly all others are brown or light grey as the result of the fire which destroyed the buildings. Only a few fragments show the original cream, buff, or light brown colour. Painted statuettes are rare, but it should be observed that of the four finished (and baked) statuettes found in house Q.4, three were ornamented with white paint. In view of the fact that numerous figures from houses Q.3 and 5 had not yet been baked at the time of the fire, we might perhaps suggest that they were unfinished and had

not yet been painted. The preference for light-coloured surfaces, found only in the late neolithic statuettes of Hacılar (and in the early neolithic of Çatal Hüyük) might suggest that many were to be painted. It is noteworthy that not one statue is painted in the red on cream form of painting which became characteristic of levels V–I, when the decoration in white went out of fashion.

The statuettes vary in height from *c.* 7 cm (6·2 without head) to 24 cm, and they are therefore neither smaller nor larger than those of Çatal Hüyük or the later ones of Hacılar V–I. From the numerous fragments it can be seen that heads, bodies and legs were made separately and then pressed together. Only the head was pegged into the body, and both headless bodies and separate heads have been found. A group of heads was found in a pot in house Q.5, perhaps ready for baking, but in other cases the figure was evidently baked after the head had been inserted.

Little can be said about the position occupied by the statuettes inside each house (see fig. 191). On the whole they tended to cluster near the hearth and they are never 473
found mixed up with other objects, such as pots, sickles or bone tools, all of which occur in these houses. The central group in house Q.5 was imbedded in grain, like certain of the statues from Çatal Hüyük, which were found in deposits of grain ('Leopard Shrine', Çatal Hüyük VI) or inside a grainbin (shrine of Çatal Hüyük II), and like the Hacılar IIB statuette which was also found in a granary (p. 29).

Without exception the statuettes of Hacılar VI have been modelled by artists who were evidently accustomed to observing the female form. Their knowledge of feminine anatomy is such that unless one assumes the presence of neolithic 'models', an unlikely proposition, one is forced to accept that the women of the time went about their various tasks with a minimum of clothing, at least during the summer. But however naturalistic in their approach, the late neolithic artists were not concerned with creating portraits, but with a set of types: the Goddess standing, the Goddess sitting, Goddess and child, etc. Certain parts of the anatomy are naturalistically rendered within a certain convention: the heads and hairstyles, for example, are treated with loving detail, the essential features incised, but the mouth is never shown. The upper part of the body is rigidly stereotyped with bulging upper arms, short forearms and almost non-existent hands, the fingers of which are hardly ever shown. Breasts, stomach and buttocks tend to be exaggerated and whereas the navel is invariably shown, the pubic triangle is never emphasised. Legs are well modelled, but feet held little interest for the artist and legs end in something resembling boots.

Three statues differ from the rest in having great pendulous breasts giving the impression that a second physical type is portrayed. This is of course possible since the late Professor Senyürek's study of the skeletons from Hacılar I, II and IV showed the presence of both Proto-Mediterranean and Eurafrican dolichocephalic strains. However, it seems doubtful that the two races were so different as to provoke such pronounced artistic reactions; the exaggerated breasts of these figures are more in keeping with the function of nourishing the child by the mother, foster-mother or wetnurse.

If no different racial types are shown, there are on the other hand clear indications of age among these statuettes. Some, slim and usually wearing bikini-like briefs,

portray girls, whereas most of the older women are corpulent, nude, and only rarely provided with articles of dress, such as string skirts or aprons. Steatopygy seems to be confined to the matrons, but not all show it. Long sleeved dresses coming down to the ankles and striped are sometimes shown and one goddess is dressed in leopard skin
212 (pl. CLIV), like her predecessors at Çatal Hüyük. Similar differences may be observed in hairstyles. Young women wear their hair in the form of a pigtail, as a plait coiled on top of the head (as at Çatal Hüyük), or in the form of multiple plaits held together by bows at the back of the head. Older women nearly always have their hair done up in a bun at the back of the head, and one of the big-breasted ladies has a short fringe covering her brow.

Another group of heads shows the hair arranged into a towering tiara, which may or may not be accompanied by a pigtail, a bun, or both. This suggests that this hair-style was popular among young and old, but was necessarily dependent on the amount of hair of the owner.

One may note that not one of these figures is shown wearing jewellery, as do some of the Çatal Hüyük figures, and boots, not infrequent at the latter site, are, if shown at all, inconspicuous at Hacılar.

Equally noteworthy is the absence of statues of male deities. When a male is shown it is a child, and there is only one case of what looks like a goddess embracing a young boy god. The number of child figures is minute and no single head is preserved. Most of them would have been less than 5 cm in height, with heads the size of peas. There are two or three very small pottery 'vessels' on four feet, about the size of a cradle for such babies. In the general destruction of this settlement by fire, with brick walls tumbling inwards, each brick weighing several pounds, the chances of survival for child figures obviously were very small indeed.

The female statuettes from Hacılar can be divided into four main categories:

A. Standing figures
B. Seated figures
C. Resting figures
D. Enthroned figures

Of these four groups the standing and seated ones are the most common, and the enthroned ones the least frequent. Each has a number of variants, the distribution of which is shown in the table below. The table also illustrates which types have an ancestry at Çatal Hüyük and which types continue into the early chalcolithic levels of Hacılar.

TYPES OF FEMALE STATUES	ÇATAL	HACILAR
	VI V IV III II	IX VI V IV III II I
A. *Standing figures*		
1. Mature woman, steatopygous, nude or dressed	× × × × ×	× × × × × ××
2. Mature woman with pendulous breasts		×
3. Young woman, slim, in briefs		×

	VI V IV III II	IX VI V IV III II I
4. Young woman with animal(s)		×
5. Mature woman, bending forward		×
B. *Seated figures*	VI V IV III II	IX VI V IV III II I
1. Seated with both legs to one side	× × ×	×
1a. With child		×
2. Seated with knees pulled up	×	× ×
2a. With child		×
3. Kneeling		×
4. As B.2 with animals	×	—
C. *Resting figures*	VI V IV III II	IX VI V IV III II I
1. Resting on elbows		×
2. Resting with head turned		—
3. Pregnant, resting on side		×
4. With boy god		×
5. Birthgiving		×
D. *Enthroned Goddess*	VI V IV III II	IX IV V IV III II I
1. On one animal		×
2. On two animals		×
3. As D.2, but giving birth	×	
E. *Schematic figures*	VI V IV III II	IX VI V IV III II I
1. Clay figures		× ×
2. Incised stone slabs		×
F. *Figurines*	VI V IV III II	IX VI V IV III II I
1. Square		×
2. Seated		×
3. Miscellaneous		×
G. *Effigy pots*	VI V IV III II	IX VI V IV III II I
1. Cups with heads		× ×
2. Goddesses		× ×
Painting		
1. White paint		× ×
2. Red paint	×	— × × × ×
3. Polychromy	×	—

From the variety of types, dress, hairstyles and attributes shown in this remarkable series it is evident that the late neolithic Hacılar sculptors were portraying a number of aspects of their main deity or deities. These would probably have been as clear to the people of the time as the identity of the numerous saints were to people in the Middle Ages or the participants in a Christmas crib are to us.

Without any texts or mythological traditions to guide us, it is evidently a hopeless task to reconstruct more of neolithic religion than the material evidence presents. Fortunately, we now have abundant evidence from Çatal Hüyük as well as from Hacılar, and a pattern is emerging that is by no means as sterile as a mere typology of statuettes would tend to suggest.

It would appear that the basic economy of late neolithic Hacılar is reflected in the statuettes. Hacılar's economy was concentrated on intensive agriculture, not on hunting. Sheep, goats, cattle and pigs were present, probably in domesticated form (but this is beyond proof). There is little emphasis on these animals compared with what there was at Çatal Hüyük, and though ritual vessels show pigs, deer and bull's heads, not a single animal figurine was found. One has the feeling that the challenge of animal domestication has passed: man has mastered the animal. The absence of hunting equipment, the disappearance of bow and spear and the corresponding emphasis on spinning (implying domesticated sheep and goats), leatherworking and agriculture (sickles, spatulae, elaborate kitchens, and the ground down teeth which show an excessive cereal diet) all testify to the success of the neolithic evolution. Man's main concern is now to ensure the fertility and abundance of what he has achieved: his crops, his domesticated animals and his family. It is probably more correct to reread this sentence as 'Woman's . . .', for the one thing which is clearly indicated in the religion of Hacılar is the predominance of the woman.

All this is reflected in the statuary: the male is virtually absent, and so is any sexual emphasis. The statuettes lay stress on the breasts, the stomach, the navel, on abundance of flesh, and pregnancy, and hence on the ability to procreate life, sustain and nourish it, but not on the simple fact of sexual reproduction. With this goes the almost complete absence of any phallic or vulval symbols in the Anatolian neolithic.

The one apparent exception is the group of a young goddess and a boy god (pls. CLII–CLIII; fig. 227). When first published it was regarded as a goddess with her lover, the latter shown as being much smaller to indicate their relative importance. I am now inclined to think that this group does not show a 'hieros gamos', but a mother playing with her child. For one thing the sexual act is not depicted, and closer inspection has shown that the goddess is dressed in a painted leopard skin garment, the fine black round spots of which can be clearly seen in the photographs (col. pl. VI, facing p. 178).

210–11, 502

Throughout the series of neolithic representation of the goddess, both at Çatal Hüyük and at Hacılar, there runs the concept of the two aspects of the deity, that of a nubile girl and that of the mother. Sometimes the two are combined into a single figure showing that one deity is meant and not two. Such twin aspects are well illustrated by a marble figure and plaster relief of Çatal Hüyük VI and in a group of effigy vases from Hacılar I, derived from the plundering of the cemetery. No 'twin figures' are known from Hacılar VI, but the two aspects are clearly kept apart and indicated by physical appearance, hair style, and sometimes dress. In fact all the statuettes from Hacılar VI represent certain aspects of the life of the goddess; the maiden, the mature matron, the pregnant mother, a full-breasted nursing mother, the mother with her child, and the Mistress of Animals, the goddess of nature and wild life.

The Maiden Goddess

Representations of the youthful aspect of the goddess are considerably less common than those of the mother. There are three standing figures: nos. 486 from Q.4 and 513 and 508 from Q.5 (figs. 192, 194, 195; pls. CXXV, CXXVI). All three are slim of limbs, wear briefs, and have small, taut breasts. Where the head is preserved, as in no. 513, the hair is worn in a plait coiled on top of the head, rather in the form usually shown in the Çatal Hüyük statuettes. The single garment worn may have been of wool or animal skin, and covered only the front. A very similar garment (fig. 196) was provided with a tail at the back. None of these figures is steatopygous. 474–6, 180–1, 476

The Young Mistress of Animals

A fine statue from house Q.3 (539) shows the young goddess holding a leopard pet under her left arm (pl. CXXVII; fig. 196). Its head is lost, but its body and tail are well preserved. She wears briefs with a tail at the back, and her hair ended in a pigtail. On analogy with fig. 198 it is probably that one of the heads with tiara belongs to this type of figure, and such a head is shown in the drawing. 476, 182, 478

From the neighbouring house, Q.5, comes the lower half of a very similar figure in tailed briefs (577) (fig. 197). Much of this garment, modelled in heavy relief, is broken, but two long tails remain hanging down the side of the young woman's legs. The analogy with the previous figure is perfect, and it is clear that this young goddess was holding not one but two leopards. Unfortunately these are lost together with the upper part of the body. 477

A fragment of a third figure that may belong to this group, also from house Q.5 (571), shows the upper part of a standing figure of a young woman with her hair done up in tiara and pigtail fashion (pl. CXXVIII; fig. 198). The top of the tiara crumbled on exposure. This figure is decorated in what is now a brownish black paint applied to the pupil of the eye and to a close fitting dress with cheque pattern. Whereas her left arm touches the body (as in 539), the right arm was brought forward and may have held a pet, no traces of which have survived. Unfortunately the rest of the statue is also missing so that we do not know whether she was wearing a long dress, or a jacket above a bikini-like garment, as did the others. The combination of those two garments is however well attested in later figures at Hacılar IV–II (figs. 242; 239: 2, 4). 478, 183, 517, 514

Young Goddess in Position of Childbirth

The charming statuette (pls. CXXIX–CXXX; fig. 201), no. 525 from house Q.5, portrays a young woman wearing her hair in a pigtail and holding her breasts. The position of the legs indicates youth for it would be difficult to achieve later in life; but it is, moreover, a position facilitating childbirth and it is likely that the young goddess is shown giving birth. As is customary at Hacılar any further details are omitted. 184–5, 481

These seven statuettes illustrate the younger aspect of the goddess as the maiden, the Young Mistress of Animals and the young mother. Seated figures of the latter have not been found and nearly all show her standing.

The Mother Goddess

Far more numerous are statuettes of the mature goddess, the mother. In its standing form it is also the earliest in type, with an ancestry going back to the Goddess of

Willendorf (*c.* 23,500 BC?) or the Goddesses of Kostenki, Gagarino, etc., of about 21,000 BC, to mention but a few outstanding and datable examples from the upper palaeolithic.

STANDING FIGURES

One type, larger than the rest, shows the goddess standing with arms straight along her sides and resting on her thighs. The only complete figure, no. 520 from house Q.5
186–7,482 (pls. CXXXI, CXXXII; fig. 202) is 24 cm in height and made in a red burnished fabric like the leg, no. 456 from house P.I. The second leg and broken hand belonged to a
483 cream burnished figure (568, also from house P.I) (fig. 203a). This is the only group in which red burnished figures appear in level VI; a number of unstratified heads (fig.
505 230) in the Kocabaş Museum in Istanbul may belong to this group, which, perhaps because of the large size of the figures, is less delicate in the rendering of facial features, hair, etc. The heavy forms of the body accentuate the maturity of the goddess, and the complete figure shows marked steatopygy. All are naked.

A second larger group consists of medium-size statuettes and shows greater attention to detail. Whereas most of the figures are naked, a few are painted in white. In all the arms are shown supporting the breasts, which are more or less triangular in shape. Stomachs and buttocks are pronounced; the eyes and line of the hair are incised and the hair is done up in a bun at the back of the head.

188 Good examples of this type are nos. 514, 569 and 509 from house Q.5 (pls. CXXXIII,
189,483–5 CXXXIV; figs. 204–6) and the fragmentary figures no. 515 from house Q.5 and nos. 507 and 505 from house Q.4, all three decorated with white paint. The first of these (515)
193–4,486 (pls. CXXXVI, CXXXVII; fig. 207) is shown wearing an apron which only partly covers
195,487 her buttocks. The second (507, pl. CXXXVIII; fig. 208) shows a similar but wider
487 apron suspended from a belt and worn in front, whereas the third figure (505, fig. 209) of which only one leg is preserved, is clad in what is either a long striped garment the lower edge of which is not indicated, or more likely in a long string skirt, descending almost to the ankles. Dancing girls still wear such garments in the Near East, and they can be traced back to Çatal Hüyük VI, *c.* 5900 BC.

Full-breasted type. A third type of standing figure has already been referred to above (p. 167). With its heavy pendulous breasts, full and rounded abdomen, but youthful
488 posterior profile, evidently pregnant. No. 531 from house Q.3 (fig. 210) and no. 529
186,489 from house Q.5 (pl. CXXXIX; fig. 211; col. pl. V facing p. 162) are very similar and very well made, and even the fingers of the hands resting on the breasts are carefully modelled. Unfortunately both have lost their heads. The third figure (570 from house
197–8,490 Q.5, pl. CXL; fig. 212) has a head with black painted hair and bun, and a fringe along her brow. It is less well made and heavier, perhaps representing an older woman. Most of the lower part is missing.

Goddess bending forward. A fourth type of standing figure is represented by one frag-
199,491 mentary example from house P.3 (485, pl. CXLI:a; fig. 213). It shows a heavy-bodied woman, with arms holding her breasts, bending her body forward as if looking at a child or conversing with somebody seated. It may have been part of a group the other members of which have not survived (only part of the building in which it was found

could be excavated). This figure is important in that it explains the strange angle of the fine marble figure from Şuhut in the Afyon Museum (pl. CLXXV). 234

These thirteen examples illustrate the four main types of standing figures of the Mother Goddess recognisable at Hacılar.

SEATED FIGURES

Seated figures with both legs to one side (and the right leg in front) are fairly common in Hacılar VI, and were made in several sizes. No. 521 from house Q.5 (pl. CXLI:b; 199
fig. 214) illustrates this type well. The hands support the breasts, the abdomen is 492
paunchy, the legs heavy and gross. Boots seem indicated in this statuette. A fragmentary figure of the same type is no. 574, also from house Q.5 (pls. CXLVI, CXLVII; fig. 215); 204–5, 493
two smaller and also fragmentary ones from house Q.3 (nos. 535 and 538c) are shown in figs. 216, 217. 494

This same type of seated mother goddess is often (to judge by the fragments) accompanied by a child. The almost complete figure from house Q.5 (519, pls CXLII, 200
CXLIII; fig. 218) is embraced by a small child standing at her right side. Her right 201, 495
arm holds the child, her left grasps its little arm. The hands of the child are carefully modelled whereas the mother's are not. The child's head is lost. Hair and pupils of the mother's head are painted black.

A second figure seems to show a younger mother holding a child on her lap (no. 575 from house Q.5, restored from fragments, pl. CXLIV; fig. 219). Only the legs of the 202, 496
child survive. One of the arms of the mother, thin and delicately modelled, is preserved.

A very battered and unbaked statuette of a pregnant woman with the remains of a child climbing on her back (573) was found in house Q.5 (pl. CXLV; fig. 220). She is 203, 497
seated with legs drawn up in front of her, a posture suited to her condition. Her long thin arms, carefully modelled, rest on her abdomen. The hands are not emphasised.

A fragment (538a) from house Q.3 (pl. CXLVIII; fig. 222) shows another woman, 206, 498
not pregnant, seated in this position and slightly bending forward. Her arms are resting on the knees.

A third seated figure (fig. 223) in the Kocabaş Museum at Istanbul is again different 499
and lacks well defined arms; fragments of further seated figures (583 and 584 from house Q.5) are illustrated in fig. 224. 499

A fragment of a kneeling figure, no. 538b, was found in house Q.3 (pl. CXLVIII; 206
fig. 222). Fragment 588 from house Q.5 (fig. 221) may have belonged to such a figure. 498
Alternatively, no. 538b may have been part of another seated figure and child, as is suggested by the outstretched arm. Fragment 587 from house P.1 (fig. 200:d) should 480
also be compared with it.

The seated figures of Hacılar VI are as richly varied as the standing ones and the fragmentary nature of the evidence might well indicate that there were still more variations. A seated figure from Kayirliköy (Banaz ovası) in the Afyon Karahişar Museum (no. 2759) is made of brown burnished clay (pl. CLXXIII). It has lost both legs, but 232
even so it clearly belongs to the Hacılar VI group of seated figures. The head is rather crudely modelled, but the hairstyle is similar to that of statuette 513 (fig. 194). This

statuette shows a variation on the types described above in the treatment of the arms. One hand touches the breast, but the other rests on the knee, as in a number of clay figures from Çatal Hüyük II. It is regrettable that the opportunity to explore more of this settlement was not grasped at the time.

Besides the more common standing and seated types there are still some others to be discussed, which though less frequent, must be regarded as some of the most outstanding products from late neolithic Hacılar.

RESTING FIGURES

The splendid figure of a tall reclining woman (no. 506) found in house Q.4 (pls. CXLIX–
207–8, 500 CL; fig. 225) is dressed in a long striped robe. Head and lower legs are lost and the latter should probably be restored on analogy with fragment 578 from house Q.5 (fig.
499 224:c). This piece is superbly modelled and in frontal view is very similar to the small
481 goddess giving birth (fig. 201), who is also shown supporting herself on her elbows while her hands rest under her breasts. This figure also is clearly pregnant.

A similar figure, carved in fine green stone, acquired by Bay Burhan Tezcan at the neolithic site of Çukurkent for the Archaeological Museum in Ankara in 1960, has not yet been published. These are the only three figures showing a goddess resting in this position.

209, 501 Another figure from house Q.5 (no. 576, pl. CLI; fig. 226) was unbaked. Forcefully modelled, it shows a heavily pregnant woman resting on her left side with hands held to her breasts. In the rendering of the massive limbs and the heaviness of her condition one sees the same careful and naturalistic observation as is found in the great goddess figure giving birth from the shrine in Çatal Hüyük II.[1]

To this same group belongs the statuette of a goddess and her son (no. 528 from
210–12, 502 house Q.5, pls. CLII–CLIV; fig. 227), which we have already had occasion to refer to above. She also is shown resting on her left side holding a boy in her arms. From the relative positions of mother and son one might perhaps suggest that she is suckling the child, but he seems a little too old for breast feeding. The upper part of the boy's body and the mother's waist were broken in the destruction of the building. One should note once again that the child's hand is carefully modelled with all fingers. The mother is dressed in a garment of leopard skin, indicated by black dots and reaching probably from the waist down to her ankles. The child, obviously a boy, is naked. This remarkable group is unfortunately the only one of its kind (col. pl. VI, facing p. 178).

THE MISTRESS OF ANIMALS

Whereas the goddess in her younger aspect as goddess of nature is shown standing with one or two leopard cubs under her arms, the mother is represented seated on one or two of her sacred animals.

Two fine statues, monumental in conception, both from house Q.5 but the one (518) unbaked and battered, the other (523) broken, illustrate this concept, already familiar
213–15, 503 at the earlier site of Çatal Hüyük. The first (518, pls. CLV, CLVI, CLVII:a; fig. 228) shows a goddess of the familiar type seated on the back of a leopard, whose tail lovingly curls up her back. The animal's head is clearly defined and separate legs are indicated.

[1] *AS*, XIII (1963) pl. XXIV, figs. 31–2.

The front legs are broken and lost. The goddess is holding a long-tailed animal, the head of which has not survived. Its front paws rest on her shoulders, the hind legs on her abdomen. The parallel with other figures holding human children is complete.

The second figure (523, pls. CLVII:b, CLVIII; fig. 229) is different. No pet is shown and her hands support her breasts. Her hairstyle is also different: her hair is coiled on top of the head crowned by a bun (?). She also was supported by animals of which only the tails and the impressions underneath the statue have survived. From this it is clear that she was supported by a pair of leopards placed back to back. The position of the two animals is a variation on the two leopards that support the birth-giving goddess of Çatal Hüyük II, which is perhaps a century earlier in date. There, also, the animals' tails curve up the deity's back, and no other diagnostics were deemed necessary to specify the type of feline as a leopard. None of these three statues was painted. 215–16, 504

Fragments

A number of fragments, not already discussed in the text, are illustrated in figs. 199, 200. These are either legs, or fragments of shoulders with breasts, or isolated heads (fig. 231). As they do not offer any further information, discussion seems unnecessary. Illustrations and catalogue contain all the relevant details. 479, 480

Figurines (*ex voto* substitutes)

A number of crude figurines, some baked, the majority made of unbaked clay, were found in a number of houses of Hacılar VI (figs. 231–3; pls. CLIX–CLX). A cache of about ten figurines, five broken or fragmentary bars of unbaked clay (fig. 234) and two tables or offering trays lay in a niche in the north wall of house Q.VI.2, and west of the main doorway. The purpose of the deposit is unknown. One figure, found a little beyond this cache (no. 488, pl. CLX; j), represents a grotesque, crude rendering of a steatopygous seated (?) female. Its head, like those of all these figurines, was made of wood; all these heads are either lost or were found in a carbonised state. Two other figures from the same deposit, nos. 589 and 590, are fragments of standing figures ineptly modelled (fig. 231:1). Two other and smaller ones (nos. 490 and 494, fig. 231:2) seem to represent schematised standing figures with raised arms. Four others (491, 492a,b, 493, fig. 233:1–4) are stylised almost beyond recognition, but one (532, fig. 232:1) still shows two minute breasts. This latter type of figurine is also known from house P.I (no. 483, fig. 233:5) and Q.5 (512, fig. 233:6). 506–8, 217–18, 509, 218, 506, 508, 507, 508

Of the remaining figurines no. 489 from house Q.4 resembles no. 488 from the deposit. Nos. 484 from house P.I and 524 from Q.3 (fig. 232:2) seem to be seated, and no. 565 from house Q.3 (fig. 232:3) looks like a resting figure. Finally, no. 566 from house Q.5 (fig. 232:4) is a poor imitation of a seated figure, remarkable only for its incised decoration. The only animal figurine comes from below house Q.3 in level VII (no. 567, pl. CLXXI:j) and represents the head of a bull (?) with incised eyes. 507, 507, 230

It should be noted that these crude figurines are characteristic of Hacılar only in level VI, but they also occur at the contemporary late neolithic site of Çukurkent at the northern end of Lake Beyşehir, though in somewhat different forms.

Stone Slabs with Incised Features and Schematic Clay Figurines

Two schematically rendered flat clay figures with incised features, perforated mouth, and articles of dress were found, the one (455) almost complete in house P.1 (fig. 510,219 235:1; pl. CLXI), the other (544), fragmentary, in house Q.3 (fig. 235:2). The first is in red burnished, the second in cream burnished ware; the decorative principles involved are the same as those seen in the statuettes, but the distinguishing features are the doll-like stiffness and the presence of a mouth, indicated by piercing the plaque. Only two of these have been found, but it would appear that their place is taken in other houses by an even more schematised figure of stone (grey limestone or haematite) 220–1 (pls. CLXII, CLXIII) with a few incised features, a pair of eyes, a line for the chin or nose, and outline for the hair on top of the head.

512 Limestone slabs of this type come from house P.2 (two examples, nos. 458, fig. 237:1
511 and 449, fig. 236:3); house Q.4 (no 459, fig. 236:1); house Q.6 (no. 500, fig. 236:2),
512 and a stray example (no. 450, fig. 237:2) was found above house Q.5. These five slabs are all similar in that they schematically represent head and neck, perhaps originally fixed on a clay or plaster body (?) like the wooden peg heads in the figurines. If so no traces survive of the bodies into which they were fixed, but, considering violent destruction of the very thick walls of these buildings, this is only to be expected. It should be noted that nearly every building excavated at Hacılar VI has produced either one of the clay figures or a stone slab, which might suggest that such a figure was a feature of each building.

The interpretation of these seven figures (five in stone, two in clay) presents some problems. The one intact figure has no breasts, and the statuettes of women have no mouths. Are they representations of males? In our preliminary report[1] we suggested that they might be an earlier type of human representation, retained for purposes of religious conservatism. The discovery of the early neolithic civilisation of Çatal Hüyük has revolutionised our conceptions of neolithic art and religion, but no prototypes for the incised slabs of Hacılar have been discovered. It is, of course, possible that they have an even earlier origin, in the aceramic neolithic period, but there is no evidence in support of this theory, for no statuettes or figurines belonging to this period have yet been found in Anatolia.

Table showing distribution of various types of cult figures in Hacılar VI

House	P.1	P.2	P.3	Q.2	Q.3	Q.4	Q.5	Q.6	
statuettes	3	—	1	—	11	5	32	—	52
figurines	1	—	—	12	2	1	2	—	18
incised clabs	—	2	—	—	—	1	1	—	4
incised clay figures	1	—	—	—	1	—	—	—	2
	7	2	1	12	14	6	35	—	76

[1] *AS*, XI (1961) 46–7.

BULL'S HEAD FROM HOUSE P.1

Among the debris of house P.1 were found fragments of a bull's head modelled in clay, of which the largest, *c.* 20 cm long, showed a section of head from muzzle to the beginning of the forehead, as well as one incised and carefully modelled almond-shaped eye. The second fragment consisted of the other eye (pl. CXXII:b). No animal bones, 177
or impressions of them, were found, so that it is unlikely that actual bones were incorporated in animal protomes, as they had been in earlier times at Çatal Hüyük. No marks on the wall showed where the head had been attached, but as the remains were found just north of the door it might possibly have been fixed above it. The head, when complete, probably resembled the small clay heads of bulls like that shown in fig. 247:6. Remains of such animal heads modelled in clay or plaster have not been found 522
in any other building of Hacılar VI, nor in any of the later building-levels.

Statuettes from Hacılar V–II

In contrast to the remarkable collection of more or less intact figures found *in situ* in three houses of Hacılar VI, the early chalcolithic levels V–II yielded only a single intact figure. Owing to the fragmentation of the material it is not possible to establish how many different types of statuette were in use during the period concerned. It is, however, clear from the considerable number of torso, shoulder and leg fragments, but very few heads (fig. 238), that statuettes continued to be made in great quan- 513
tities.

Most of these are in monochrome burnished ware, red, light brown or buff in colour. In Hacılar V not a single painted fragment was found; in Hacılar IV only one (fig. 239:1). It would appear that it was only in Hacılar III and II that the habit of 514
painting statuettes became widespread, but the apparent rarity of painted figures may be deceptive.

It is virtually impossible to study the development of statuettes during the three and a half centuries of Hacılar V–II on the basis of the thirty-five fragments recovered during the excavations. It is very unlikely that this group is representative of the actual craftsmanship and technical accomplishment of the period as shown, for example, in the pottery. The contrast in quality is too great. In the present circumstances, a comparison with other material cannot yet be made, much to the detriment of the advancement of knowledge.

Among the extant fragments only the standing type of statuette (type A.1 of the list (p. 168) could be demonstrated with certainty (fig. 239:4; pl. CLXVIII:c; fig. 240:2; 514,226,515
pl. CLXV:d, from Hacılar III, and fig. 240:1; pl. CLXV:c; figs. 241–2 from Hacılar II). 223,515,516–17
The only intact figure (fig. 243; pl. CLXVIII:b) is a rather poorly modelled example, 518,226
coarsely painted in orange or light brown washy paint. The paint indicated a long dress, plain on one side and ornamented with crescents and circles on the right. This division of a garment into two parts, half plain, half patterned can still be seen worn by peasant women in Anatolia today. This figure was found in the granary of Hacılar IIB and its association with grain recalls similar examples at the earlier site of

517,224 Çatal Hüyük (levels II, IV and VI).[1] The standing figure (fig. 242; pl. CLXVI:a) from Hacılar II shows another form of dress consisting of a sleeveless bodice and a string skirt inadequately hiding the mature charm of the goddess. Another fragment showing
514 a bodice came from Hacılar IV (fig. 239:2), and a similar string skirt reappears in
514,226 Hacılar III (fig. 239:4; pl. CLXVIII:c) and perhaps also on the damaged statuette
224 (pl. CLXVI:b) from Hacılar II. Patterned robes and jackets occur not infrequently in
519,225 Hacılar II (fig. 244:4, 5; pl. CLXVII:b, a), probably again on standing figures.

Where only the upper parts of figures are preserved, as happened in the majority of cases, it is extremely difficult to tell to what type of statue they belonged. Only resting figures have a somewhat different torso, and the absence of such fragments among the excavated material suggests only standing, seated, or kneeling figures. It should perhaps be noted that there is considerable variation in the treatment of breasts and shoulders, which varies from realism with separately moulded lower arms to an ab-
516,519 stract curve indicated by a groove (fig. 241; pl. CLXVII:d; fig. 244:1–3). Pendant breasts, common in Hacılar VI, have gone out of fashion. In Hacılar VI, age differentiation among the women represented was strongly marked. In the later statuettes this tendency is much less pronounced; steatopygy is the rule and slender figures are
516,225 extremely rare. A fragment of this type from Hacılar II (fig. 241:2; pl. CLXVII:c) is unusual in that the buttocks are covered with a criss-cross pattern of incision applied after firing. This is not the way in which details of dress are ever indicated at Hacılar before level I and it looks as if the young goddess has been subjected to erotic flagellation.

The absence of marked breasts on many pieces, a possible indication of youth, frequently contrasts with marked corpulence, presumably characteristic of maturity, and it seems unlikely that the division between maiden and mother was as strictly maintained as in Hacılar VI. This is also noticeable in the treatment of the hair. Where pigtail and bun once marked girl and matron, pigtails prevail on most statuettes (fig.
313,223 238:1, 2, 4, 6; pls. CLXV:a) and buns are rare (fig. 238:3; pl. CLXV:b). The tiara, characteristic of Hacılar VI, has disappeared and a new way of treating the hair by
513,222 means of incision is common and occurs as early as Hacılar V (fig. 238:1; pl. CLXIV:a).

Fragments of legs are very frequent, but they do not indicate to what type of figure they belonged. Not a single painted leg was found (in contrast to Hacılar I, where leggings, hose, or footwear are not infrequently shown). When broken below the knee, and fully burnished all round, their attribution to resting figures (type C.2) or seated figures (type B.1) is possible, for most legs of standing figures break at the junction with the body and the inside of the leg could not be reached by the burnishing tool. No parts of kneeling figures were found in the excavations of Hacılar V–II; leg or torso parts of these would have been easy to recognise.

Compared with the much richer material from Hacılar VI, Hacılar V–II have yielded a more restricted range of types (see table on pp. 168–9). The goddesses with children or animal pets, the enthroned goddesses, and the figures with pendant breasts or those wearing tiaras, have all disappeared. The homely and infinitely varied 'pantheon' of

[1] James Mellaart *Çatal Hüyük, a neolithic town in Anatolia* (London 1967), p. 183.

VI. Hacılar VI. Statuette (cf. vol.2, pls.CLII–CLIV and fig.227)

Hacılar VI has given way to a more restricted and more hierarchic set of standard types, derived from the earlier ones and beautifully made, but lacking in the naturalistic charm which the earlier artists had succeeded so well in expressing. With the change of types came a difference in texture and decoration. In Hacılar VI cream colour prevailed; in the later levels the colour is mostly red or red-brown. In Hacılar VI white paint was fairly common, red paint unknown; in Hacılar V–II the reverse is the case.

Two pots from Hacılar II deserve particular mention here for they introduce anthropomorphic decoration, a feature reaching its fullest development in the splendid vases in the form of a goddess in Hacılar I. The earliest (fig. 75:18; pl. LXX:1) is a red monochrome pot from Hacılar IIA with two lugs like ears on the rim and a vertical clay bar like a nose. Eyes are not indicated. The second example (fig. 98:1; pl. LXXXV:4) is a fine painted vessel from Hacılar IIB. The oval neck with small spout is treated like the contemporary cups in the form of a woman's head: it is painted with the same 'eye patterns' on either side together with the outline of the hair, which is done up in a bun (the little lug at the back of the neck). This is the earliest example of the effigy vase with a human head (cf. fig. 249:1 from Hacılar I), and so far it is unique. 303 347, 133 524

ANIMAL FIGURINES. Figure 247

With Hacılar VI the class of coarse or stylised human figurines, which were probably cheap *ex voto* substitutes for statuettes, disappeared altogether. No less remarkable is the great rarity of crude animal figures at Hacılar in all periods (six in Hacılar I, two in Hacılar III (pl. CLXXI:e). Animal heads, not necessarily parts of animal figures, but possibly terminals of spoons or for application to various vessels, did exist, however, from Hacılar IX–I (fig. 247; pl. CLXXI). The animals portrayed are bulls (fig. 244:6), sheep, rams, dogs, bears, leopards (?) (fig. 247:1) and duck (fig. 247:5; pl. CLXXII), always in the form of heads. 229 522, 229 519, 522 231

Statuettes and Effigy Vases from Hacılar I

STATUETTES

The substantial change in culture that was introduced by the newcomers of Hacılar I also left a mark on the production of religious statuary. Not more than eight fragmentary statuettes, all of mediocre quality were found in the excavated part of the settlement, and remains of effigy vases, a characteristic of Hacılar I, were equally rare (figs. 248–9). 523–4 Compared with the vast amounts of painted pottery and its excellent quality, the decline of the statuettes was indeed most surprising. The dearth of this material in the excavated quarters could only mean that statuettes and effigy pots were not being produced nor used here, and that shrines and workshops must have been located in another part of the settlement. With these considerations in mind I urged for the complete excavation of the fortress, which lay near the surface of the mound and could easily have been accomplished.[1] Had we been enabled to do so, not only the shrines and workshops, but also the cemeteries of Hacılar would have come to light and much knowledge now

[1] *AS*, x (1960) 97.

irrevocably lost, would have been gained. The tragedy of Hacılar could have been avoided.

Of the eight statuettes, all headless, only two were painted: one in white on brownish
520 black (fig. 245:1), the other in coarse red-on-cream (fig. 245:2). The others are
520–1,227 monochrome, red, brown, or buff (figs. 245:3; 246:2–4; pl. CLXIX) or light grey,
521,228 decorated with white-filled incision (fig. 246:1; pl. CLXX:c), a form of decoration that becomes more common in the late chalcolithic and early bronze age, and is unique at Hacılar.

226 All these statuettes are small, measuring from 4·5 (pl. CLXVIII:a) to 8·5 cm in
513,228 height, without their heads. A single head (fig. 238:5; pl. CLXX:a), belonging to a somewhat larger statuette, shows a new type of face, with heavy brow ridges merging into the nose, a type familiar from the anthropomorphic vases.

These small figures fall into three groups: standing, sitting, or leaning backwards.
521,227 The standing figures (fig. 246:2–4; pl. CLXIX) show various degrees of stylisation
520 steadily progressing in the three examples illustrated. The seated figures (fig. 245:1–3)
226 consist of one small, naturalistically modelled miniature (pl. CLXVIII:a), one rather
520,228 coarse buff figure with obsidian inlay in the navel (fig. 245:3; pl. CLXX:b) and the two
520,227 fragmentary painted figures (fig. 245:1–2; pl. CLXIX:b). The third type of Hacılar I
521,228 statuette is a reclining one (fig. 246:1; pl. CLXX:c) with stylised torso, reduced arms and fused legs.

A characteristic of Hacılar I figures, on the evidence presented above, is the strong tendency towards stylisation into the so-called 'fiddle' type. Arms are reduced, legs shortened and no longer separated, stomach and breasts are less prominent than before. The triangular breasts of earlier figures give place to two small knobs as if the figure was swathed in cloth, and more attention is paid to the privy parts, hitherto ignored. The heads, however, are no less striking and different from the earlier ones, and on the anthropomorphic vases the eyes are painted or inlaid with a little piece of obsidian. Noses frequently recede into the chin; the ears become schematic lobes, and the pigtail a plain ridge at the back of the head. The only feature the Hacılar I statuettes share with their predecessors is the lack of a mouth. This schematisation is in full progress in Hacılar I, not only in some of the statuettes and the effigy vases, but also in the negative painting on the bowls, which show pointed heads, stumpy arms and a rounded
435 body (fig. 154:7–10).

However, not all Hacılar I statuettes are devoid of naturalism, and the small grey
521,228 reclining figure (fig. 246:1; pl. CLXX:c) has a stylistic parallel in a naturalistic white marble statue, 18·5 cm in length from Şuhut Hisar and now in the Afyon Museum
234 (reg. no. 2013, pl. CLXXV). It shows a reclining young woman with reduced arms, firm pointed breasts, a youthful figure and long legs. The head has incised eyes, a mouth, a long nose and ears. A hole in the head suggests that this figure was provided with a headdress, a cap, or hair of some sort made separately and possibly of a different material. As the statue is a chance find, its date cannot be established with certainty.

EFFIGY VASES

Fragments of vasês modelled in the form of a female deity are typical of Hacılar I (figs.

248–9; pls. CLXXII, CLXXVI). These vases are considerably more naturalistic than their forerunners in Hacılar II (above, p. 179), are equally uncommon in the excavated parts of the settlement, and probably were used only in ritual functions in shrines and graves. This latter use is suggested by the remains of a red ochre deposit found in one of them and by the careful repainting of the stomach region in one of these vessels (fig. 249), a practice also attested at the contemporary site of Çatal Hüyük West.[1] The practice of furnishing pots with more than one layer of paint, perhaps to hide cracks or other blemishes, is reminiscent of wall-paintings, but not otherwise known to me in the Near East. 523–4,231, 235–8 524

Although the fragments of effigy vases are uncommon, no two pieces are identical and various gradation in size may be observed (as among the statuettes), ranging from *c.* 10 to *c.* 30 cm in height. Not a single intact vessel was found during the excavations, and by far the best preserved vessel (fig. 24; pls. CLXXVI), now in the Hüseyin Kocabaş Museum, Istanbul, lacks most of its base, a probable fragment of which was found in room 6. The second large vessel (fig. 249:2) could only be tentatively restored on paper from fragments warped and almost obliterated in the fire in which the fortress perished. Of a much smaller figure (fig. 248) only part of the body has survived, clad in a robe with maeandroid patterning (pl. CLXXII:c). A leg is shown in pl. CLXX:d). The fragment of a head (fig. 249:5; pl. CLXXII:a), richly inlaid with obsidian in the eyes, ears, brow and chin – a use so lavish that it has no parallel – belongs to another large vessel, but the two smaller fragments (fig. 249:3–4; pl. CLXXII:b), with painted not inlaid eyes, would seem to have belonged to smaller and less splendid vessels. The presence of an ovoid jar with two necks, acquired by the Burdur Museum in recent years (illustrated in the brochure on Burdur issued by the Turkish Ministry of Tourism), opens up the possibility of the existence of effigy vases with more than one head. 524,235–8 523 231 228,524,231 524,231

The use of obsidian inlay in Hacılar I pottery and statuettes has earlier antecedents at this site and occurs even in Çatal Hüyük II in the form of an eye in a crude figurine. In Hacılar IV, a lug in the form of an animal head had obsidian eyes (pl. LXVIII:7), and in Hacılar II a statuette and an oval face cup had obsidian eyes (fig. 238:4). It was not until Hacılar I, on the other hand, that obsidian eyes were widely used, even on pots (pl. CXI:6) and animal figures (fig. 247:5; pl. CLXXII:d). 116 513 165,522,231

Although the figures portrayed in these vases are probably to be regarded as goddesses (male effigy pots are absent), the human type depicted is similar to that of the statuettes. Here we find the same 'owl-like' faces with the nose merging into prominent brow ridges, the stylised arms, the small round breasts, the fused legs and the obsidian eyes. In spite of this novel way of depicting the human body, invariably dressed and often so in gorgeous garments, there are archaic features, such as the 'Hacılar handle' that serves as a nose on the Hüseyin Kocabaş vessel, an occasional bun at the back of the head, a vertical ridge, or a schematic pigtail. Not all eyes are inlaid, some are grooved or painted and almond shaped, as in earlier statuettes.

Attention should be drawn to a strange vessel (fig. 150:1; pl. CX:3) which is essentially 429,163

[1] *AS*, XV (1965) 140, fig. 4:8; 142, fig. 6:13, 16; 144.

a variant of the effigy vase 'en étages', a type which will reappear at a later date in the Hamangia culture of Romania,[1] which in statuettes shows many remarkable parallels to Hacılar.

The clumsy anthropomorphic pot from Bolu in the Ankara Museum[2] is of buff to brown burnished ware and comparable to the Hacılar I vessels, though evidently provincial work and possibly much later in date. If it is much later one must seriously consider the possibility that effigy pots were made in Anatolia long after the Hacılar culture had come to an end. If on the other hand it were contemporary, then one should seriously re-examine this north-western area for other remains of such early cultures.

It should be emphasised once more that the material from the excavations in Hacılar V–I is inadequate for a study of the development of statuettes after Hacılar VI; this serious defect can be illustrated in tabular form.

Table of statuettes and fragments thereof from Hacılar

level	*total*	*comment*	*heads*	*painted*
I	8	none intact	1	2
II	33	one intact	3	5
III	6	none complete	1	1
IV	8	none complete	—	1
V	7	none complete	2	—
VI	45	many complete	24	8
IX	2	none complete	—	—

Summary of Development of Religious Statuary

In this chapter we have attempted to sketch briefly the development of religious statuary from Hacılar IX to Hacılar I, a period we estimate to have lasted about three quarters of a millennium, or in broad terms from *c.* 5750 to *c.* 5000 BC.

As so often in archaeology, the evidence is thinly spread. Apart from one or two highlights the remainder is relatively obscure. One can see the trends of development but not the details, and it is often salutary to stress how little we know and how much of our knowledge remains to be filled in.

Nothing is known about the statuettes of aceramic Hacılar, the earliest settlement on virgin soil in the late eighth and early seventh millennium. As these people were unfamiliar with modelling in clay, one would expect them to have fashioned the image of their deities in stone. The fact that no statuettes have been found is perhaps not surprising as the excavated area was extremely limited and the buildings found were stripped of any remains.

There follows nearly a thousand years of abandonment of the site, a lacuna that remains to be filled in south-western Anatolia by further research and exploration. Sites like Kızılkaya or Baharlar near Tavas may ultimately fill the gap or part of it,

[1] D. Berciu *Cultura Hamangia* (Bucharest 1966) fig. 56. 4 and 26. 1.

[2] *Belleten* 8 (1944) pl. XLIX.

but surface finds from these unexcavated sites did not produce examples of statuettes, nor could that be expected. The excavations at Çatal Hüyük (East), two hundred miles further east, have yielded rich evidence for cult and religion, including a fine series of statuettes covering the centuries between *c.* 6200 and 5700 BC, and thus leading straight to the beginnings of the late neolithic reoccupation of the site of Hacılar. Unfortunately the temptation to link the Çatal Hüyük sequence directly to that of Hacılar IX–VI must be resisted, for it is by now abundantly clear that we are dealing with two different culture areas, each with its own cultural development. Nevertheless, certain inferences can be made legitimately. At Çatal Hüyük stone statuettes, appearing first in level VII, *c.* 6200 BC in developed form, continue to dominate until level III, *c.* 5800 BC, when greater emphasis is laid on figures modelled in clay. By level II, which ended *c.* 5700 BC, a group of statuettes from shrine A.II.1 is almost entirely in clay and foreshadows the statuettes of Hacılar VI. The development from stone to clay statues is evidently the result of the increasing proficiency in the production of pottery, a process that took place during the lacuna at Hacılar in more eastern regions, namely the plain of Konya.

Although it is still unknown from where the settlers of late neolithic Hacılar came, it is, however, obvious that they did not come from the Konya plain, but from an area in between, presumably from the Pisidian highlands around the lakes of Beyşehir and Eğridir, half way between both regions. Not only the trend towards the production of clay rather than stone statuettes, but also the predominance of the female in late neolithic statuary is marked at both sites, as the importance of hunting declines and efficient agriculture fulfils most of the needs of human nourishment.

In almost every respect the series of statuettes from the culmination of late neolithic culture at Hacılar *c.* 5600 BC shows the peak of modelling in clay, which remained unsurpassed in the period that was to follow. The Hacılar VI figures not only present us with the widest varieties of neolithic statuettes, but they have a charm that is almost unrivalled and offers a brief and unexpected glimpse into the life of the Hacılar society of the time; as in all art, the human element provided the prototype for the divine.

In the pleasant plateau heat of the July or August sun of the Hacılar summer we see at least the female population as they were through the eyes of the observant male artist: the young girls, fine featured, their brown or black hair worn in pigtails or in curls on top of the head, coquettishly parading their splendid small-breasted bodies clad only in briefs of woollen cloth or animal skin, or playing with their pet leopards, brought in by the hunters as cubs from the pine and juniper forests which surrounded the valley. Elsewhere he observed the older women, mothers or mothers to be, mature in form and no doubt desirable, going about their various tasks, naked or scantily dressed in aprons or string skirts, their hair tied up in a bun at the back of the head as befitted their marital status. Here, a young woman was playing with her infant son seated on her lap or suckling it; nearby he observed a dark haired woman taking a rest in the shade while her little boy leans over towards her and whispers in her ear, or the romping of a child on the back of his mother who squats with difficulty because of her obvious pregnancy.

Spying through a cunningly contrived peep-hole in the wall he observes the older women of the village, naked and lithe in body but heavily breasted, nurses of society, or the old crone with coquettishly curly locks round her ageing face, her body bent with age. He watched the heavy form of a pregnant woman resting in the sweltering heat of noon, the young priestess, partly dressed in leopard skin, sporting with her young son, or the dignified grace of the long-robed woman dreaming, with her hand cupping her breasts.

Perhaps in the intimacy of his own home he watched and modelled his young wife as she was about to give birth to a child, pressing her breasts and with her legs pulled up as only a young woman could to ease the pangs of labour. In his mind's eye he saw the all protecting mother, the mistress of life and death, mankind, crops and animals, enthroned on one or two obedient leopards, her sacred animal, while she amused herself with a leopard cub or serenely gave audience in all her majesty to her worshippers, bent forwards to avert the divine gaze. All this the artists of Hacılar VI saw and with consummate skill they left a record, which for charm and vivacity has no equal in other neolithic cultures.

Like so many precious periods in the history of art, this, too, ended with a catastrophe, from which most of the people seem to have escaped with their lives, but which left an indelible mark on the culture.

The statuettes of the next period, Hacılar V–II, from *c.* 5600–5250 BC, lack the ingenious variety, the good proportions and the gentle charm that had distinguished Hacılar VI. The decoration in white paint disappears; most of the figures are now a monochrome red or brown, but just as red-on-white ware increases steadily in quantity from Hacılar V–II, so painted figures become more and more common as time goes on, especially so in Hacılar III and II. Eyes are still incised as in level VI, but from level V onwards the hair is also indicated in this fashion. The number of types is reduced to standing, sitting, kneeling, and resting goddesses, and males or children; leopards or goddesses on animals are no longer found. The cult inventory is further reduced by the disappearance of *ex voto* figurines, stone or clay slab figures with crudely incised features, and ritual animal vessels. Only the cups in the form of human heads continue to increase, and the old religious symbols, such as hands, crosses, bucrania and other animal heads, executed in relief in Hacılar VI, are now transformed into painted designs, often in reserve technique.

Towards the end of the period, that is during Hacılar III and II, many statues reach great technical perfection and considerable size, and they are found not only in the settlement, but buried with the dead.

About 5250 BC, Hacılar IIB was destroyed by fire, and the people who built the Hacılar I fortress were newcomers, introducing a new sort of pottery, a different architecture, and new types of statuettes, which show a marked tendency to schematisation and diminutive size. Only the standing and seated types survive, and a third type is now added which shows the goddess leaning backwards. Stone figures are also found for the first time since Hacılar VI, and obsidian is now used for inlaid eyes. In the treatment of the head, Hacılar I breaks with the earlier tradition and abandons natural-

ism. Side-by-side with the few statuettes, another form in the shape of an effigy vase is introduced, which allows the production of large hollow figures. These occur in all sizes and again have obsidian eyes, or mostly so; but they continue the splendid pottery traditions of the previous period, which suggests some limited continuity in the population. The most remarkable products of Hacılar I statuary are these effigy vases and in particular those of the Twin Goddess, a concept already present in Çatal Hüyük VI, *c.* 6000 BC, but not at present traceable into the sixth millennium until it reappears in Hacılar I. At the same time undoubted male figures return to Hacılar.

In the Hacılar I statuary, then, there are clearly two traditions: the local, which continues into the hollow statuettes or effigy vases, and a foreign tradition introduced by the newcomers from their previous homes in a region which has not yet been defined. Both forms of statuary continue to be buried with the dead, possibly even after the violent destruction of the fortress (*c.* 5100 BC?), in the miserable remains of Hacılar IC and ID. Somewhere around 5000 BC the Hacılar culture came to an end, not with a bang but with a whimper, for the site was deserted and was never again reoccupied. The circumstances under which this occurred are obscure, but the late chalcolithic culture that followed, probably originating in the north-west of the peninsula, shows no obvious links with its predecessor. The end of a culture cycle had come.

Part Three

THE PALEOETHNOBOTANY

Hans Helbaek. The Plant Husbandry of Hacılar

A study of cultivation and domestication

Moving west across Anatolia, from Konya towards Isparta and Izmir, the traveller will observe that the rolling agricultural land of the high intermontane valleys is often characterised by single pear trees haphazardly dispersed throughout the fields. In the summer they bear small, watery and tasteless fruits that, however, are most useful and attractive to the hard-working peasants reaping their grain crops in blistering hot and dry July. Presumably these trees are remnants of the natural forest once occupying the valley floor, spared by the pioneer farmers when millennia ago the land was cleared for agriculture. The trees go on propagating themselves and are still protected when they take root in suitable spots. Apart from those, the hoe and later the plough have left no obstruction to field work.

Prehistoric Hacılar was situated in such terrain, 970 m above sea level and some 425 km roughly east of present-day Izmir. But the area is framed by mountains towards the east only; the western limits are made up by the shores of the Burdur lake. In the neolithic period the low mountains, now almost completely deforested, would have borne a rich arboraceous vegetation of oak, pine, juniper and pistachio, remains of which are still to be seen; the now naked land fringing the lake was probably covered by park-like forest in which such useful species as apple, pear, almond and nettle tree occurred.

About 26 km southwest of Burdur, capital of the province (vilayet), a small river emerges from a spring in the mountains, traverses the open plain for a few kilometres before discharging in the lake. 9,000 years ago, aceramic Hacılar was founded in the flat terrain on the river bank some 500 metres from the point where it breaks out in the open. Well over a millennium later, the neolithic and eventually the chalcolithic settlements flourished by its waters, which, up to this day, support a fairly large and prosperous village.

While summer precipitation in these tracts is very low or non-existent, rain and snow during the autumn and winter create adequate conditions for cultivating the rolling plain; irrigation is prohibited both by topography and by the inadequacy of the river volume. In any one year, at the most half of the area is sown, mainly to wheat and barley, the rest lying fallow. However, by canal irrigation in the river basin about the modern village, slightly to the east of the prehistoric site, fruit and vegetable crops are produced in abundance. Also, occasional smaller areas around springs on the

terrace slope towards the lake are developed by diversion of the water into terraced gardens and orchards.

It is no wonder that the prehistoric agriculture reflected in our finds is of a high standard; in our day the output in vegetable food within the Burdur vilayet is abundant and varied. Wheat is the most important cereal with barley a good second; rye, oat, maize and millet are listed for considerable acreages. Kidney bean, chickpea and vetch are the principal pulses, to which may be added horsebean and lentil; sugar beet and potato are widely grown, and opium poppy and tobacco constitute valuable export crops. Onion, garlic, sesame and, in the season, melon belong to the daily fare of the population. Oil seed and fibre are derived from cotton, flax and hemp. A host of fruits issue from the orchards wherever water is available: grape, citrus fruits, pistachio, walnut, hazelnut, apricot, peach, cherry, apple, mulberry, olive – and many others. Most of them are to be found at Burdur and Hacılar.[1]

Excavated from 1957 to 1960 by the British Institute of Archaeology at Ankara, represented by the then Assistant Director, Mr James Mellaart, the ancient mound disclosed two separate periods of habitation: an Aceramic settlement of the beginning of the seventh millennium BC, and, after a hiatus of more than a thousand years, a late neolithic village that persisted into the early chalcolithic period, abandoned shortly after 5,000 BC.

The radiocarbon dates of Hacılar as quoted by the excavator are calculated on the basis of the recently determined half-life value of 5,730 years. This means that they are some 150 years higher than those based on the Libby half-life 5,568 years. The present writer has always followed the Libby value and is doing so in the present case, too. Thus the date of the aceramic phase is considered to be 6,750 BC, and the neolithic-chalcolithic material would cover the half millennium from about 5,450 to 4950.

For many reasons it is difficult for the palaeoethnobotanist to grasp the often elusive and subtle evidence offered by ancient plant material when he does not know the environment of its origin. Knowledge of topography, hydrology and flora of the terrain are important factors in the evaluation of the ecology and its special local products. Preferably he should also attend the excavation and himself retrieve the fragile plant material, making his first observations even before it is lifted out of the soil.

Being otherwise engaged during the years of the Hacılar excavations, I had, when the plant material was passed into my hands, no idea of its natural background. I therefore made a brief excursion to the Burdur lakeside and Hacılar when, in 1962, I was established in the excavation camp at Çatal Hüyük on the Konya plain, by road about 375 km east of Burdur. Late in the season as it was (July), I succeeded in getting some impression of the local flora and had the opportunity to form an opinion of the topography as relevant to the neolithic agriculture.

A generous grant from the Danish Carlsberg Foundation had enabled me to travel to Anatolia and, in the spring, to live on my own in the village of Küçük Köy, until the excavation team settled down there for the year's work on Çatal Hüyük; James Mellaart covered the expenses for the Hacılar excursion for myself and a Turkish guide

out of his excavation funds. It gives me great pleasure to express my indebtedness to the Board of Directors of the Carlsberg Foundation; and to my cheerful friend, Mellaart.

Being very keen on pictorial documentation, I feel it proper to extend my thanks also to my block makers, the Copenhagen lithographic establishment, the successors to F. Hendriksen. Through patient understanding of my particular problems this firm has, over the years, supplied very many blocks of a high standard that meets my sometimes rather exacting wishes.

Technical Remarks

This being an archaeological publication, it is anticipated that some readers will be unfamiliar with certain of the botanical terms employed in the description of cereal spikes. In order to minimise this inconvenience – and, incidentally, to allow the writer to express himself freely – some illustrated definitions are inserted here.[2] It is hoped that, together with the documentary photographs, they may guide the reader through the description of the prehistoric plant material as also through the dissertations on genetical and agronomical phenomena.

While comparative morphology may be described as the palaeoethnobotanist's principal tool, dimensions and proportions of seeds and cereal grains are also of great importance in identification. In the Dimension Table and elsewhere the following abbreviations are used:

L = length; in cereal grains from the embryo point (radicle) to the apex; in round seeds (e.g. pea) the greatest dimension parallel to the cotyledons.

B = breadth, width; in cereal grains maximum dimension between the flanks; in discoid seeds (e.g. lentil) the greatest diameter.

T = thickness; in cereal grains the maximum dimension from the dorsal to the ventral side, the latter being the surface dissected by the ventral furrow; in leguminous seeds (e.g. pea and lentil) the maximum dimension at right angles to the cotyledon plane.

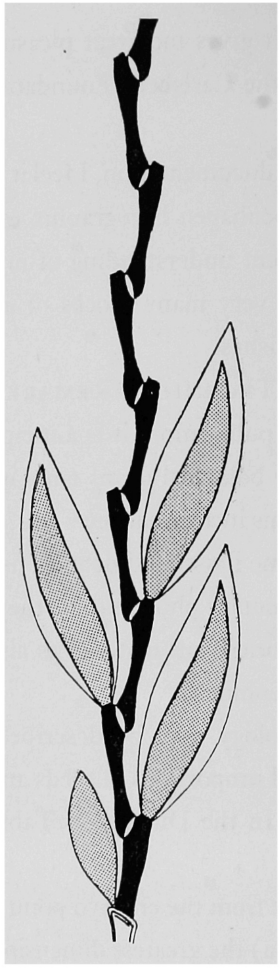
In order to obtain a common denominator for comparison of the grains of naked and hulled barley, only such grains of the latter variety are employed for measuring as have lost their paleas on carbonisation, but have preserved the embryo point and an undamaged apex.

Indices are the proportions of cereal grains expressed per cent. For example, a grain of L 5·00, B 2·50, T 2·25 mm, is calculated as follows:

$$\frac{\text{B } 2{\cdot}50 \text{ mm}}{\text{L } 5{\cdot}00 \text{ mm}} = 0{\cdot}50 \text{ (B:L index 50)}; \quad \frac{\text{T } 2{\cdot}25 \text{ mm}}{\text{B } 2{\cdot}50 \text{ mm}} = 0{\cdot}90 \text{ (T:B index 90)}.$$

Thus a grain of a low T:B index is flat, while a high T:B index, sometimes more than 100, means that the grain is laterally compressed such as Einkorn.

Whereas all barleys treated in this report belong to the same cytological group, and are *diploid* with 2×7 chromosomes (conventionally written: $2n = 14$), the wheat genus is classified on the basis of groups differing in chromosome number. The Einkorn group is *diploid* with 2×7 chromosomes, the Emmer group *tetraploid* with 4×7, and the Bread wheat group *hexaploid* with 6×7 chromosomes ($2n = 42$).



1 Analytical diagram of cereal spike.

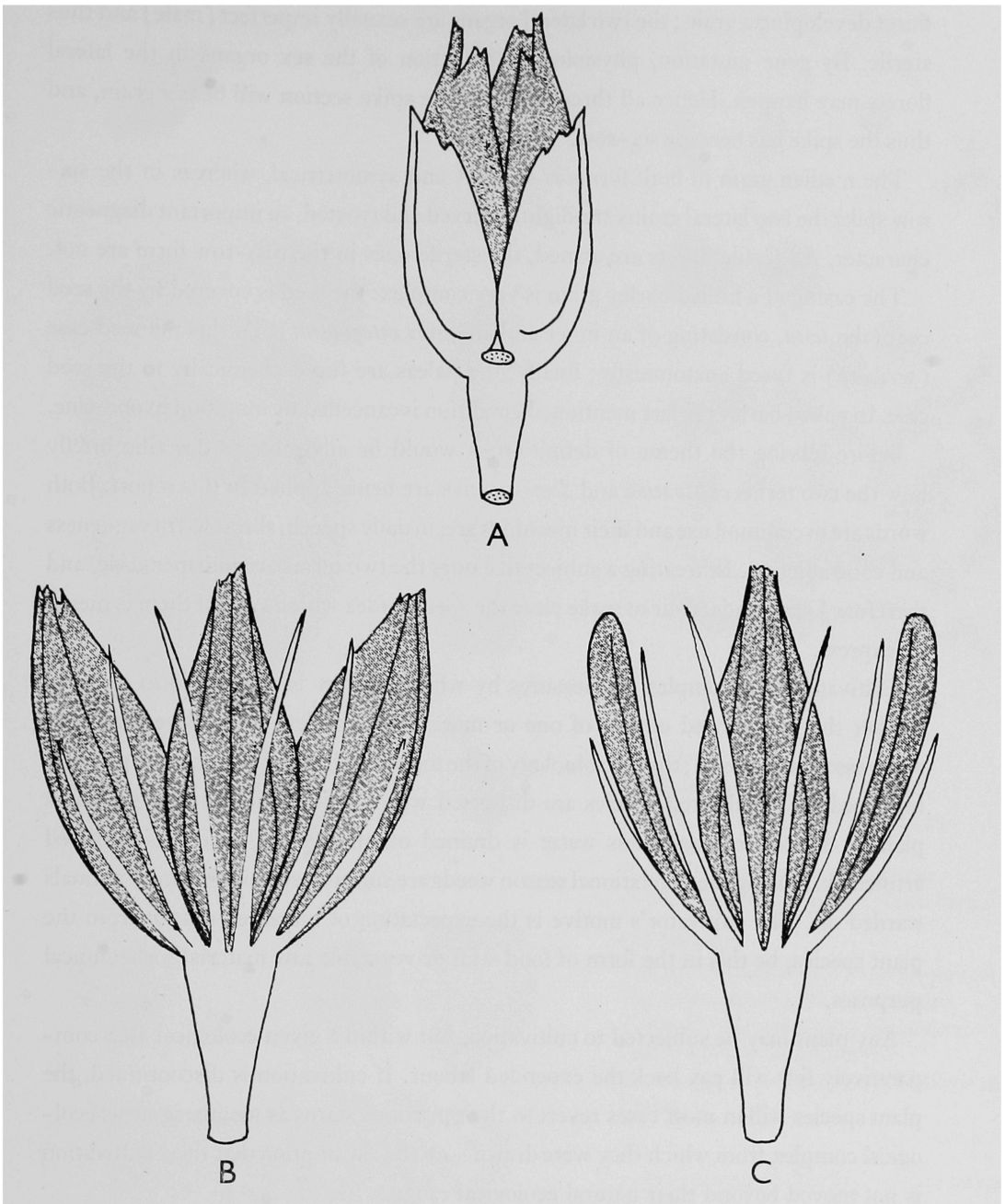
Across this classification the wheats are sometimes divided, according to properties in their spikelet structure, into 'Glume wheats' or 'Hulled wheats' (Einkorn, Emmer, wild as well as domesticated, Spelt and others); and 'Naked wheats' or 'Free-threshing wheats', comprising Bread wheat, Club wheat, Hard wheat and others, irrespective of chromosome numbers; all of them domesticated.

An analytical diagram of a cereal spike is shown in figure 1. The black, composite column is the *axis* or *rachis*. Its component parts, the *internodes*, are separated by white interstices denoting the points at which, in the wild brittle-spike cereal, the axis comes apart in sections or units consisting of the internode with attached *spikelet(s)*. These disintegration points may become solid by mutation; then the axis does not fall apart, but remains one, tough column. The toughness of the spike is the most significant property in domesticated cereals.

The *spikelet* consists of two *glumes* (the hatched area) enclosing one or more *florets* (left white). A vestigial spikelet is shown at the base of the axis.

The floret consists of two inner bracts, the *lemma* and *palea*, which contain the *ovary*, *styles* and *anthers*, eventually developing *one* fruit (*caryopsis* or *grain*). Anatomically the grain is a *seed vessel* containing one seed, but the two organs, the *seed case* and the *seed coat*, are fused into one (grain shell).

In figure 2:A, the dotted ovals at the upper and lower ends of the internode are the disintegration scars. In wheats the internodes bear only one spikelet which, however,



2. Wheat and barley spike sections (internodes and glumes are left white, florets are hatched).

A: Ventral view of wheat (Emmer) spikelet with internode.

B: dorsal view of *spike section* or *triplet* of six-row barley.

C: the same of two-row barley.

may contain from one to many florets. In Einkorn one grain is developed, in Emmer two, and in Bread wheat several; additionally, one or more rudimentary florets will usually be present.

As opposed to wheat, the barley internode bears three spikelets, each with its own pair of reduced glumes and each containing only one floret (fig. 2:B, C). Structurally, the two forms are identical; the difference is a matter of morphological and physiological development in the lateral florets.

In two-row barley – the ancestral form – only the median spikelet bears a fertile

floret developing a grain; the two lateral organs are sexually imperfect (male) and thus sterile. By gene mutation, physiological actuation of the sex organs in the lateral florets may happen. Hence all three florets of the spike section will bear a grain, and thus the spike has become six-row.

The median grain in both forms is straight and symmetrical, whereas in the six-row spike the two lateral grains are slightly curved and twisted, an important diagnostic character. All fertile florets are awned, the sterile ones in the two-row form are not.

The casing of a hulled barley grain is very complex: the seed is covered by the seed coat (the *testa*, consisting of an inner and an outer *integument*). To this the seed case (*pericarp*) is fused anatomically; finally, the paleas are fused chemically to the seed case. In naked barley the last mentioned condition is cancelled by mutation in one gene.

Before leaving the theme of definition, it would be advisable to describe briefly how the two terms *cultivation* and *domestication* are being applied in this report. Both words are in common use and their meanings are, in daily speech, shrouded in vagueness and contradiction. In treating a subject like ours the two terms are indispensable, and therefore I shall endeavour to make clear the specific idea which each of them is meant to express.

Cultivation is a complex of measures by which ecology is influenced in order to further the growth and output of one or more plant species. Natural vegetation is suppressed or removed; the microbiology of the topsoil is changed by hoeing or ploughing; seeds of the desired species are dispersed with a suitable density, or seedlings planted. In certain conditions water is drained off the terrain, in others supplied artificially. During the vegetational season weeds are suppressed and predatory animals warded off. The cultivator's motive is the expectation of increased output from the plant species, be this in the form of food stuff or vegetable raw material for technical purposes.

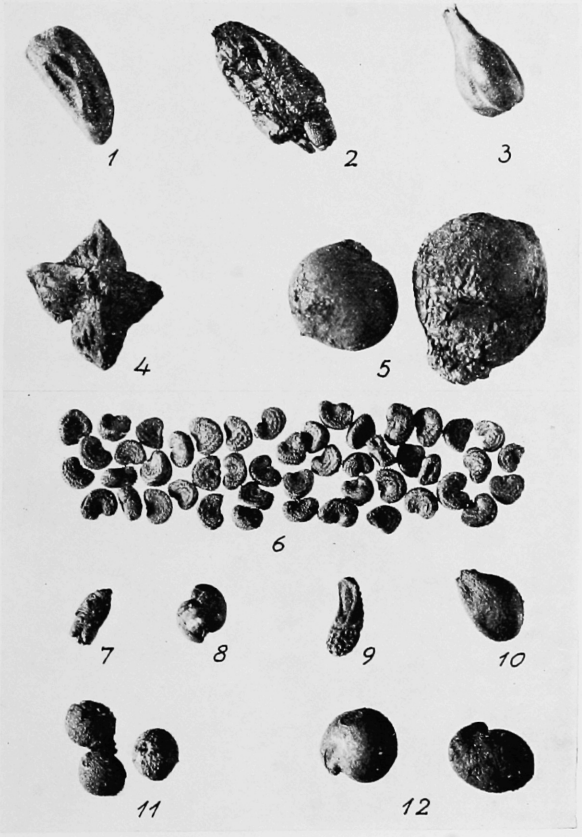
Any plant may be subjected to cultivation, but within a given ecological area comparatively few will pay back the expended labour. If cultivation is discontinued, the plant species will in most cases revert to their previous status as members of the ecological complex from which they were drawn – on the assumption that their cultivation is not moved beyond their natural ecological range.

Some obviously profitable food plants were, in the start, subjected to this persistent interest and care by ancient man. In concentrating pure populations of one of the wild grasses, for instance wild wheat or barley, or one of the large-seeded legumes, he might in the long run observe certain freaks occurring in his fields. These were individuals in which gene mutation had taken place, a process that happens everywhere in nature, but at a very low rate, maybe one in several million plants.

In the wild, such mutants would in most cases be suppressed by their normal brethren, while man, if he discovered the mutant in his field and considered it economically promising, might pick it out and furnish the material conditions most propitious for its survival. In so doing he exempted it from the pressure of natural competition and selection which prevails in any plant community, whether spontaneous or artificial.

a

b



c

PLATE I

(*a*) Aceramic
Top left: grain of (Wild ?) Einkorn
Top right: grain of naked barley
Bottom left: nine grains of Emmer
Bottom right: two grains of hulled barley

(*b*) Aceramic
Top left: two achenes of Field Gromwell
Top centre: seed of White Goosefoot
Top right: seven seeds of Chesse weed
Centre left: two seeds of lentil
Bottom: spikelet fragments of Einkorn and Emmer

(*c*)
1. seed of Juniper (Well); 2. weevil trapped in grain (Q.VI.5); 3. indeterminate pod ? ('Wila') (Well); 4. spike fragment with four achenes of Pheasant's eye (Q.VI.1); 5. two nuts of Pistachio (Q.VI.1); 6. seeds of Forked catchfly (Q.VI.1); 7. fragment of weevil (Q.VI.1); 8. seed of Cow-herb (Q.VI.5); 9. achene of Chian Bugle (Q.VI.2); 10. seed of Lesser Bindweed (Trench); 11. three achenes of Fumitory (Well); 12. Two seeds of Caper (Q.VI.5)
3.6 diam. *Photo: H. Helbaek*

PLATE II

(*a*) Grains of Goat-face grass (Well)
(*b*) Spike fragments of Goat-face grass (Well)
(*c*) Grains of domesticated Einkorn (Well)
(*d*) Grains of Wild Einkorn (Well)
3.6 diam. *Photo: H. Helbaek*

This practice is described in detail in subsequent sections of this report. Suffice it here to point out that by sidetracking the natural balance of competition, the cultivator made himself indispensable to these mutative freaks. The moment he left the field to itself, some of the unchanged cultivated plants would slide back into the natural balance of competition with the local wild vegetation; while his pets, the mutated individuals, would be squeezed out of existence. If, on the other hand, he kept up his particular treatment of the mutants, they were tied to him forever; they were domesticated.

The most important single mutative evolution characterising domestication of a plant is the loss of dispersal power, on which its continued propagation rests. That, conversely, is the fundamental advantage to man in that, when by controlling its dispersal he dominates completely the progeny of the domesticate and can exploit its fruit to his best advantage.

Thus it may be concluded that a cultivated plant need not necessarily be domesticated – indeed, cannot by any means so be from the outset – whereas on the other hand, a domesticated plant can exist only as a cultivated plant. Cultivation is a matter of governing ecology, while domestication depends on some physiological inefficacy in a plant, of which man takes advantage. Much of what has been said about mutants goes for hybrids also.

In the course of this report, the reader will encounter the adjectival combination 'wild, cultivated'. This is meant to signify that although cultivated, maybe for centuries, a plant like barley, for instance, does not necessarily undergo any change removing it from its wild morphological and physiological character. And as long as that situation obtains, it will be able to revert to a free existence. Thus it cannot logically be deprived of its taxonomical pigeonhole and remains, to the present writer, *Hordeum spontaneum.*

The Material

When investigating the bottom of the aceramic level, the excavators despaired of finding any plant material indicating the pattern of vegetable economy on which the early society subsisted. As a safety measure, however, a small sample was taken from an ashy layer and sent in for examination; it is dated to about 6750 BC.

The ash was separated by carbon tetrachloride (CCl_4) and produced about a tablespoon-full of highly distorted and mostly indeterminable fragments of carbonised grains, seeds and other plant parts. Also, the residue largely consisted of siliceous particles of straw and other parts of grasses among which tiny fragments of the glumes of wheat were prominent.[3] Many of them could be referred to the comparatively solid tips of the glume veins of Emmer and some to indeterminable cereal awns. Among the carbonised fragments it was possible to pick out a few dozen grains and seeds with enough specific characters left for their identity to be ascertained. This material is briefly described in the following section (Plant List A).

Dated to about 5450 BC, the late neolithic level yielded carbonised plant debris from five houses, generally very badly disfigured by heat. Among the samples produced from levels III and II–I, the last mentioned came from a disused well and is the least damaged of all the Hacılar material.

In the three plant lists (Lists B, C, and D), the several species and their quantities are accounted for; the circumstances under which they occurred in the ruins are summarily described by the following extracts from James Mellaart's excavation journal.

LEVEL VI

House P.2 contained one deposit of badly burnt grain and pea, found on the floor behind a partition wall.

House P.3 yielded two portions, one of grain and one of Bitter vetch; both found on the floor against the north wall.

In *House Q.1*, one small heap of mixed wheat and barley was lying on the floor.

House Q.2 contained one large quantity of pea in a plaster bin built against the eastern end of the north wall; at the opposite end of the same wall a small portion of badly preserved barley was found in another bin.

In *House Q.4*, a plaster grain bin in the northeast corner proved to contain a small deposit of lentil, completely devoid of remains of other species.

House Q.5 yielded the largest quantity of all. Two large heaps of mixed wheat lay in the centre and in the southern end of the house. Both evidently had fallen from an upper storey and were very much damaged by heat.

LEVEL III

The *Trench* probably hit a kitchen and a storage room on the floor of which a mixture of cereals and pulses were found dispersed.

LEVEL II

In *House Q.1* a deposit of cereals mixed with some lentil was found on the floor of what seemed to be a kitchen building, spread on and around querns. In a grain bin, next to a built-up table, a large deposit of barley was encountered.

LEVEL II–I

Well deposit; the vegetables seem to have been deposited in the well at the end of level II or the beginning of level I. It is the richest of all samples although not very large in volume.

In total, 12,210 ccm (*c.* 2 and 2/3 gallons) of cereals and legumimous seeds were recovered from the neolithic-chalcolithic strata at Hacılar. Barley is the largest single component, 5,589 ccm or 45 per cent; with 4,840 ccm wheat makes up 40 per cent; and together pea, lentil and vetch occurred in a quantity of 1,725 ccm or 15 per cent.

Representing different human activities, the plant lists are not arranged taxonomically. Therefore the identified species are listed below according to the system employed by Hikmet Birand[4] in his preliminary inventory of the plants then published for Turkey. This gives the family, genus and species.

CUPRESSACEAE	*Juniperus communis*	Juniper
GRAMINEAE	*Taeniatherum crinitum*	Medusa-head grass
	Aegilops umbellulata	Umbellate Goat-face grass
	Triticum boeoticum	Wild Einkorn
	T. monococcum	Einkorn

GRAMINEAE *contd.*	*T. dicoccum*	Emmer
	T. aestivum	Bread wheat
	Hordeum spontaneum	Wild barley
	H. distichon	Hulled 2-row barley
	H. vulgare	Hulled 6-row barley
	H. vulgare var. *nudum*	Naked 6-row barley
CYPERACEAE	*Scirpus maritimus*	Sea club-rush
ULMACEAE	*Celtis australis*	Nettle tree, Hackberry
POLYGONACEAE	*Polygonum patulum*	Knotweed
	P. aviculare agg.	Knotgrass
CHENOPODIACEAE	*Chenopodium album*	White goosefoot
	Chenopodium sp.	Unspec. goosefoot
CARYOPHYLLACEAE	*Silene dichotoma*	Forked catchfly
	Silene sp.	Unspec. catchfly
	Vaccaria segetalis	Cow-herb
RANUNCULACEAE	*Adonis flammea*	Pheasant's eye
FUMARIACEAE	*Fumaria* cf. *officinalis*	Fumitory
CAPPARIDACEAE	*Capparis spinosa*	Caper
ROSACEAE	*Amygdalus orientalis*	Wild almond
	Pirus malus	Apple
LEGUMINOSAE	*Lens esculenta*	Lentil
	Pisum elatius	Purple pea
	Ervum ervilia	Bitter vetch
	Cicer arietinum	Chickpea
	Cicer sp.	Unspec. pea
	Lathyrus cicera	Grass pea
	Vicia noëana	Vetch
	Trigonella noëana	Trigonel
ANACARDIACEAE	*Pistacia atlantica*	Pistachio
MALVACEAE	*Malva nicaeënsis*	Mallow
CONVOLVULACEAE	*Convulvolus arvensis*	Lesser Bindweed
BORAGINACEAE	*Heliotropium europaeum*	Heliotrope
	H. cf. *suaveolens*	Heliotrope
	Lithospermum arvense	Field gromwell
VERBENACEAE	*Verbena officinalis*	Vervain
LABIATAE	*Ajuga chia*	Chian bugle

In the neolithic and subsequent periods, building practice in mountainous western Anatolia comprised extensive use of heavy timber combined with mud brick. Consequently house fires were fierce and devastating, a circumstance that, much to our disadvantage, is reflected in the vegetable food remains from Hacılar. Rich in detail, the large quantities of grain are excessively damaged by puffing and distortion. Therefore, it is largely impossible to distinguish between the grains of the various species; this

handicap is most damaging in the case of wheat. Thus the volume of barley and wheat from each sample as stated in List B, may comprise from two to five species or varieties. This means that representative grains or spike parts of each species have been satisfactorily established, but that the individual ratios were impossible to ascertain. Some of the illustrations, and measurements as given in the Dimension Table, also show this draw-back. The Well deposit from level II–I is an exception in that, generally, the damage is much less than in the other deposits. For this reason most of the photographs of grains and weed seeds are taken from that particular lot.

Aceramic Hacilar

These carbonised remains of grains and weeds, the earliest hitherto from Anatolia, were washed out of an ash sample. Although the cereal grains are excessively damaged by fire and no exact dimension can be obtained, there is no doubt as to the species present in the deposit. Also, their ratios cannot be established; the list below expresses, by the number of crosses, the examiner's subjective impression of their relative frequency.

Plant list A

(? Wild) Einkorn (*Triticum boeoticum*)	×× ?	
Emmer (*T. dicoccum*)	×××	no exact dimensions
Hulled two-row barley (*Hordeum* cf. *sponteneum*)	××	obtainable
Naked six-row barley (*H.vulgare* var. *nudum*)	×	
Lentil (*Lens esculenta*)	3	2·50–2·92 mm
White goosefoot (*Chenopodium album*)	1	1·25 mm
Mallow (*Malva* cf. *nicaëensis*)	15	0·92–1·33 mm
Heliotrope (*Heliotropium* cf. *suaveolens*)	1	fragment
Field gromwell (*Lithospermum arvense*)	2	2·42 × 1·58 mm
Vervain (*Verbena officinalis*)	1	1·25 × 0·42 mm

The material was not carbonised in an enclosed space, but obviously in an open fire such as the hearth, and it may well have been repeatedly exposed to heating. Apart from the grain of naked barley illustrated in pl. 1:a, they have all lost the grain shell and their present surfaces are pockmarked and blistery. Outlines and ventral furrows do, however, furnish evidence for Emmer, (? Wild) Einkorn, hulled and naked barley (all pl. 1:a); spike parts of the two wheats add their details to the picture (pl. 1:b, lower group).

Twenty-four fragments of Emmer spikelets, 42 of Einkorn, one internode of two-row barley, and one of six-row naked barley were picked out.

The illustrated grain of Einkorn (pl. 1:a) has the general outline of the domesticated species, but it is so narrow that in this respect it fits better with with the wild progenitor, *T. boeoticum*. At Ali Kosh[5] the domesticated Einkorn is established for the time shortly after 7000 BC; but it seems rash, and not necessary, to employ this one, badly preserved grain to argue that the same thing had happened at aceramic Hacılar.

A faint twist in the naked barley grain proves that it comes from a six-row spike, the existence of which is confirmed by the above-mentioned internode of that variety.

The lentil seeds belong to the small dimensional order which appears first in Anatolia. The development, or introduction, of a larger-seeded variety is not evident at Hacılar until level II–I, *c.* 5000 BC.

All five weed species belong to field or fallow land. Mallow, Heliotrope and Gromwell are known from the early site of Ali Kosh in Khuzistan; the nutlet of Vervain is very small for the species, but well enough preserved morphologically to prove its identity.

This is as far as we can go in the evaluation of plant economy during the early phase of the Hacılar settlement. Such as it is, it conforms with knowledge of these primitive times as obtained from other finds. However, the lively activity aimed at the elucidation of life in prehistoric Anatolia is bound to come up with more satisfactory information within a not too remote future.

Principal Neolithic and Chalcolithic Food Plants

The burnt level VI house Q.5, and the well of the early chalcolithic period furnish ample opportunities for the study of the domesticated wheats of Anatolia as also of some of their wild relatives.

House Q.5 contained practically every species put down in List B, but the corn is so badly deformed by heat that the wheat grains are almost useless for statistics. Emmer, Einkorn and Bread wheat may be demonstrated by a few reasonably uncorrupted grains; but the wealth of glumes and spikelet forks furnish excellent evidence for the character of the spikes and for the composition of the grain store. The material from the well is not quite so badly distorted; most of the illustrations of cereal grains and the bulk of the dimensional data, therefore, are taken from the latter deposit.

When house Q.5 collapsed in the conflagration, two large heaps of wheat, put away in the upper storey, landed in the debris of the ground floor. One heap, 1,240 ccm of which was recovered, had been threshed before the fire, while the other portion, amounting to 3225 ccm was unthreshed, as is proved by tens of thousands of spike fragments.

Whereas the large wheat deposits are almost devoid of seeds of weeds, the Well deposit supplied the bulk of the weed species enumerated in List D, and also a generous sprinkling of the two wild cereals, Umbellate Goat-face grass and Wild Einkorn, evidently collected separately. By and large, the Well deposit is somewhat mysterious; it does not at all fit in with the agricultural standards of Hacılar as a whole, and although the grain was obviously threshed, a multitude of spike parts are present, especially of the two wild species.

What makes the Well deposit so interesting is the evidence for collection of wild grasses in this conspicuously prosperous community. Neither Wild Einkorn nor Umbellate Goat-face grass occur as weeds in annual crops, while they may grow on canal embankments and in other disturbed although uncultivated areas, and on fallow land. It is, however, most probable that they were fetched from the rocks above the village, which are their natural habitat.

List B *Cereals and Pulses* figures are cubic centimetres s = a few grains or seeds i = internodes and glumes * half-life 5,568 years

level *and* approx. date BC*	VI 5400						III 5250	II 5200	II–I 5050
area : house	P.2	P.3	Q.1	Q.2	Q.4	Q.5	trench	Q.1	well
1. Goat-face grass						i	s		4; i
2. Wild einkorn						?i	3; i	s; i	21; i
3. Einkorn	210		15	s		4475; i		s; i	9; i
4. Emmer		s	s; i	s		i	2; i	9; i	22; i
5. Bread wheat				s; i		i	70; i	s; i	s; i
6. 2-row hulled barley			s; i	i		s; i	99		67; i
7. 6-row hulled barley				140					i
8. 6-row naked barley		3050	165; i			s; i		1935	23; i
9. Lentil		s	s	s	65	s	s	54	s
10. Purple pea	565	s		1030		s	20		s
11. Bitter vetch	s	50	s	s		s	s		s

Dimension Table, nos. 1–11. Figures are in millimetres.

		L	B	T
1.	Goat-face grass	5·83 (4·67–7·00)	2·02 (1·50–2·50)	1·38 (1·00–2·00)
2.	Wild einkorn	5·43 (4·08–6·25)	1·39 (0·92–2·00)	2·06 (1·42–2·42)
3.	Einkorn	4·96 (3·83–6·33)	2·35 (1·83–3·00)	2·30 (1·67–3·17)
4.	Emmer	6·37 (5·50–7·33)	2·92 (1·83–3·33)	2·43 (1·83–2·83)
5.	Bread wheat	4·89 (2·50–6·33)	3·06 (1·50–3·83)	2·46 (1·50–3·27)
6–7.	Hulled barley	6·30 (4·50–7·83)	2·70 (1·67–3·67)	1·97 (1·33–2·67)
8.	Naked barley	5·17 (4·33–6·33)	2·39 (1·83–3·00)	1·70 (1·17–2·17)
9a.	Lentil, level VI		2·40 (1·92–3·00)	1·30 (1·08–1·67)
9b.	Lentil, level II		3·08 (2·58–3·67)	1·85 (1·58–2·25)
10.	Purple pea	4·85 (4·00–5·50)		4·50 (3·50–5·50)
11.	Bitter vetch	2·54 (2·00–3·25)		2·47 (1·75–3·25)

WHEATS

1. Umbellate Goat-face Grass (*Aegilops umbellulata*)

This is the first time that Umbellate Goat-face grass has been recorded as a component of a prehistoric grain deposit. Roughly similar to Emmer, individual grains may well occur sporadically among the former without being recognised; in the present case the grains are so many and the spike fragments so numerous that they inevitably attracted attention (pl. 11:a, b).

The grains are long, narrow and fairly flat. Whereas for length they compare well with Emmer from most finds (but not from Hacılar), the B:L index is extremely low, namely, 35, as compared with that of the Hacılar Emmer which is 46. The T:B index also, is conspicuously small: 72 as against 84 in Emmer. The ventral side is flat or slightly concave longitudinally, the dorsal side evenly rounded transversely, and not ridged as is usually the case in Emmer. The grain shell is characterised by longitudinal grooves caused by the tight fit of the stiff glumes, and the surface is minutely striped from the longitudinal cells of the seed case.

Fragments of every part of the spike occur in the deposit, except the awn tips. Most numerous and best preserved are the two lowermost internodes and their large, fan-shaped and copiously ribbed glumes. Detached margin fragments of the latter abound, showing the bases of two or three of the original four or five stiff, spreading awns. The upper, rudimentary internodes and glumes are well represented, and even the tiny terminal spikelet appears among the debris.

As opposed to most species of the genus, the spike of Umbellate Goat-face grass does not disintegrate at maturity, but breaks off above the culm and constitutes as a unit an effective mechanism for dispersal and anchoring.

At first sight, these fairly large grains make one wonder that the species was not habitually subjected to collection, or even cultivation, in suitable localities. There are, however, two properties which would discourage utilisation of this particular species: first, only the two lowermost spikelets are fertile and together usually develop at the most three full-sized grains; further, the spike is so tough and sturdy as to be practically

unthreshable. It is obvious that the other cereals in the Well have been threshed; even the Wild Einkorn bears witness to this by the majority of the grains having been broken in two or three before they carbonised, and many of the unbroken ones show semi-fractures. It may be taken for granted that the Goat-face grass also was subjected to this treatment; but only carbonisation paved the way for the disintegration of the spike, as evinced by the excellent state of preservation of grains, glumes and other spike parts.

Umbellate Goat-face grass belongs to the mountain steppe in parts of Anatolia and along the Zagros range and beyond. It requires a certain amount of humidity and does not, for instance, occur in the arid central plateau of Anatolia.

2. Wild Einkorn (*Triticum boeoticum*)

3. Einkorn (*Triticum monococcum*)

It is commonly assumed that the relationship between these two species is comparatively uncomplicated; no factor of interspecific hybridization is considered. The domesticated species is regarded as the result of mutation and recombination of genes in the wild species, encouraged by concentration in the artificial ecology created by man. Subsequent crossings between mutants, spontaneous and eventually human selection resulted in the stabilised domesticated forms of which the Hacılar and Çatal Hüyük Einkorn are early representatives.

Fortunately the Well deposit contained both species, presumably burnt at the same occasion and under the same conditions, thus rendering comparison as convincing as possible. A further advantage was the writer's opportunity to collect and study, within the same general area – although in a different ecological niche – live specimens of the wild species.

In the Wild Einkorn studied in the Çumra district (Konya plain) in 1962, about 60 per cent of the spikelets have two fertile florets (i.e., are twin-grained). Grains from the single-floret spikelets are 5·3 to 7·4 mm long, laterally compressed and approximately elliptical in lateral aspect as also in cross section; the ventral furrow is deep, but so narrow as to be almost invisible among longitudinal creases of the grain shell, and they are without a definable ventral plane. Both the embryo point and the acute apex lie more or less in the lateral symmetry axis (cf. pl. 11:d).

Of the grains from the twin-floret spikelets, the primary one is the larger, although not as large as in the just described type; both grains have a flattened ventral plane, a distinct ventral furrow, and they are asymmetrical in lateral aspect (pl. 11:d, bottom). Most often the secondary grains are rather small, sometimes aborted. In grains from twin-floret spikelets the average T:B index is 119 as compared with 153 in the single-floret ones.

A computation of the incidence of twin-floret spikelets in the ancient material is prohibited by its highly fragmented state in consequence of threshing. Apart from that, there is agreement in all morphological characteristics between the fresh and the carbonised material. Even the T:B indices are almost the same, namely, 148 in the carbonised single grains.

The average length is, however, about 18 per cent less, rather more so than should be expected if the carbonised grains have been of the same size in the fresh state as those

collected in 1962 (leg. Helbaek TE 2543 and 2665). This need not, however, be the case; the fresh comparison material comes from an area the ecology of which is affected by artificial irrigation; therefore the grains are probably larger than those from a natural mountainous habitat. The very existence today of the Wild Einkorn in the Çumra area (av. rain: 237 mm/year; evaporation: 930 mm/year)[6] must be considered the outcome of special circumstances: seed transport from remote mountains and improvement of the ecological conditions by the waters of the river Carşamba, which, originating in the Beyşehir lake to the west, flows through the Taurus foothills for most of its course, finally to be swallowed by up the canal system on the plain.

Before turning to the domesticated Einkorn (*Triticum monococcum*), it must be emphasised that it is not suggested that there is any immediate relationship between the two species as found together; both types of grain are clearly definable and can always be separated; no freak or intermediate forms occur. Indeed, they have a common ancestor, but the actual digression from the hereditary line lies many hundred years before chalcolithic Hacılar. The domesticated form here encountered is not the definite Anatolian type of the third and second millennia. But it differs in so many ways from the wild species that it can safely be asserted that it had a long history as an artifact before it ended up in the Well. Apart from morphological and dimensional divergencies, a chemical difference in the grains may even be suggested, possibly a dissimilar proportional content of starch and protein. The wild grains have preserved their characteristic shape and the dull surface of their shell, as well as the typical longitudinal pressure creases produced by the stiff glumes, because the endosperm has not swelled very much on carbonisation. The shell of the domesticated grains, on the other hand, is smooth and glossy, and the creases are rarely preserved – evidently because the effect of the heat on the endosperm has caused a greater internal pressure to strain the seed case. In other words, it seems as if, among other consequences of domestication, selection has been directed towards a change from a 'hard' to a 'soft' mutative type of grain. This suggestion is supported by the observation that before carbonising the majority of the wild grains were broken by threshing, while those of the cultivar obviously came through this treatment more-or-less unscathed. In passing it may be mentioned that the fresh grain of Wild Einkorn is extremely hard and brittle.

The morphological metamorphosis brought about by domestication is clearly illustrated in pl. 11: c, d, although allowance must be made for a certain inflation on carbonisation of the domesticated grains. While the average length decreases, the width increases very much both in single- and twin-floret grains. The thickness also increases visibly, but the over-all T:B index falls to an average of 96. This is caused by the conspicuous expansion in width, from an average of 1·39 mm in the wild, to 2·35 mm in the domesticated species, an increase of 75 per cent. All grains are plumper and their actual volume is considerably greater. There is no longer a striking difference between the shapes of the single and the twin grains. In many of the smaller – usually twin – grains, the general shape reminds of that of Emmer with a T:B index of 70 to 90, and a fairly flat, although longitudinally convex ventral plane. Even if not directly demonstrable in the somewhat distorted Hacılar material, there is hardly any doubt that the

incidence of twin-floret spikelets is still great, rather more so than in the finally stabilised Einkorn of later (third-second millennium) days.

Two critical dimensions are used to separate spikelet remains of Emmer from those of Einkorn when these species occur in mixture: the width of the spikelet base measured across the middle of the disintegration surface, *Dimension* A; and, at right angles to this plane, the width of the glume base immediately above the suture, *Dimension* B.

The Emmer of our material is so vigorously developed that erroneous identification is unlikely; both dimensional ranges in Emmer are completely divorced from those in Einkorn (cf. the Emmer figures, p. 206). On the other hand, the deposits from where the Einkorn spikelet forks are picked, consist of both the wild and the domesticated cereals. It has proved impossible to find irrefutable criteria on which to base the distinction between the two diploid species and the table below possibly comprises both. It is, in fact, feasible that at this stage there was no difference at all; the grains of the newly selected mutants may well have changed morphologically without any conspicuous difference being traceable in the spike parts. That the Hacılar Emmer in this respect is so vastly different from its wild progenitor is due to the circumstance that at this time the former had been subjected to changes of environment and selection during two thousand years, or probably more.

Dimensions of 100 spikelet forks of Einkorn (*see* fig. 3)

Dim. A: 1·56 (1·24–1·84) mm

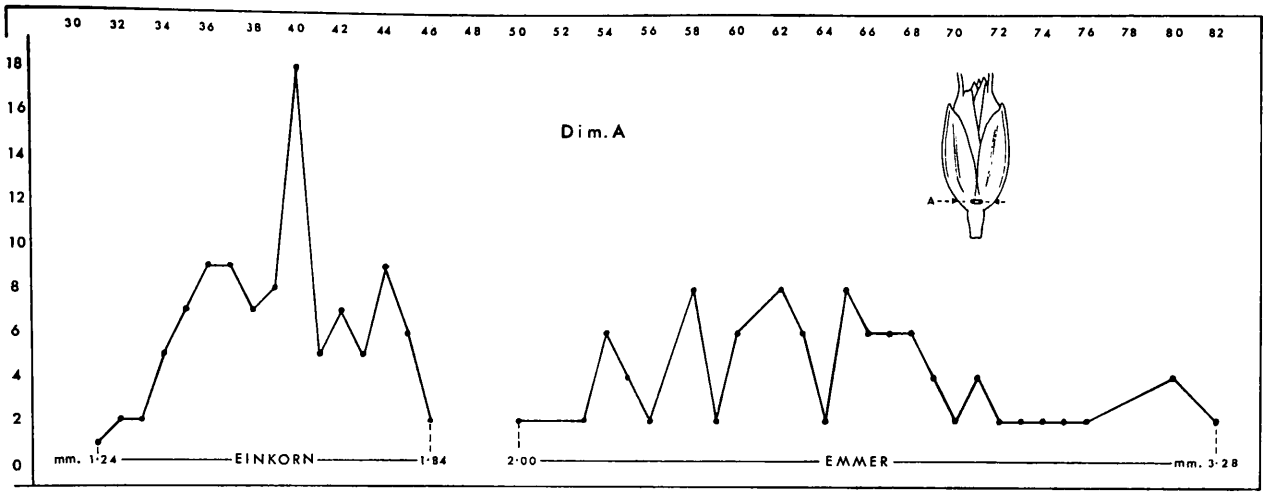
Dim. B: 0·66 (0·48–0·88) mm

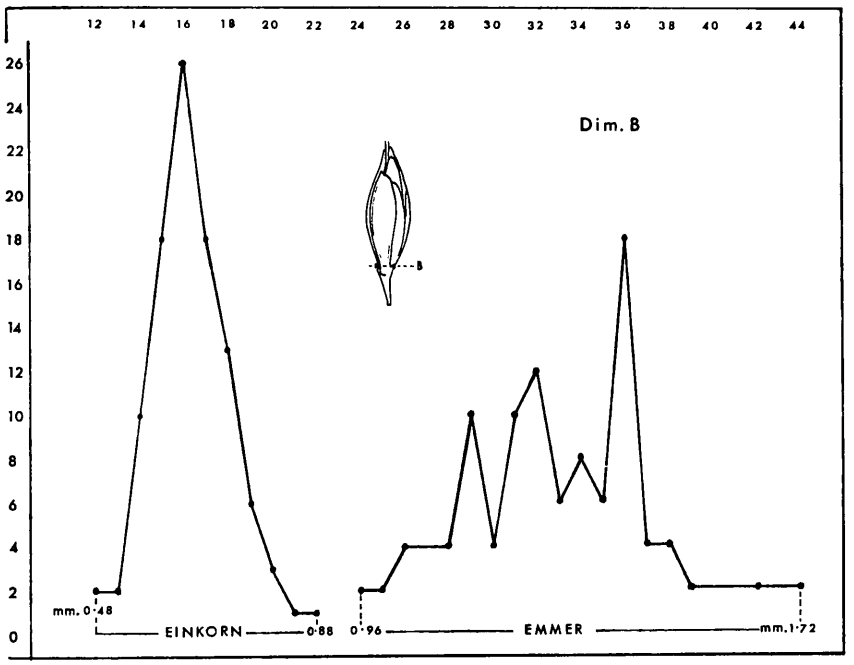
B:A index 42·3 (32–55)%

Disregarding the possible occurrence of domesticated Einkorn in the Aceramic level at Hacılar, discussed on p. 198, the first examples of the domesticated species known at present come from Ali Kosh in Iranian Khuzistan, from levels of shortly after 7000 BC. The earliest profuse appearance is, however, represented in Level VI at Çatal Hüyük, dated to 5800–5700 BC.[7] This material, at present in the process of examination, is better preserved, and more satisfactory dimensional statistics will in due course be derived from it.

Although as of now Anatolia seems to have been an early centre of development and dissemination of Einkorn, there is little doubt that the species emerged independently in several places within or near the distributional area of its progenitor (Thrace?, the Crimea?, Anatolia, the Caucasus, Palestine and the Zagros range). The cultivar is found in most early and many later prehistoric finds all over the Near East, except Egypt. It appears to have thrived both with and without irrigation, but that salinity was its principal antagonist. With a single exception of the Jemdet Nasr Period (which may be an import) it has not been demonstrated for Mesopotamia of the era of the great city states, presumably because the alluvial plain at that time had salted up too far to suit Einkorn.[8]

The species was transferred to Europe with the first agriculture and is represented in practically all Neolithic grain finds from the Mediterranean to Scandinavia. At present its cultivation is insignificant and mostly confined to the Balkans.





3. Dimension graphs of spikelet forks for Einkorn and Emmer.

4. Emmer (*Triticum dicoccum*)

Triticum dicoccoides, the Wild Emmer, is regarded as a chromosome-doubled hybrid of Wild Einkorn and a species of Goat-face grass, *Aegilops speltoides*.[9] Its natural distribution follows the southern boundary of the former in northern Palestine, the southern Taurus and Caucasus and the Zagros range. This species is believed to be the progenitor of Emmer, *T. dicoccum*; both belong to the tetraploid group ($2n = 28$) and cross easily.

All grain from the burnt house, Q.5, is too badly puffed to permit an estimate of the relative proportion of Emmer, Einkorn and Bread wheat, but the spikelet forks and glumes show that Emmer made up the bulk of the mixture. A number of intact spikelets with the grains still *in situ* convey a very good notion as to the character of the spike (pl. III:b).

The general impression of Emmer is that of an extraordinarily coarse and dense

spike, copiously hirsute especially about the glume bases. The internodes vary considerably, but on the whole they may be described as extremely short and wide. Their average length is about 2·3 mm, the width under the glume base some 2·0 mm; the following examples show a variation of B:L index from 57 to 158:

width (mm)	1·32	1·40	2·00	2·20	2·36	2·40	2·40	2·40	2·40	2·56	2·88	3·00
length (mm)	1·60	2·24	2·40	2·52	1·36	1·40	1·92	2·00	2·40	2·00	2·12	1·72

Also, the measurement across the fork at the height of the disintegration scar (Dim. A) and the width of the glume base (Dim. B) give unusually high figures (see fig. 3):

Dim. A 2·59 (2·00–3·28) mm
Dim. B 1·32 (0·96–1·72) mm
B:A index 50·5 (41–59)%

By and large, the proportion of grain weight to spike parts seems to have moved in favour of grain weight as the centuries passed and Emmer migrated further away from its centres of emergence, prompted by human selection. Spikelet forks from the thirteenth century BC find of Beycesultan in western Anatolia,[10] show a maximum Dim. A of 2·28 mm and a variation of Dim. B from 0·88 to 1·06 mm. Even slenderer are the spikelets of a Danish Iron Age Emmer find (AD first century).[11] Here the variation in Dim. A is from 1·41 to 2·17 mm, in Dim. B from 0·57 to 1·03 mm – while the grains are not all that smaller than ours (4·76 to 6·95 mm long). Modern Emmer, whether grown in Abyssinia, in the Volga Bulgar district, or in Switzerland, has much more delicate spikes albeit large grains, than the sixth millennium Hacılar product.

For an idea about the morphology of the Hacılar grains we have to turn to the Well deposit of the final phase, about 5000 BC. These grains are not ideally preserved, but they are the best available. Even so, only 25 grains could be picked out that meet the requirements for measuring: a reasonably well preserved embryo, a ventral furrow that has not widened from internal pressure and a degree of puffing as low as possible (pl. III:a).

With an average length of 6·37 and a maximum of 7·33 mm, the grains belong to the largest on record. Their T:B index of 84, and the B:L index of 46, correspond well to most other finds and are, in fact, practically identical with the above mentioned Emmer grains from Iron Age Denmark (86 and 45 respectively).

In spite of the coarseness of the spike parts, there is no similarity to the Wild Emmer; the glumes are considerably shorter and, because of the squat internode, the density of the spike is much greater than in *T. dicoccoides*. Although generally slender, all features of the grains are rounded, not sharp and creased as in the wild relative, and their actual volume is decisively superior. This soft, rounded character of the domesticated Emmer grain is a feature common to all early finds, while the grain size may vary considerably from one place to another. As yet no carbonised Emmer grains as large as those from Hacılar and Çatal Hüyük are on record for these early times.

The gene mutations that afforded the opportunity for selection of the domesticated form, would have happened spontaneously at all times and in many areas. Where and how long ago the situation was first exploited by man we do not know. But it is a

pretty safe guess that it was long before the time of which we have the first evidence for Emmer, and it is also a fact that the transitional process was duplicated in different areas at greatly varying times. The first good evidence at present available is the Emmer of the Bus Mordeh Phase at Tepe Ali Kosh in Khuzistan; its estimated date is *c.* 7000 BC, but it may well be earlier. Here the Emmer grains are small, but already uniformly of the domesticated type; the spikelet parts are too fragmented for discussion of details of the spike. It is necessary to presuppose a long period of selective cultivation before Tepe Ali Kosh was settled on the arid plain beyond the natural range of *T. dicoccoides*. On the other hand, the evidence from Beidha in southern Jordan,[12] of the first centuries of the seventh millennium, seems to disclose an actual transitional situation. A multitude of imprints in burnt clay plaster show a striking range of variability in spikelets and grains, both morphologically and dimensionally. The length of the (uncarbonised) grains varies from 5 to 10 mm, but their shape is more rounded than in the wild species. Some of the spikelets are extremely coarse and approach the Wild Emmer in shape and size; others are small and delicately built. Although *T. dicoccoides* does not now exist in that part of Jordan, it is difficult to judge the possibility of its occurrence there nine millennia ago. So, whether or not the Beidha Emmer was introduced cannot be ascertained just now.

At aceramic Hacılar also, the evidence, though poor, indicates a fully-fledged domesticate shortly after 7000 BC. According to the present-day range of the progenitor the Hacılar Emmer would have to be considered as introduced from further east, but again we are up against the question: how far does the modern distribution of Wild Emmer cover its natural range nine millennia ago? It seems most probable, however, that an introduction took place, not least because the find also contains lentil which is believed to belong to the Zagros-Caucasus region.

Emmer is ubiquitous in grain finds in the Near East from 7000 BC up to the end of the first millennium, and occurs in some areas still later. In Europe it appears with the first traces of agriculture and lasts well into the Christian era. At various times and in different places it shared the field with other wheat species, but by and large it may be described as the principal wheat of prehistoric and early historic times.

5. Bread Wheat (*Triticum aestivum*)

Most significant of all components of the Hacılar plant material is an ancestral form, or series of transitional forms of a free-threshing hexaploid wheat that will be discussed under the name of Bread wheat, *T. aestivum*. While by now not the earliest occurrence of this species, it was recognised in the Hacılar material for the first time and its specific characters defined.

From the beginning of the investigation, the examiner was conscious of the fact that certain Emmer samples contained grains the proportions of which fell beyond the experienced limits for that species. However, since this might possibly be a consequence of the fierce heat which characterises the whole find, I did not feel confident about their true identity until eventually the spikelet remains were subjected to a close scrutiny. Here again, a deviation from the morphology of Emmer was established. Together the two lines of enquiry revealed a wheat with blunt, soft grains of an extraordinary

dimensional variation, and an at least partially articulate spike axis with a brittle glume junction.

The most conspicuous dimensional feature in the grain is an average B:L index of 62·5 as against 46 in the Hacılar Emmer. Another specific trait is the occurrence of a few grains much smaller than the average; thus among 50 grains there are eight from 2·5 to 3·5 mm long, while the average length is 4·9 and the maximum 6·3 mm. Such an irregular variation is not seen in a healthy Emmer crop. The explanation is undoubtedly that the small grains are the product of tertiary florets that in Emmer are sterile, whereas in the newly established hybrid they occasionally became fertile and grain-bearing, although lacking in vigour.

However, the distribution of grain lengths does suggest that as in Emmer, the spikelets were normally twin-grained in this transitional Bread wheat. The same is true of the late bronze age Bread wheat from Beycesultan, the glume space of which is very narrow. In neolithic Switzerland (Weier, of the Michelsberg culture) large spike portions of Bread wheat are preserved in which very seldom more than two grains are developed in the spikelet.[13]

On comparing the photographs, pl. III: a and d, other characteristics emphasize the difference between the two wheat species. Carbonised Emmer grains usually have a strained and glossy surface with a few soft longitudinal pressure grooves caused by the stiff, unyielding glumes; and the grains do not lump together on carbonisation.

In Bread wheat, the grains are apt to consolidate in masses; no pressure grooves are left by the glumes, but the grains are very often dented and misshapen as if they had been semi-liquid while they carbonised. The grain shell is matt and minutely crinkled, and the flat ventral side may show a fine wrinkling at a slightly oblique angle to the deep, narrow ventral furrow. It should be noted that Emmer grains may attain more or less the same proportions as those of Bread wheat if they are exposed to sudden and fierce heat (as in house Q.5 for instance); but in that case the ventral furrow will be gaping thus providing the deceptive proportions. This is the principal snag in distinguishing the grains of the several wheat species; if the ventral furrow is not tight and narrow, segregation within a mixture is very risky.

There is, of course, no absolute proof that this Bread wheat is hexaploid; the only strictly valid evidence would be the demonstration of the 42 chromosomes that are characteristic of *T. aestivum* in the broad sense of the name and this cannot be done. The justification for our classification is the proportions of the grains, which correspond closely to modern forms of Bread wheat and differ from all other (tetrapolid) naked species, as well as from the hexaploid (hulled) Spelt (*T. spelta*). That the Hacılar Bread wheat was free-threshing may, as we shall now proceed to demonstrate, be taken for granted.

How many grains of Bread wheat went into the grain deposits is impossible to say; as mentioned before, the largest volume of wheat came from the burnt house, Q.5, and here segregation is hopeless because of deformation of the grains. The best deposit of Bread wheat came from Trench level III, evidently the ruins of a kitchen, and comprises 70 ccm; but it contained not one spikelet part of any kind.

Internodes should not, in fact, occur together with the threshed grain of the naked wheats – and, indeed they rarely do. However, among the tens of thousands of spikelet fragments from the burnt house, and sporadically in other lots, altogether 46 internodes of the species were found.

For easy comparison, internodes and spikelet forks of Bread wheat, Einkorn and Emmer are illustrated together in pl. III:c. Whereas the internodes of Emmer and Bread wheat differ but insignificantly, the junction between internode and glume base is quite different in the two. In Emmer the junction is smooth, and the glume base tapers gradually upwards, being solid and very sturdy below. This is the reason why the glumes do not break off and release the grains on ordinary threshing. In Bread wheat, on the other hand, a sharp crease is conspicuous at or just below the junction and, apart from occasional stumps of the veins, the glumes are consistently missing in these specimens. Another collection shows conjoint internodes demonstrating that the axis was at least partially tough.[14]

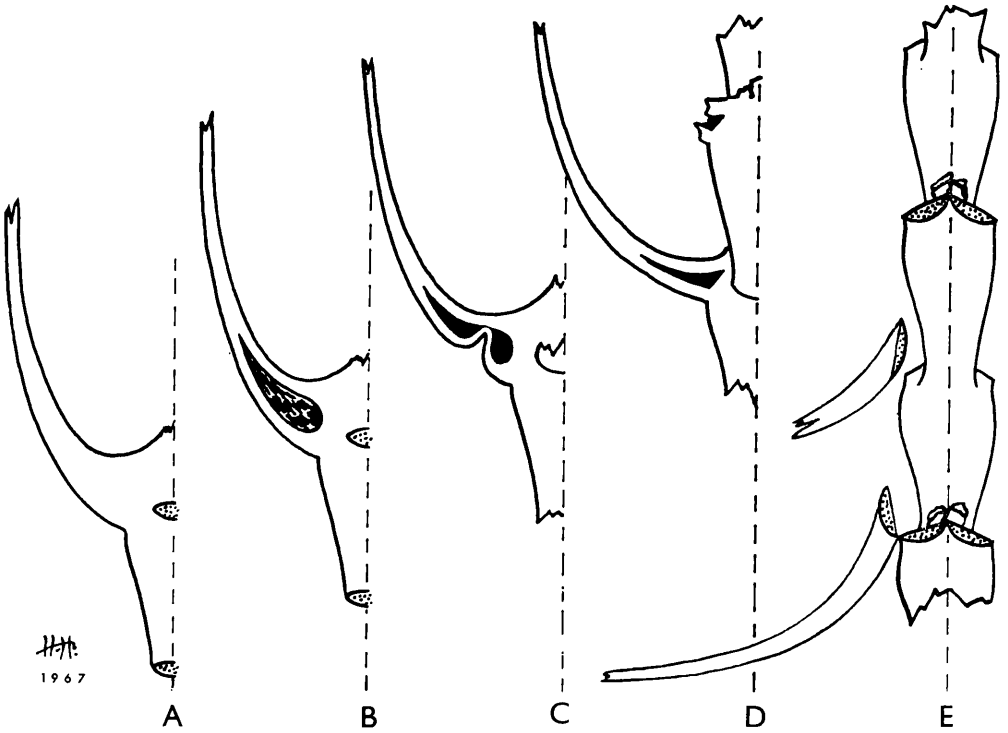
It is well known that Einkorn and Emmer have to be parched artificially before threshing because the sturdy spikelet does not break up until the glume junction has been rendered brittle by desiccation. On the other hand, even domesticated Einkorn and Emmer have retained some degree of fragility of the spike axis inherited from their wild progenitors. Thus there was, and still is, in the spike of these species, a combination of a tough glume-internode junction with a semi-brittle axis.

The main mechanical consequence of the transition to the hybrid condition, affecting threshing technique, was that this combination was inverted: the spike axis became tough, the glume junction brittle.

Ordinary threshing of Emmer results in the breaking-up of the spike in units consisting of the internode with the attached spikelet still containing the grains (cf. fig. 2:A, p. 193 and pl. III:b). Parching and further pounding are necessary to relieve the grains of their husks. Now, with a tough axis and a brittle glume junction, the grains could be beaten or trodden off the spike together with the glumes and paleas while the axis remained one piece attached to the straw (cf. fig. 4:E).

Figure 4 is an attempt to express the transition as it appears to the examiner. In A, the glume-internode junction is shown solid as it is in Emmer. The black area in B represents degeneration of the interior tissue, the development either of a cavity or of spongy tissue. In C, the outer tissue has collapsed in a sharp crease into the yielding medial zone. That condition is established in the carbonised material and illustrated in pl. III:c, left row. With this transformation the principal protective function of the glume has disappeared; after the transition shown in D, the ultimate condition, represented in E, and already demonstrable in the Hacılar material, leaves the glumes and grains easily detachable by pounding. The glume-internode junction is now reduced to a thin fragile crescent-shaped scar. E is a fairly naturalistic illustration as opposed to the schematised representations of A to D.

Since this discovery was made, the same phenomenon has been established in other finds in the Near East, namely, Çatal Hüyük, and Tepe Sabz[15] in south-western Iran, both of the first to third quarter of the sixth millennium. Additionally, grains of



4. Transition of the glume junction in Emmer from tough to brittle.

the hybrid species have been found at Tell as-Sawwan[16] near Samarra in Iraq, of the same general period.

Apart from the internodes illustrated in pl. 111, which were selected in order to emphasize the principal feature of the metamorphosis, the crease in the glume junction, there is a great divergency in the Bread wheat internodes found at Hacılar as also in those from Çatal Hüyük and Tepe Sabz. They make up a series of transitional forms of greatly varying sturdiness, lengths (from 2 to over 4 mm) and degree of toughness; none of them can be compared in detail with any wheat now in existence. They represent an evolutionary epoch long since concluded, and their variability constitutes a point of departure for almost any modern variety except, maybe, Club wheat (*T. compactum*) the internode of which is shorter than anything encountered in these ancient finds.

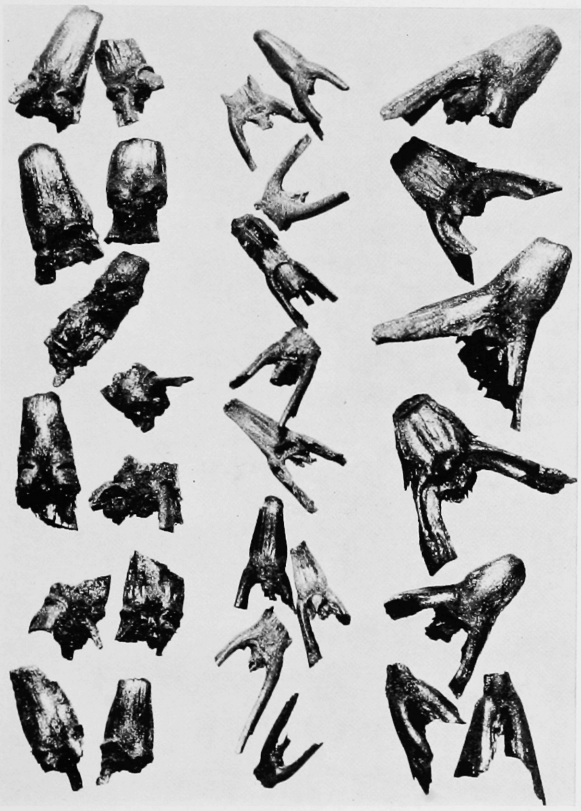
Gene mutation and hybridization are natural, if rare, events among plants whether domesticated or wild. Such biological process do, however, lead to the emergence and stabilisation of new species and varieties only if their physiological compositions harmonise with the environment into which they happen to be born. Even if fertile, most products of this category will quietly disappear in the wild.

If mutation or hybridization happens in plant communities controlled and watched by man, the new forms may eventually be picked out and furnished with the particular material conditions their specific constitution requires for survival and propagation. In this way, many naturally unadaptable plants are perpetuated as separate species or varieties – but only under conditions of persistent care and protection. Of the plants with which we are concerned, this applies to the barley varieties with a tough axis, and to the free-threshing barley and wheat. Neither could exist without the care of man.

No free-threshing wheat has ever been encountered in the wild. Just because it is

a

b



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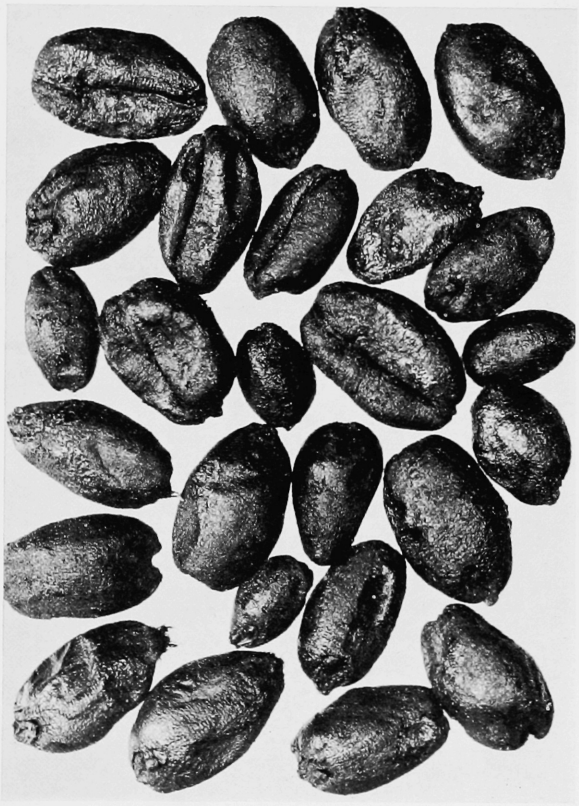


d

PLATE III

(*a*) Grains of Emmer (Well)

(*b*) Spikelets of Emmer (Q.VI.5)

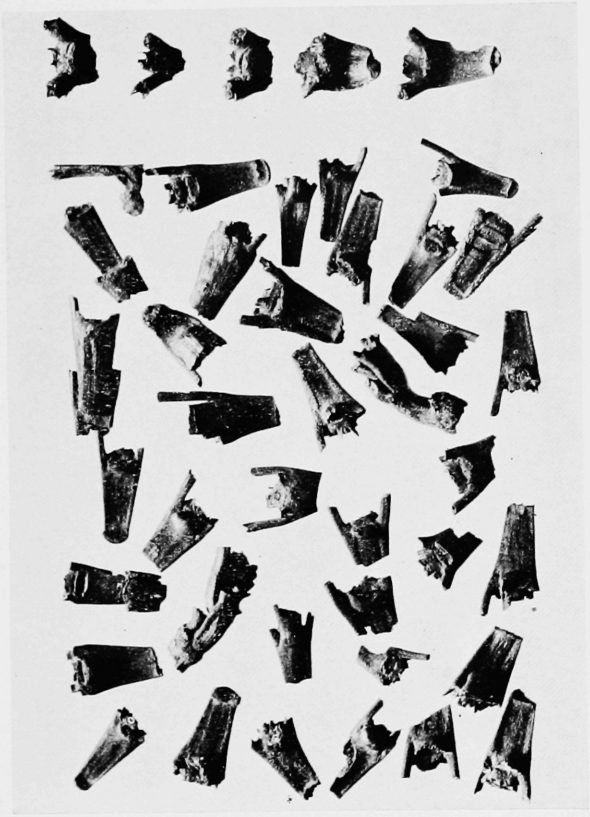
(*c*) *Left:* internodes of Bread wheat (Q.VI.5)
Centre: internodes of Einkorn (Well)
Right: internodes of Emmer (Q.VI.5)

(*d*) Grains of Bread wheat (Trench)

3.6 diam. *Photo: H. Helbaek*

a

b



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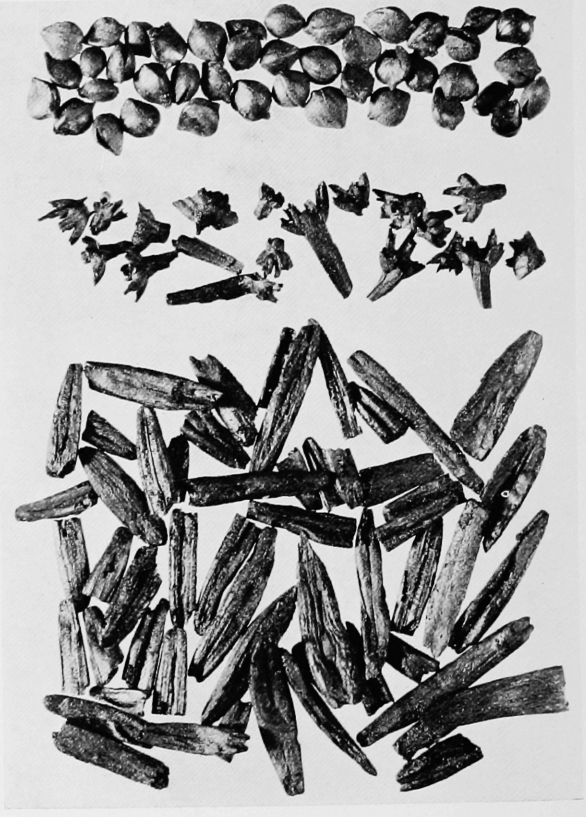


d

PLATE IV

(*a*) Grains of hulled barley (Well)

(*b*) Grains of naked barley (Q.VI.1)

(*c*) *Top:* five internodes of six-row naked barley (Well); all others internodes of two-row hulled barley (Well)

(*d*) *Top:* achenes of Sea Club-rush (Well)
Centre: internodes of Medusa-head grass (Well)
Bottom: grains of Medusa-head grass (Well)

3.6 diam. *Photo: H. Helbaek*

free-threshing – or rather because its spike does not break up in dispersal units – it is deprived of all opportunity for continued survival in the wild state. If left alone all grains from such a spike will fall within a very limited area. Probably at some time after maturity the whole spike will break off, and competition among the crowded young plants will cripple their chance of subsistence. If, however, conditions are controlled by man by way of soil improvement, adequate water supply, relief from weed competition and suitable spacing of the plants, a free-threshing wheat is ready to compete in vigour and output with any other cultivated cereal. But its retreat is cut off: it is for ever tied to man; it is now domesticated.

Bread wheat, *Triticum aestivum*, is a hybrid between Emmer and certain related wild grasses of the genus *Aegilops*, Goat-face grass. As actual crossing partners the two species, *A. squarrosa* and *A. speltoides*, are suggested.[17] Cross pollination, subsequent recombination of genes and chromosome-doubling, as well as new crossings between mutative varieties gave rise to a hexaploid species of exceptional genetical and structural complexity. The hybridization probably happened between the Wild Emmer and the Goat-face grasses within their common range of distribution long before agriculture was first attempted, but the hybrid fell victim to environmental stresses and lack of dispersal power. Therefore it disappeared.

Why Bread wheat does not appear in early dry-farming agriculture is an unanswered question. We do not have many finds at our disposal, but still it is conspicuous that no plant part coming from sites earlier than the first half of the sixth millennium BC can be suspected of belonging to this species. Even more remarkable is the fact that Bread wheat breaks out into the open in all finds of the early to mid-sixth millennium hitherto subjected to proper analysis. Also, that its occurrence coincides with the first documented appearance of six-row hulled barley.

In attempting to explain this coincidence, we shall have to turn to the history of a domesticated plant that is most conspicuous by its complete absence from prehistoric Anatolian finds: flax or linseed, *Linum usitatissimum*. The progenitor of this plant, Pale flax (*L. bienne*), is a native to certain mountainous parts of the Near East and elsewhere. Its first domestication must have taken place within its natural ecological environment, in the mountains, although at present we have no very early finds demonstrating it. The earliest evidence comes from Halafian Arpachiyah and Brak, about 5000 BC, in northwestern Iraq. Here an improvement in seed length is demonstrated, from 2·3–2·7 mm in the wild species, to just about 4 mm in the domesticated flax. This maximum was not exceeded anywhere when the plant depended on precipitation, even in Wiltshire in southern England some 2000 years later.[24]

Flax thrives in humid climates in the subtropical and temperate zones, but it cannot be grown unaided in arid climates, such as the great alluvia in the Near East. In Mesopotamia, Egypt and other hydrologically similar areas it must be grown as a winter crop, and carefully controlled irrigation is necessary for the output of both fibre and seed oil. However, when prehistoric linseed are found in environment of low precipitation and high spring temperatures, in areas where agriculture is based on irrigation, they consistently prove to be considerably larger than the upland product.

5. Development of linseed in different hydrological conditions

RAINFALL			IRRIGATION	
length of seed, mm		AGE BC	*length of seed, mm*	
		5500–5000	4·67–4·83	Tepe Sabz
Arpachiyah	3·84	5000–4500		
Brak	4·03			
		4500–4000	4·39	Ur
			4·76	Hama
		4000–3500		
Brak	4·03	3500–3000		
Switzerland		3000–2500	4·94	Hama
England		2500–2000		
Holland				
	3·11–4·03	2000–1500	4·76	Khafajah
Scotland				
Denmark		1500–1000		
Eire		1000–500		

Figure 5 is a modified extract from the most recent monograph on the origin and history of domesticated flax[18] comprising only such commensurable items as imprints and fossil calcareous replicas of seeds, and wet, unshrunk prehistoric specimens. To this may be added, parenthetically that carbonised linseed, found at Tell as-Sawwan, show a maximum length of 4 mm, proving them to have been at least 4·5 mm in the fresh state. The constellation shows unambiguously that irrigation was the basic factor in areas of high spring temperatures, qualifying the development and selection of larger-seeded strains of the species.

The striking relevance of this fact to the present discussion will be appreciated when it is noted that the first appearances of the larger linseed in Iraq and Iran coincide with the first appearances of Bread wheat and hulled six-row barley. There is a common denominator for the emergence of this particular constellation of advanced domesticated plants. Judging by the example of flax, it is warrantable to conclude that the spark which set off the sudden expansion in agricultural scope, was the initiation of controlled irrigation. The period within which the first steps were taken is comparatively brief. In Iraq-Iran it is confined to the second to third quarters of the sixth millennium, raising the combination wheat-barley-flax. In western Anatolia the combination consists of only wheat and barley, but the period as evidenced by the

finds is exactly the same, Çatal Hüyük from about 5850 BC and Hacılar from 5450 BC. Even in agriculture with natural water resources close at hand – as in all the sites here discussed – it makes all the difference whether the hydrological effect of the river or lake is left to nature, or whether, by drainage, prevention of run-off by dams, or canalisation, soil humidity is extended beyond the reach of the zone of high groundwater level and, especially, prolonged into the hot late spring when the river would naturally have shrunk and the water table receded. Also, the effects of a rainless winter could be offset at will.

It was this intrusion in nature, coupled with man's selecting activity, that supplied the impetus for the the profitable development in plant husbandry.

That no flax occurs at Çatal Hüyük and Hacılar is a peculiar case of inconsistency, common to finds of all prehistoric periods in Anatolia. The plant was grown in most early cultures east of Anatolia, and it appears in very early context in Europe. Plant finds from Cilicia, which would be an ideal area for the improvement of early flax, have not been properly investigated, so from that province we have no information. But even a rich Anatolian plant find as late as Troy II (*c.* 2300 BC) yielded no trace of the species, not to mention both late bronze age and late Byzantine Beycesultan, not far from Hacılar. A separate reduplication of its domestication in Europe is highly improbable, but how flax arrived in Europe from the Near East, without so far having shown up in Anatolia, is most puzzling. A road across the Caucasus and southern Russia seems at present most probable; if not, migration from Syria or Cilicia by sea.

An obvious contradiction was emphasised above: that although the hybrid Bread wheat must have emerged in mountains where its wild parents are at home, and probably spontaneously before plant husbandry was initiated, we find no traces of it in such an environment. No free-threshing wheat is known in the wild, and the hybrid never appears in the early mountainous dry-farming finds so far recovered. This situation being inexplicable, a hypothesis is here set forth, drawing on what is known and with reason presumed.

Should a complex of cultivated plants with their attendant weed grasses be moved from mountains to an arid lowland locality with embryonic irrigation, some species might thrive under the new hydrological regime, others not.

Let us suppose, for the sake of argument, that such a complex comprised both Emmer and the two species suggested as crossing partners, *Aegilops squarrosa* and *A. speltoides*. In the denser growth, encouraged by irrigation, the incidence of cross-pollination would increase. But it is not impossible that the *Aegilops* weed species succumbed fairly soon to their artificial environment, while both Emmer and the hybrid prospered. The latter statement is a proven fact. Thus the situation would come about of a hybrid with only one parent present in the environment of which information has reached us through archaeological material. The biological reason for the hybrid's survival might have been the new combination of high temperature and late water supply. In the mountains, it might have suffered from a special sensitivity to the period of desiccation between the end of spring rain and its own genetically conditioned time of maturity – and thus perished. This time may have been later than it is for Emmer.

The latter is adjusted to a dry maturing period, a property still characteristic of its direct offshoot, the tetraploid naked Hard wheat, *Triticum durum.*

An observant farmer would soon discover the extraordinary spike and pick it out for special treatment; he would also appreciate its labour-saving threshing properties as well as its novel cooking qualities. There is in the ancient Bread wheat strong indication of chemical qualities different from those of Emmer; grains of the two species, as noted, behave differently on carbonisation. In domestication, chemical mutation is as important as any exterior change in structural and mechanical characteristics.

The fate of Bread wheat, as judged by evidence at present on hand, was rather checkered. It appears first in irrigation agriculture of the sixth millennium from western Iran to western Anatolia, presumably emerging independently in many places with embryonic irrigation and contacts with mountain farming. On the other hand, when sophisticated canal irrigation really got going on a large scale in the great river basins of Egypt and Mesopotamia, the species does not show up. This is probably because the early races of Bread wheat were susceptible to the salinity which eventually developed, especially during the third and second millennia BC, putting many mighty city states out of commission in consequence of failing crops. It has been shown that in certain parts of Mesopotamia even Emmer suffered and became almost extinct during the latter part of the third millennium.[19]

At the same time we see Bread wheat emerging as a mountain crop in the Habur area in northwestern Iraq and in other localities of the fourth to third millennium and later, presumably because its early susceptibilities were eliminated through mutation and inter-varietal hybridization. Genetically conditioned resistance to diseases would also, at this stage, have taken a strong hand.

In Europe Bread wheat belongs to the plant inventory of the earliest known agricultural societies from Spain and Switzerland to Britain and Denmark, with Anatolia as its ultimate point of departure. An eastern line of migration and evolution from Iran can also be followed. In the third millennium Indus valley cultures, a naked wheat has been established, identified by John Percival as Shot wheat, *Triticum sphaerococcum*, a variety of *T. aestivum* widely grown in India today.

Because of its rich genetical inheritance, Bread wheat has been able to develop innumerable strains and races, in part spontaneously, in part through modern scientific breeding technique, agreeing with the most diverse ecological conditions all over the world.

BARLEYS

General discussion of nos. 6, 7, 8

The taxonomy of barley is comparatively simple, but even so, several diverging systems of classification are being used by different workers.[20] For the benefit of the botanically untrained reader, therefore, I shall adopt the simple expedient of using the term 'variety' when referring to the various domesticated barleys. The taxonomical distinction possible in carbonised and most often fragmented material is, anyway, very limited.

Thus, only two barleys relevant to this discussion will be considered as 'species':

the wild, two-row, hulled *Hordeum spontaneum* Koch, and all its domesticated derivatives united under the now generally abandoned name of *Hordeum sativum* Jess. Indeed, by most modern taxonomists, the two are regarded as one species, belonging to the same cytological group with 14 chromosomes and crossing easily. The Latin names of the varieties, also, are rendered in their most elementary form, but should, nevertheless, be unambiguous even to cereal specialists.

Three varieties of barley constitute the largest single group of the Hacılar plant remains, altogether amounting to 5480 ccm, or 45 per cent of the whole find. Naked six-row barley accounts for 94·5 per cent of all grains of the species; determinable hulled grains of the two- and six-row varieties make up 1·2 per cent (67 ccm), while two portions of 140 and 99 ccm, or 4·3 per cent, consisting of both naked and hulled grains, are too poorly preserved for a satisfactory analysis to be carried out.

Beside the grains, 255 determinable internodes of the species were picked out; of these 24 belong to the naked six-row variety, *Hordeum vulgare* var. *nudum*; 229 to the hulled two-row *H. distichon*, and two to the hulled six-row barley, *H. vulgare*. Beyond this, the material does not permit detailed classification. Suspected triplets of *Hordeum spontaneum* from the Well deposit are left out of consideration because of doubt as to their actual identity.

Throughout the duration of neolithic and chalcolithic Hacılar, the naked barley was the most frequent cultivar. The grains are not large, but rather plump, with a B:L index of 46. The curved and twisted condition in the lateral grains is comparatively faintly expressed, much less clearly so than in well preserved specimens of the hulled form. The grain shell is finely rippled transversely, and is lacking the longitudinal striation caused by the palea veins, which characterises the hulled grain even when the palea itself has been destroyed in the fire. This difference comes out most clearly on the ventral side, along the ventral furrow. In well preserved naked grains a wide, soft groove often runs along the dorsal side from the embryo to a slight notch in the apex. In puffed grains of this variety, the wrinkling, the notch and the groove disappear, but still the unstriated ventral side, frequently burst along the ventral furrow, affords good distinguishing criteria (pl. IV:b).

In view of the considerable number of grains (approximately 285,000), the number of internodes representing the naked variety is very moderate, so much so indeed as to suggest a larger degree of toughness in the spike axis than in the hulled varieties. Also, very few of them have broken at the node, another feature indicating toughness. The lateral grains had a distinct, sturdy tubular pedicel, sometimes displaying traces of coarse bristles, and the spreading position of the pedicels show that the spike was comparatively dense (pl. IV:c, top row).

The overwhelming preference for the naked six-row variety during the level VI occupation leaves very little scope for the study of the Hacılar hulled barley. Together the houses P.3, Q.1 and Q.2, yielded 3355 ccm of the species, and more than 98 per cent is the naked variety. Apart from a few grains and one internode of two-row barley in house Q.1, only house Q.2 affords an opportunity, however limited, to account for the hulled varieties of that period. This sample, 140 ccm, is almost as poorly preserved as

it possibly could be. Not only badly burnt and much fragmented, most of the grains had sprouted and thus lost much of their morphological characteristics before carbonising. There is good reason to consider it as the last remains of a larger store left to decay in the unswept grain bin. 140 ccm is, after all, less than a teacup full. Over one-third is small useless particles, and among the remainder very few complete grains were found. Most of the sample consists of damaged grains and fragments barely large enough to be recognised as barley. The exact ratio of the hulled varieties cannot be established, but may tentatively be put at about two-thirds of the recognisable grain, say some 50–60 ccm.

Three internodes testify to the two-row variety, and the majority of the determinable grains are straight. 21 curved or twisted specimens were picked out, but on critical scrutiny 14 fell out, either because their asymmetry might be part of the damage, or because it could not be ascertained whether or not they were originally hulled. Of the remaining seven grains, only two can safely be determined as naturally twisted, lateral grains of a six-row spike.

Thus, the conclusion must be that six-row hulled barley occurred only as a straggler, or possibly as a local mutant, and that even the two-row variety enjoyed very little prestige in the period represented by level VI. It may be noted that the above mentioned three internodes are parts of a tough spike.

In the last two centuries of the sixth millennium, represented by the level III trench, house Q.1 of level II, and the well of levels II–I, the picture becomes somewhat clearer. 99 ccm of mixed naked and hulled grains was recovered from the trench, but the state of preservation does not permit a quantitive analysis. Twenty hulled, twisted grains do, however, indicate that the six-row hulled variety did occur, but since the sample contains an indeterminable proportion of naked grains, the ratio cannot be established.

Only the Well deposit was sufficiently undamaged for a complete analysis of the barley to be undertaken. Six internodes and about 1275 grains belong to the naked six-row variety; approximately 3375 hulled grains were picked out, only 22 of which are asymmetrical. This means that at the end of the occupation of the village, the six-row hulled barley still played a very inconspicuous role. No more than one spike in a hundred was six-row (22 lateral grains correspond to eleven spike sections with altogether 33 grains; thus the ratio of six-row to two-row spikes is calculated to 1·02 per cent). To this conclusion may be added the corroborative evidence of the internodes: 217 two-row and two six-row internodes of hulled barley were found in that sample.

The hulled grains are appreciably larger than the naked ones, indeed this crop is superior to almost any ancient find on record; it is seriously surpassed only by the late bronze age find at Beycesultan. The B:L index 43 proves them to be slightly slenderer than the naked grains (B:L index 46).

Well preserved internodes of the two-row variety invariably show long pedicels to the sterile lateral floret (pl. IV:c). It is a character preserved from the progenitor, *Hordeum spontaneum*. This particular feature has by now disappeared in domesticated

barley almost everywhere. In 1960, however, I came across a field in the Iranian Zagros mountains (near Shahabad in Kurdistan) grown with a fully domesticated two-row barley in which the lateral florets were long-pedicellate. This characteristic is documented in finds much later than Hacılar; plenty of evidence is available as late as the Hellenistic finds from Nimrud, of the third to second century BC.[21] To my knowledge there is, in fact, no example of ancient two-row barley internodes with reduced lateral pedicels.

Naked barley has been an enigma to agricultural historians up to the find of Hacılar and the analysis of the plants. Although it is evident that all domesticated barleys must have come from western Asia, the naked variety had never before been proven in early finds from that part of the world.

But for many years it had been well known in prehistoric finds from almost everywhere in Europe, and from the earliest known agricultural communities. The chronological and geographical discrepancy was so inexplicable that only a few years ago, the present writer broached the desperate suggestion that a mutation in the six-row hulled variety might have happened in Europe, cancelling the chemical fusion of the grain shell with the paleas.[22]

First, then, was the very considerable mid-sixth millennium cultivation of naked six-row barley established for Hacılar, antedating the earliest European occurrence of the cereal by almost a millennium; soon afterwards the Çatal Hüyük excavations demonstrated that, some four hundred years earlier, it was not only grown as the most important cereal, but was almost the only barley at all. So Europe fell smoothly into an intelligible pattern of migration and distribution, both in time and space. Anatolia emerges as the immediate source of naked barley, spread by way of the Balkans and the Danube on the one hand, by way of Peloponnese and Crete along the Mediterranean to the Iberian peninsula[23] on the other, and probably from there branching out to north Africa and north along the Atlantic coast of Europe. In remote fringes like Britain and Denmark it was the predominant of the two six-row varieties in all the earliest known agrarian societies.[24] Two-row barley has not, as yet, been established anywhere for prehistoric Europe. Its introduction from western Asia or north Africa was probably effected during the lively cultural exchange between Arabs and Europeans during the eighth and ninth centuries AD, when Spain and Sicily were intimate points of contact.

However, when the Aceramic ash deposit was analysed, it turned out that naked barley was grown at Hacılar even in the beginning of the seventh millennium BC. The material being very badly preserved, no estimate of its relative importance at that time can be given. Subsequent investigation of grain imprints from Aceramic Beidha in southern Jordan revealed its presence there, in minute proportions, at approximately the same time.[25] Finally, excavation of the site of Ali Kosh in southwestern Iran produced material to show that naked barley was established as a distinct variety at least by 7000 BC, and probably earlier. Here its relative frequency may be estimated at about one-tenth of the barley grains.

No natural two-row naked variety is known. One naked grain in aceramic Hacılar

shows the faint twist characteristic of the lateral grains in a six-row spike, and one internode of the variety was discovered. While no definite evidence on this point is available in the other two Aceramic finds mentioned, it is warrantable to conclude that all ancient naked barley was the six-row form which we find in full flourish at Çatal Hüyük and neolithic Hacılar some 1000 to 1500 years later. The only other barley found in the three sites, and indeed in great majority, is a two-row, hulled brittle-axis form, indistinguishable from the wild species, *H. spontaneum*. Since it shows none of the features characterising domesticated barleys, it will be considered as the wild species in a state of cultivation, but not yet domesticated in the sense that its physiological status would prevent its reversal to an existence independent of man and his ameliorative influence on ecology.

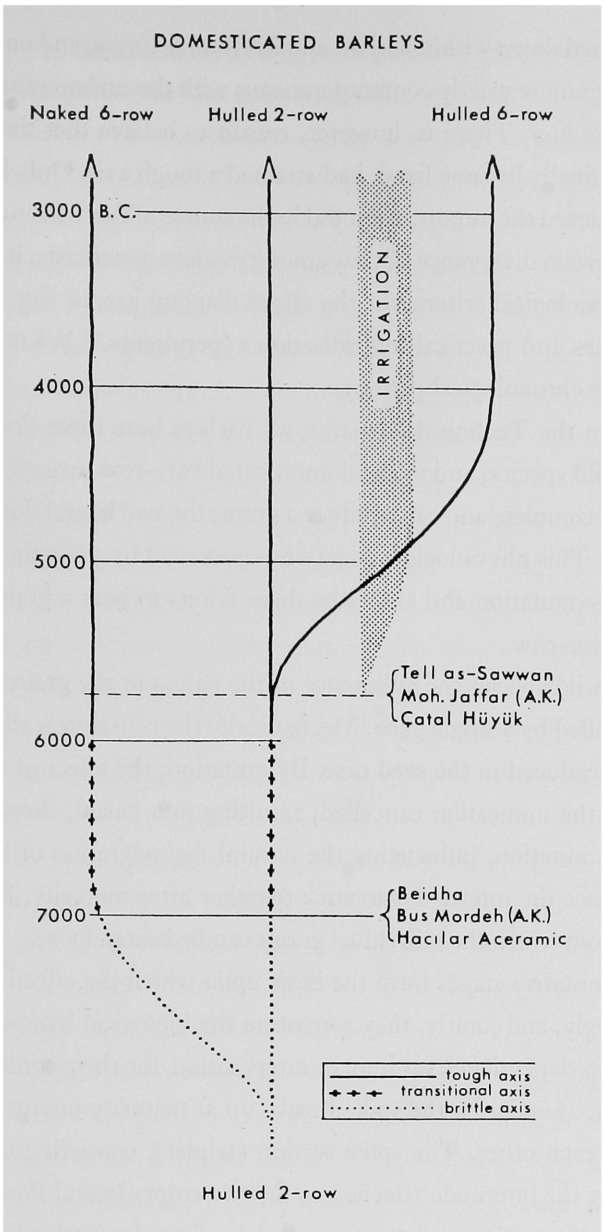
Quite contrary to all genetical expectations, six-row hulled barley appears much later in the archaeological material. The earliest definite proof of its existence comes from levels of the second and third quarters of the sixth millennium. The Çatal Hüyük material has not yet been examined in sufficient detail for this point to be illuminated, but the preliminary investigation came up with only very few grains which may be classified as this variety.

The first unquestionable evidence for hulled six-row barley was furnished by material from Tepe Ali Kosh, of a level in the Mohamad Jaffar Phase which may be estimated at about 5800 BC. Here, two underdeveloped, twisted and hulled grains were found. A deposit from a ditch in the Early Hassunan village of Tell as-Sawwan[26] near Samarra, dated to 5800–5600 BC, contained one twisted hulled grain among some 180 straight hulled grains, indicating definite superiority of the two-row hulled variety. That deposit, incidentally, comprised also 60 naked grains.

Not until the last two centuries of the sixth millennium do we get large enough quantities of hulled barley grains for a reliable statistical estimate to be made. As mentioned above, only one per cent of the hulled barley from Hacılar was six-row at the end of the millennium.

Based upon the study of very many mixed finds of barley in more or less dependently dated ancient settlements in the Near East, I have arrived at the conviction that the wild *Hordeum spontaneum* is the progenitor of all varieties of domesticated barley. It should be emphasised that the parts of western Asia from which all this material has been collected, have yielded evidence of agriculture earlier than any other part of the old world. Whatever is found in Abyssinia, Afghanistan, Hindukush or other outlying areas, cannot be drawn into the present discussion until it is proved that agriculture was performed in those places earlier than along the Zagros – Caucasus – Taurus ranges and south in Palestine. And that is not likely to happen.

This conviction is represented in fig. 6. In its actual form the diagram must, of course, be regarded with caution. There are still too many unknown factors about evolutionary stages and their chronological cross-roads for the development to be expressed in black and white, in dots and lines. But in principle it expresses what, for the time being, I consider the most reasonable genetical and chronological schema.



6. Evolution of domesticated barley from wild barley (see, however, note 70).

The dotted lines represent the condition of brittle axis; how long this continued cannot now be determined, and the duration would not have been the same everywhere. For naked barley there is evidence suggesting that the condition was on its way out already at 7000 BC, whereas we have no indication of a tough axis in hulled two-row barley until some time, probably late, in the seventh millennium.[27] Further, the transition from brittle to tough axis would have happened at different times in various places, so the expressed period from 7000 to 6000 is somewhat arbitrary.

The three early finds, put jointly at an average age of 7000 BC do, in reality, cover a period of several hundred years, in the same way as the three later finds possibly stretch from about 5800 to, or slightly after, the middle of the millennium. Mohamad Jaffar and Bus Mordeh are the latest and the earliest phases respectively of Tepe Ali Kosh (A.K.). The employment of carbon-14 dates is still too uncertain for the cultural

phases to be pinned down within narrow and irrefutable limits, and only rarely can one be sure that the grain is strictly contemporaneous with the carbon samples determined by the Geiger counter. There is, however, reason to believe that the six-row hulled variety, when it finally became fixed, had attained a tough axis. Only in that condition could it have achieved the importance it did in the course of the fifth and later millennia.

In spite of a certain divergence of view among modern geneticists, it is widely accepted that the physiological criteria for the above diagram are, in fact, proved through cytological studies and practical hybridisation experiments.[28] What we can add is a suggestion of the chronological pattern.

As set forth in the Technical Remarks, all barleys bear three florets (flowers) at each node. In wild species, and in the domesticated two-row variety, only the median floret is sexually complete and can produce a grain; the two lateral florets are male and therefore sterile. This physiological situation is governed by a certain gene which may be suppressed by mutation and allow the three florets to bear a grain each; thus the spike becomes six-row.

Similarly, in wild species the adherence of the paleas to the grain is an inheritable property, controlled by a single gene. Mechanically the cohesion is effected by a gum-like substance produced in the seed case. By mutation, the effect of the gene may be suppressed and the unification cancelled, resulting in a naked, threshable grain.

A third gene mutation, influencing the natural disintegration of the spike axis in wild barley, causes the internodes to stick together after maturity, forming a tough, articulate axis from which the individual grains can be beaten loose.

These three mutative stages form the basis upon which the effective cultivation of barley rests. Singly, and jointly, they constitute the biological handicap expressed in domestication, in dependency on human intervention for their continued existence.

In the wild *H. spontaneum* the spike breaks up at maturity because the internodes disengage from each other. The spike section (triplet), consisting of the developed median grain, by the internode attached to the two empty lateral florets, constitutes a highly effective dispersal unit that may travel far from its birth place by animal or wind transportation.

Should the lateral florets become fertile and develop a grain each, the triplets will be too heavy and, on disintegration of the axis, will drop in a heap around the plant. In the spring, competition among the many young plants will result in a situation giving very little scope for survival of any of them.

This probably happens sporadically in the wild, but with nobody to observe it and disperse the seed, nothing will come of it.

The mutation causing toughness of the axis, also, happens sporadically in populations of wild barley. Again, the development is destructive to dispersal and propagation, so without human agency it is abortive.

As seen from the viewpoint of effective natural dispersal, of progeny, naked barley is in the most hopeless case. Whether the axis is tough or brittle, the chances are that the grains will drop limply to the ground at maturity, deprived of every agency of dispersal.

Now, according to the evolution as suggested in fig. 6, the wild barley had its ecological conditions improved by man at an early date, in places presumably long before 7000 BC. Harvesting of this undomesticated crop must either have taken place before the grains had attained full maturity, and thus before they reached their maximum food value. Or harvesting, if at the time of full maturity, was very wasteful. Therefore, should a mutant appear in which the spike had attained a tough axis, it would attract the cultivator's attention. In selecting his seed corn, he would eventually learn to prefer these particular spikes; and in harvesting he would get all the tough spikes, while only a portion of the brittle ones would get into his bin. Automatically the tough spikes would contribute a progressively higher proportion of the seed corn and thus of the output, eventually, by summary harvesting technique, outmanoeuvring the undomesticated barley entirely. But, from that time on, the crop was vitally dependent upon man's persistent care. It was now domesticated.

If the field was left to itself, concentration of non-competitive plants would result in destructive invasion of the vigorous wild flora, ecologically adapted to the environment and able to deploy their progeny according to the natural balance of competition.

But we have no evidence of this theoretical situation. What we do encounter as the earliest evidence for mutation in barley is the naked six-row variety, judging by the conspicuous scarcity of internodes, already more or less tough.

On the basis of what is known at present, the actual course of biological events giving rise to this phenomenon cannot be explained. If a simple systematic sequence of mutations should be propounded, the order might be as follows: (*a*) two-row, hulled, brittle-axis⟶(*b*) two-row, hulled, tough-axis⟶(*c*) six-row, hulled, tough-axis⟶(*d*) six-row, naked, tough-axis.

The evidence preserved in the archaeological material does not, however, reflect such a sequence. The suggested two intermediate stages, (*b*) and (*c*), are not represented in the earliest barley material hitherto brought under examination, while we find a combination of the first and the last stages of the evolutionary series represented in more than one find from widely spaced areas both within and beyond the distributional range of the wild progenitor. Possibly the truth lies well concealed in between: practical circumstances, so far unaccountable, may not from the outset have favoured the two intermediate mutants. Thus they may have appeared only briefly without leaving enough traces for the palaeoethnobotanist to pinpoint. Their final progeny, however, the naked six-row variety, did survive often enough to appear in the catalogue of cultivated plants we have succeeded in establishing for the three as yet earliest known agrarian communities.

Again, why this has come about defies explanation on the basis of accepted genetical views. We just have to acknowledge the fact for the time being. Or we must take refuge in a hypothetical possibility of a mutative process so complicated that practical experience fails to produce a parallel.

However, let us leave this at present insoluble problem and examine the evidence for the two hulled varieties which, after all, were the only ones to survive into our day within the area of emergence and early improvement.

The second stage of the proposed evolutionary series is represented at Jarmo, an early neolithic site in Iraqi Kurdistan.[29] It was dated by carbon-14 at a time when this technique was still in its infancy, and its estimated age has varied over the two decades since the excavation took place. On archaeological grounds there is, perhaps, reason to place it in the last half of the seventh millennium BC. Here, together with wild barley, was cultivated a two-row domesticated variety, characterised by a tough axis. At about 6000 BC the same stage of advancement is witnessed by 218 internodes from the Mohamad Jaffar Phase at Tepe Ali Kosh. In that case the great number allows a tentative estimate of the ratio of tough-axis spikes: it seems to have been 10–15 per cent. It is probable that interbreeding with the wild *H. spontaneum* has taken place intermittently down through the ages in areas where it occurs as a field weed.

Such grain finds as are available show the consistent cultivation of hulled two-row barley in mountainous environment in the Near East, only mixed with the six-row variety in some intermontane valleys dependent upon irrigation. This applies to the stretch from western Anatolia to western Iran, covering the time up to some 200 BC. Not much information has so far been published, but a few reports are available indicating this trend, apart from unpublished finds of the sixth millennium. The three sites in Iraqi Kurdistan,[30] Tell Chragh, Tell Qurtass and Tell Bazmosian, exemplify the time from *c.* 3800 to *c.* 1500 BC, all coming up with only two-row barley. Likewise Beycesultan in western Anatolia, yielding material of the eighteenth and the thirteenth centuries, cultivated only the two-row variety. Even as late as the second century BC, the rather low-altitude irrigated agriculture at Nimrud produced this variety almost exclusively.[31] After much travelling in Iran, Iraq and Anatolia, the present writer has never seen the six-row variety grown anywhere in mountainous dry-farming.

The six-row hulled variety, on the other hand, appears with the first traces of irrigation and became the typical, not to say the only barley of the later, highly developed irrigation cultures in the alluvial basins from Mesopotamia to Egypt, and also in the Indus cultures. Only with the Roman, and later the Islamic conquest, entailing huge movements of cultivated plants, does this pattern seem to have been disrupted in the Near East.

Six-row hulled barley has not as yet been established in any early find (before 6000 BC) from the natural habitat region of the wild progenitor. Its first appearance on the scene is, as noted, the three sites of Tell as-Sawwan, Çatal Hüyük and the Mohamad Jaffar Phase of Tepe Ali Kosh in Khuzistan.

In the last mentioned locality, the variety showed up only in a sudden glimpse and did not recur during the later centuries of the habitation of Tepe Ali Kosh. In the neighbouring site, Tepe Sabz, it appears in the very earliest deposit, the Sabz Phase, and increased in frequency in sample after sample as time went on. It was shown above that the complex of botanical findings from that settlement demonstrates some sort of controlled irrigation from the very foundation date, probably contemporaneous with Hacılar level VI. But only after the lapse of a millennium or more does it occur in a volume competing with that of the two other varieties; at the same time naked barley shows signs of retreat.

In discussing the emergence of naked hexaploid wheat it was demonstrated that it occurred first in association with six-row hulled barley and the large-seeded race of flax. Also, it was shown that the evolution of the latter seems to be the result of controlled irrigation. Thus it may be concluded that irrigation was the governing factor also for the survival and stabilisation of the hulled six-row mutant. What can possibly explain that the variety could not put up with the practical conditions in upland, rainwatered agriculture, while it prospered under artificial watering in the hot arid steppe?

It is propounded that the dry and hot period during the final ripening season killed the six-row barley in the mountains. This may seem a drastic and far-fetched idea, but let us single out a certain physiological characteristic and on this basis compare the two hulled varieties. It is not argued that this is an inevitable answer, but it seems a possibility worthy of consideration. Presumably the newly fertilised lateral florets in the six-row hulled mutant were awned from the outset.[32] If so, the now six-row spike had three times as many awns as a two-row one with the same number of triplets.

Now, the physiological function of the awn is that of a transpiration organ. Its loose interior tissue in connection with the strongly developed veins and densely distributed respiration cells (stomata), makes it well adapted to dealing with a heavy transpiration flow; also to step up the transportation of nourishing matter to the grain. It has been demonstrated that barley spikes with the awns cut off, pass only one-fourth to one-fifth of the water compared with a spike with the awns intact.[33] If thus a six-row spike evaporates more than a corresponding two-row one, it is logical to conclude that the plant needs a more generous water supply than the two-row variety.

This might be the significance of artificial watering at a late vegetational stage under severe evapotranspiration conditions.

Why the same explanation does not seem to apply to the naked variety cannot be accounted for. It is a fact that the latter did flourish in differing ecological stations long before irrigation was organised, whereas there is no trace of the hulled form until that technical advance was instituted. Neither can it be explained why naked barley disappeared from the whole of the Near East long before the Christian era, while the hulled varieties carried on and expanded immensely; the two-row variety in the mountains and the six-row in the river basins. Experiences from Deh Luran seem to suggest that naked barley suffers already at a fairly low degree of soil salinity, and its absence from the later Mesopotamian irrigation agriculture, as also from Egypt, may be due to this cause. Hitherto we have no clue to its fate in Anatolia between the abandonment of Hacılar and the bronze age settlement of Beycesultan where salinity is no problem. In the last mentioned place it was barely represented among the hulled two-row barley, and thus by the thirteenth century BC obviously given up as a crop plant.

The reason for its disappearance may not, however, be the same in all areas; the ecological conditions and the prerequisites for salinity differ very much from one region to another within the general area of the Near East. Natural causes may easily have been supplemented by human preferences, a factor documented for antiquity only with difficulty, but for which copious evidence could be supplied by present-day examples

from primitive societies. The distributional pattern of several domesticated plants of later prehistoric ages and early historic times is quite inexplicable on an ecological basis and must have been governed by ethnic traditions and preferences.

It is tempting, in this connection, to recount a personal experience bearing on this phenomenon. Accompanied by my friend, the Egyptian botanist Dr Loutfy Boulos, I made, in 1960, an excursion to the northern Sinai with the purpose of searching for *Hordeum spontaneum* in Wadi Harridan and Wadi el Arish. According to the Cairo Herbarium the species has been found in that area occasionally. The winter having been almost rainless, I did not find the wild barley; so I spent some days studying the local agriculture about the village of el Arish near the Mediterranean shore.

We got into conversation with a peasant whose holding was equivalent to the area of a six-room flat. In a corner he had dug a well from which he irrigated his crop, mainly six-row barley, with a draw-bucket. Looking around, I discovered occasional plants of the two-row variety, and I asked the owner if I could have a few spikes for my collection. 'Oh, you can have them all' he said, 'I always weed them out whenever they crop up; they are evil plants.'

On subsequent examination I could find nothing evil about them; they were perfectly normal domesticated barley with no trace whatever of primitive features. But even this obviously poor man was, for some irrelevant reason, averse to getting that corn into his bread.

Attitudes like this may account for some otherwise inexplicable patterns in prehistoric agronomic practice and crop choice.

PULSES

9. Lentil (*Lens esculenta*)

Probably because of the generous availability of pea, lentil was not a very important cultivar at Hacılar. Indeed the small discoid seeds occur sporadically in most samples, but only in one house of level VI (Q.4) and one of level II (Q.1), do we find separate stores of the plant. Together these lots amount to 120 ccm, or less than one per cent of all plant remains.

Very little material has so far been produced shedding light on the genetical and cultural history of lentil. Stray seeds are found in several early sites in western Asia and Greece from which, however, no useful information can be deduced. Only Aceramic Beidha in Jordan has yielded a fair number of seeds well enough preserved for discussion.

Among some 3200 carbonised seeds of various large legumes, found during the 1965 campaign in an early seventh millennium house, 53 small lentil were picked out. On an average, 45 seeds measure 2·64 mm in maximum diameter, varying from 2·08 to 3·08 mm; in thickness they differ from 1·00 to 1·75 mm with a mean of 1·33 mm. It is obvious that two species are involved; one group is of medium diameter with a blunt edge and is fairly thick. The other is larger, thinner, and has a sharp flaring edge, in general corresponding to the wild *Lens orientalis*.

The local Hacılar product appears already in the Aceramic settlement, with a maximum diameter of 2·92 mm. No improvement in size can be established in the level VI

lentil of more than a millennium later; they vary from 1·92 to 3·00 mm, with an average of 2·40 mm. Seeds from levels II–I do, however, show an increase of diameter: they reach a maximum of 3·67 and an average of 3·08 mm. The pointedly elliptical hilum varies about a mean of 0·08 by 0·30 mm.

This evolution seems to indicate that it was a local race, improved by irrigation and selection without, however, attaining the dimensional standard of other races or varieties grown further east. Yet in thirteenth-century Beycesultan, not very far from Hacılar, the maximum diameter is 4·00 mm and the average 3·26; and lentil grown in the area today would hardly surpass 4·50 mm in the carbonised state.

Looking east, a deviating situation is revealed in a series of finds, proving both a greater initial diameter and a higher degree of improvement through the ages. The geographical backbone of this area is the Zagros mountains, but the large lentil is encountered also in the north-western Tigris basin and in Palestine.

In the Deh Luran valley in Khuzistan, Iran, the climate is too hot and arid for lentil to be grown without irrigation. Nonetheless, at the excavation of Tepe Ali Kosh, two seeds of the species were found among some 40,000 seeds and grains. The earliest of them originates in a level of the Ali Kosh Phase that can hardly be later than 6200 BC, while the other seed came from the bottom level of the succeeding Mohamad Jaffar Phase, probably half a millennium later. This sporadic appearance, especially in such climatically unsuitable circumstances, shows that the seeds were not grown locally, but were introduced from abroad.

Now, the oldest of the seeds is 3·50 mm, very nearly as large as the largest seeds at Hacılar of a millennium later. It may be inferred that somewhere in the moister uplands within trading reach of Deh Luran, there was agricultural settlement where the species had been grown for some time and had been improved by selection.

There is convincing evidence that the neighbouring village in Deh Luran, Tepe Sabz, was founded by people who exercised some form of controlled irrigation, at a time presumably corresponding to Hacılar levels VI–IV. Therefore, the regular occurrence of lentil from the very beginning of this settlement is not surprising. But again the seeds are definitely superior to the contemporaneous Anatolian product, already in the initial phase attaining a maximum of 4·17 and, in twelve seeds, a mean diameter of 3·51 mm.

Further north on the western side of the Zagros range, this large variety appears in Tell Bazmosian in Iraqi Kurdistan at the end of the third millennium, measuring from 2·42 to 4·58 mm, and once more some 600 years later, with diameters reaching 4·94 mm. Late Assyrian Nimrud also comes up with lentil of about 5 mm in diameter. Even Early Bronze Age Lachish in Palestine yielded seeds varying from 2·56 to 4·76 mm.[34]

Both east and west of this central area many different varieties were grown in ancient times, but nowhere do the reported dimensions match those mentioned. We saw that Anatolia yielded a medium size, and most European lentil are even smaller, rarely exceeding 4 mm.[35] A particularly small, but very definite type was found in large quantity in iron age Monte Loffa in northern Italy,[36] with a maximum diameter of

only 2·42 mm. Buschan quotes the same dimension for the Bronze Age seeds from Troy II.[37]

Present-day lentil vary in diameter from *c.* 2 mm in Afghanistan to some 8 mm in the Po valley. The commonest varieties grown in the Near East range from 4 to 6 mm in the fresh state.

Apart from horsebean, *Vicia faba* s.l., no domesticated legume varies so much in size of seed, and there is reason to believe that, like the latter, lentil is of hybrid stock. In the Zagros-Caucasus area various wild species are found that may be involved in the emergence of the domesticated species.

Lentil belongs to the earliest cultivated pulses and it is the one most frequently occurring in prehistoric and later finds from the Near East. In Europe its pattern of cultivation, as at present known, is irregular, seemingly not based so much on ecological and climatic factors as on ethnic tradition. An interesting case is its occurrence, about AD 100, in Roman context in Wales. This is most definitely beyond its ecological range; it is the only indication of the pulse reported from the British Isles, and the species was undoubtedly imported and grown as an experiment by the Roman legionaries.[38]

Before passing on to the other pulses, a false concept, often repeated in literature, should be touched upon. Even quite recent reports on ancient plants advance the allegation that, in contradistinction to other seeds, lentil increase in volume on carbonisation. This claim, divorced from reality, seems to be based upon a statement by Oswald Heer more than a century old. It is a classical example, unfortunately not rare in palaeoethnobotany – or archaeology, for that matter – of 'following one another's tails in an eternal circle like asses in an olive mill'.[39]

In an attempt at placating my misgivings on this issue I took 100 lentil, grown in the Lebanon in 1954 and thoroughly dry; they were measured, carbonised slowly at some 400 C°, and measured again. Although the curves show considerably irregularity, the diameter displays a mean shrinkage of 9 per cent; the thickness remains practically unchanged and thus the mean T:B index increases from 52 to 58. The latter reaction is more conspicuous but principally no different from other seeds and fruits. The figures of the experiment are quoted below:

100 fresh lentil with seed coat

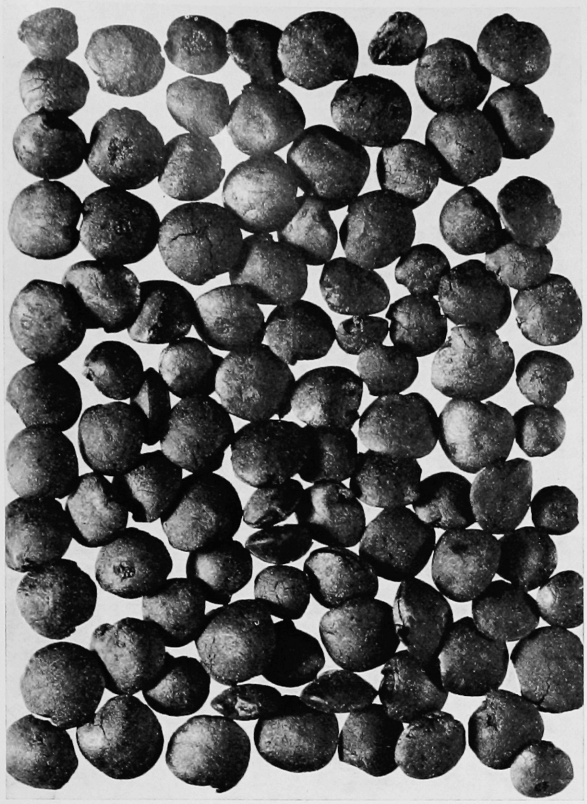
	raw	*carbonised*
B:	4·95 (3·75–5·67)	4·51 (3·08–5·33) mm
T:	2·60 (1·92–3·00)	2·63 (1·75–3·18) mm
T:B index	52·3 (45–63)	58·2 (48–68)

change on carbonisation; B: ÷9%(÷6·0 – ÷17·9); T: +1%(÷8·8 – +5·7).

If considered an ideal elipsoid, the average lentil of our experiment has thus shrunk from a volume of 33·50 to 28·25 cubic millimetres, or 15·7 per cent.

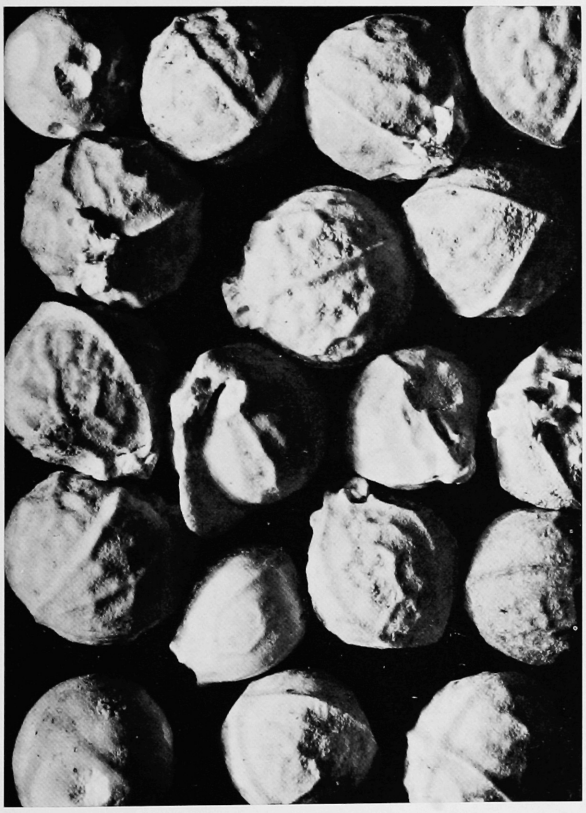
10. Purple Pea (*Pisum elatius*)

Practically all samples both from the late neolithic and the chalcolithic strata contained pea. The variation in size is somewhat greater than in experimentally carbonised seeds collected fresh on the Konya plain, indicating that the ancient pea were harvested



a

b



c

d

PLATE V

(*a*) Seeds of lentil (Q.II.1)
(*b*) Seeds of Purple pea (Q.VI.2)
(*c*) Fruit stones of Hackberry (Q.VI.?)
(*d*) Seeds of Bitter vetch (P.VI.3)
3.6 diam. *Photo: H. Helbaek*

before full maturity. The average diameter of the almost round seeds (T:L index 93) is, however, not significantly less than the modern material.

When large seeds of the leguminous family carbonise, the seed coat dries up and shrinks at the same time as the moisture in the cotyledons expands and, as the connection between the two is never very close, the seed coat is most often lacking in ancient pea, lentil, bean, and others.

Among the many thousand Hacılar pea, not one is completely undamaged, but the state illustrated in pl. V:b is not uncommon. Bits and pieces of the coat may adhere to the cotyledons, especially around the bluntly oval hilum which varies from 0·88 to 1·24 mm in length, and from 0·52 to 0·64 mm in width.

Three species of large-seeded wild pea are distributed in the Near East and the Mediterranean countries: Field pea (*Pisum arvense*); Low pea (*P. humile*); and Purple pea (*P. elatius*). The plants are not strikingly different, but may be distinguished by the colour of their flowers and their variously shaped stipules, the leaf-like appendages at the base of the leaf stalk. In Field pea the seed coat is smooth, while in the two others it is rough and densely granular. Carbonised seeds of Purple pea cannot be distinguished from those of Low pea.

Whenever remnants of the coat are preserved in the Hacılar seeds, they display a rough surface; no smooth seed coat has been observed. Thus the Field pea is ruled out. The final identification is, however, based on the fact that while the writer found the Purple pea one of the commonest weeds on the Konya plain, Low pea was not encountered at all. It seems warrantable to conclude that the same was the case in ancient Hacılar.

Purple pea belongs to the high steppe and low mountains, preferring humid stations. When herborising in the irrigated area around Çumra on the Konya plain, the writer found it everywhere along ditches and canals, in orchards and vineyards and in fields of pulse crops. In mid-June he greatly enjoyed the attractive taste of the slightly immature seeds. It would have been very easy to collect a gallon of seeds at every excursion; but although collecting various other plants, mostly for technical purposes, the local farmers took not the slightest interest in this highly nourishing and abundant weed.

From this experience it seems doubtful if the Hacılar pea was at all cultivated. It may easily have been collected in the part of the arable adjacent to the river without the peasants having had to do anything about it; it is worth noting that no seeds of weeds were found among the pea. This shows that the seeds or the pods were collected directly from the plants, whether cultivated or no, and not threshed off harvested plants.

As far as known, Purple pea is not cultivated anywhere and it is not reported from other prehistoric or later finds. Peculiarly enough, the pea found in abundance at Çatal Hüyük is not this species, but the Field pea.

11. Bitter Vetch (*Ervum ervilia*)

Today a fodder crop only, Bitter (or Camel) vetch seems to have gone into the diet of ancient man. It often grew with lentil, and pure deposits of the seeds are usually found along with human foods.

At Hacılar there is only one small deposit, coming from house P.3 of level VI, but stray seeds in most other samples show the plant to have occurred as a straggler throughout the whole occupation period.

Although almost isodiametric, the seeds are not really round; they are rounded-angular with a vaguely triangular plane across which the radicle is stretched, with the small hilum at its tip. On either side of the radicle, and often irregularly in other places too, shallow depressions occur that are frequently prominent even in the carbonised state (pl. V:d). On an average the seeds are about 2·50 mm with a bluntly oval hilum 0·60 to 0·70 mm long and 0·26 to 0·32 mm wide.

As a cultivated plant Bitter vetch seems to have emerged in Anatolia, but its genetic antecedents are unknown.

It is found at Çatal Hüyük and Hacılar before and about the middle of the sixth millennium. During the second half of the third millennium BC it appears in the plant finds from Troy II[40] and possibly at Lerna[41] in northern Peloponnese; about the same time or slightly later the species occurs as an impurity in lentil at Tell Qurtass[42] in Iraqi Kurdistan, and finds both from Mycenae[43] and Beycesultan, of the thirteenth century BC, contain pure deposits of these seeds. In the Early Iron Age site of Afula[44] in Palestine many seeds were identified, and the species occurs at Ain Shems[45] among horsebean and other food plants, but here the date is uncertain; it may be either Late Bronze or Early Iron Age.

From Greece it was introduced into Italy some time in the early first millennium BC and is reported from Luni sul Mignone in Etruria,[46] and from the tombs at Forum Romanum,[47] both of the eighth to seventh century BC. The last mentioned occurrence was misidentified and originally published as an unusually small specimen of Grass pea (*Lathyrus sativus*) together with which it occurred in association with horsebean. A few seeds were present in a heap of lentil from Late Assyrian Nimrud of the seventh century BC. One unquestionable occurrence is ascertained for Egypt,[48] but its age, although probably Late Dynastic, is not established.

Having himself handled and identified all finds mentioned here except Troy, Lerna and Afula, the present writer is of the opinion that beyond Anatolia and Greece – and possibly in Palestine – the Bitter vetch was more of a straggler than a crop on its own. It occurs especially with lentil and horsebean, and like these it seems to thrive best in fairly humid climate or, if in arid tracts, by irrigation.

As a fodder crop Bitter vetch is, in our day, grown south and north of the Mediterranean; further in eastern Iran, Afghanistan and India-Pakistan. It is interesting to note that it is not listed for modern Iraq, and its prehistoric occurrence at Tell Qurtass probably signifies trade relations with Anatolia.

Non-Cultivated Plants

Arboreal fruits

Apart from the ever-occurring short-term variations in climate there is, for the period and geographical region with which this treatise is concerned, no reason to imagine the ecological conditions materially different from those prevailing today. The Hacılar river has certainly shifted horizontally within its erosion basin, but its relative bed level

and volume would still be more or less the same as it was when the Aceramic settlement was functioning. And precipitation can hardly have changed significantly.

Therefore, the denudation of the mountains and the razing of the plain are consequences exclusively of human activity; of slashing the forest, burning the maquis which may have replaced it in abandoned strips of the arable, and overgrazing by domesticated herds. Judging by the scarcity of evidence for exploitation of arboreal fruits, this destructive activity seems to have been well advanced already in the late neolithic. Even an agricultural community as prosperous as Hacılar would have utilised the fruits of the forest to a much larger extent than reflected in Plant List C, had the forest been undisturbed and close at hand.

As it is, very few seeds and fruits of only six species of shrubs and trees were found among the agricultural products. All the species belong to the forest or maquis of plains and mountains in such environment as Hacılar. Two of them, juniper and apple, are widely distributed beyond this climatic type, both to the east and north into Asia and throughout Europe. The others are restricted to more southerly latitudes; the Nettle tree and caper from the Atlantic to the Caucasus and beyond, and the pistachio from Anatolia and Cyprus to Arabia and Afghanistan. Almond is found in several related varieties all over western and central Asia.

List C. Arboreal Fruits (*numbers are items*)

LEVEL *and* APPROX. DATE BC	VI 5450			II 5200	II–I 5050
AREA : HOUSE	Q.1	Q.5	Q.?	Q.1	well
12. Juniper seed (*Juniperus communis*)					1
13. Hackberry stone (*Celtis australis*)			125		
14. Caper seed (*Capparis spinosa*)	3	2		1	
15. Almond stone (*Amygdalus* cf. *orientalis*)					x
16. Apple pip (*Pirus malus*)					1
17. Pistachio nut (*Pistacia atlantica*)		2			

12. Juniper (*Juniperus communis*)

Whether or not the juniper seed should be considered under this heading is not easy to decide. A fruit may have got into the food remains in consequence of juniper brushwood with foliage having been used for fuel. On the other hand, in one of the grain bins at Çatal Hüyük quite a few seeds of another species of the genus (*J. excelsa*) were found among carbonised wheat and nowhere else in the cultural debris, suggesr-ing that they had some connection with the food.

At present the aromatic resin of the berry-like cones is sometimes used as a spice in alcoholic beverages, for instance in gin. It is quite possible that the fragrance was appreciated for some culinary purpose by the chalcolithic villagers at Hacılar, or that the medicinal qualities of the species were known and utilised.

The seed is somewhat angular, obliquely drop-shaped, 4·17 mm long and 2·00 mm wide (pl. 1:c, 1). Its surface is characterised by a few oblong depressions representing the resin glands.

13. Nettle Tree (*Celtis australis*)

Fruits of this species, hackberries, look much like small cherries except that they are brown or orange. The stones are sometimes smooth with a slightly ridged suture, but most often they are coarsely reticulate with two ridges meeting at right angles, dividing the surface into even quarters. The pedicel scar is crested and oblique, and the stones vary in length from 4·67 to 7·17 mm and vary in width from 4·50 to 6·50 mm (pl. v:c).

Exposed to fire, the Hacılar stones have not carbonised, but all organic material has burned away and left the mineral matter with a dead whitish colour. In cases the carbonised seed is found preserved inside the chalky shell.

Such stones are found in great numbers everywhere at neolithic Çatal Hüyük as well as in the aceramic site of Aşikli[49] near Aksaray in Anatolia. The species is also recorded from Hasanlu[50] in Iran of the early first millennium BC, and the characteristic stones were excavated in Bronze Age levels at Agar[51] in Spain.

Pliny mentions that the wood of Nettle tree is good for flutes, and that the fruits were then collected and used for a popular kind of wine.[52] Maybe the Hacılar farmers had already recognised the alcoholic possibilities of the fruits.

14. Caper (*Capparis spinosa*)

The caper is a straggling, extremely spiny shrub with large white flowers, and fruits that look like small slender figs. The seeds that are embedded in a red jelly, are roundish with a curved protruding radicle; carbonised they are 2·67 to 2·92 mm long and 2·17 to 2·50 mm wide (pl. 1:c, 12).

Such seeds have been discovered in cultural contexts of the Aceramic Neolithic in Tepe Ali Kosh in Iran and Beidha in southern Jordan; also in Early Hassunan context at Tell as-Sawwan near Samarra and the slightly later Tepe Sabz in Iran. Many seeds were found along with Iron Age grain at Hama[53] in Syria, and a few occurred in Late Assyrian Nimrud[54] on the Tigris.

The shrub is distributed in mountainous forests and maquis as well as in rather arid steppe regions in the Mediterranean basin and western Asia. In some Near Eastern areas the fruits are eaten by shepherds,[55] and it would seem that they were commonly utilised in prehistoric times. In our day the caper is cultivated in Mediterranean countries for its flower buds that, in the pickled state, are used for seasoning of sauces.

15. Almond (*Amygdalus* cf. *orientalis*)

Only fragments of almond shells were found at Hacılar so it is not possible to say very much about them. They are fairly thick and the stone was keeled, but not pitted. The

suggested species occurs in Anatolia in several varieties with slightly varying shells. A collection of almond stones was found at Çatal Hüyük, evidently more or less of the same type as these. Fruits of this genus were exploited in prehistoric times wherever they occurred, but most often the shells have burst on carbonisation and have become indeterminable.

16. Apple (*Pirus malus*)

Among the grain from the Well a score of fragments of an apple core and one damaged seed were discovered. The seed seems to have been some 3·3 to 3·5 mm wide, but no exact dimensions can be obtained as the seed coat is mostly lacking. However, remnants preserved about the base show the characteristic epidermis of the species, rather like fur with adpressed hairs.

Apple pips were found in a tomb at Çatal Hüyük, but evidence for this fruit is not common in the Near East. In Europe, utilisation and even preservation by drying of sliced or bisected applies are attested for the Neolithic in Switzerland[56] and Denmark.[57] Imprints of the pips are commonly met with in many areas, also of subsequent periods.

17. Pistachio (*Pistacia atlantica*)

These very fat and palatable nuts would have been cherished by man from the earliest times, and evidence for their exploitation from about 7000 BC is available from a long series of Neolithic to Iron Age sites in the Near East. Jarmo in the north and Ali Kosh in the south along the Zagros range, and Beidha in the eastern edge of Wadi Araba in southern Jordan, testify to its utilization in the seventh millennium BC. Early Bronze and Iron Age Lachish[58] in Palestine, as also Kalopsidha[59] in Cyprus, represent later times; the fruits are still sold in the market from Iran to Anatolia and in the east-Mediterranean countries.

One of the Hacılar fruits, still partly covered by its wrinkled skin, is 5·00 mm long, 4·67 mm wide and 3·68 mm thick (pl. 1:c, 5); in the other the bony shell is exposed and it is consequently of smaller dimensions, but both are distinctly oblique.

The fruits of pistachio are used in baking and confectionery, or consumed in the roasted state; immature fruit clusters are pickled in certain areas. The sap of the tree may be used for turpentine, resin (mastic) and gum; and as an incense. Among bedouin the root bark is much appreciated for tanning, especially for curing of water skins.

WEEDS

Except three, the species enumerated in List D are weeds, that is, plants adapted to the less exacting existence in tilled soil. Medusa-head grass and Chian bugle occur in undisturbed soil in Anatolia, and Sea club-rush is a swamp plant requiring more or less water-logged ground as river and canal banks and areas frequently flooded throughout the year. All the species were found growing in the Konya-Çumra district when, in 1962, the writer herborised around Çatal Hüyük. All of them are distributed far beyond Anatolia, along the Mediterranean and into southern and central Europe, and several far into western and central Asia. Sea club-rush, Lesser bindweed, Field gromwell, Knotgrass and White goosefoot extend further into the north of Europe, and the two last mentioned may be described as true cosmopolitans.

Whereas many prehistoric finds of plant remains indicate that some seeds of weeds were gathered for additional food, occasionally for a specific property such as plant fat, there is at Hacılar no indication of this practice with reference to the species included in List D. Agriculture was so lucrative that only collection of seeds as profitable and abundant as the Purple pea would occur to the farmers – if it was not actually cultivated.

Even allowing for the inevitable vagaries in the occurrence of weeds in prehistoric grain deposits, the Hacılar list of weeds seems peculiarly lopsided. The grass family is under-represented to an extraordinary degree, and two such families as the *Cruciferae* and the *Compositae* – occurring in a vast number of very common species in an ecological habitat like Hacılar, are not represented at all.

18. Medusa-head Grass (*Taeniatherum crinitum*)

This English name does not, in fact, apply to our species, but to a closely related grass of almost the same aspect. The spike is characterised by long irregularly straggling and twisting awns emerging from the small, acute paleas. The grains are long, thin and slender with a large, pointed embryo and a tapering apex, in the carbonised state varying in length from 2·67 to 3·50 mm (pl. IV:d).

Nineteen more or less complete internodes were found in the Well together with the grains; they are roughly quadrant in cross section, 0·80 mm wide and up to about 3 mm long. At the node are two calluses, shaped like small donkeys' ears, from which the grains have detached, each screened by two coarse, incurved glumes.

The species is widely distributed in mountains and high steppe all over the Near East. For some unknown reason this grass was collected by the people of Çatal Hüyük.

19. Sea Club-rush (*Scirpus maritimus*)

Fifty-four achenes of rush were found in the Well deposit; they are unequally trigonous and have a very thick seed case and a protruding style base.

Sea club-rush is a swamp plant very common along lakes and streams all over Europe and the Near East; it is highly adaptable to saline and otherwise unfavourable soils as well as to a great variety of climate.

While in all morphological features the plant found in Anatolia corresponds closely to those of northern Europe, the achenes of the Anatolian race are appreciably smaller (pl. IV:d).

The seventh millennium Ali Kosh and the sixth millennium Çatal Hüyük both yield finds of this species.

20. 'Wila', unidentified ?pod

In each of two deposits from levels II and III was found what seems to be a pod, which the examiner has not succeeded in identifying. It has been illustrated and given this ficticious name by which it can be referred to until its identity is established, possibly by a more experienced reader of this report.

Elegantly onion-shaped, the vessels are somewhat constricted longitudinally into three bulges, but with no septa, and split at the apex in a triangular opening with three recurved, bifid tips. Whatever it is, the eventual seeds would be very small, at the most 0·3 mm, but the receptacles were empty when found (pl. I:c, 3).

LEVEL AND APPROX. DATE BC	VI 5450			III 5250	II 5200	II–I 5050	DIMENSIONS
AREA : HOUSE	Q.1	Q.2	Q.5	trench	Q.1	well	(millimetres)
18. Medusa-head Grass (*Taeniatherum crinitum*)	:	:	:	1	:	54	2.67–3.50 × 1.00–1.50
19. Sea Club-rush (*Scirpus maritimus*)	:	:	:	:	:	42	1.42–1.75
20. 'Wila', unidentified ? pod	:	:	:	1	:	1	3.83–4.08 × 2.25–2.33
21. Knotweed (*Polygonum patulum*)	:	:	:	1	:	10	1.50–1.92 × 1.08–1.25
22. Knotgrass (*Polygonum aviculare agg.*)	:	:	:	:	1	:	2.50 × 1.50
23. White Goosefoot (*Chenopodium album*)	3	:	:	:	:	15	1.08–1.25
24. Unspecified Goosefoot (*Chenopodium* sp.)	:	:	:	:	:	43	0.67–1.00
25. Forked Catchfly (*Silene dichotoma*)	154	:	:	:	9	:	1.04–1.42 × 0.70
26. Unspecified Catchfly (*Silene* sp.)	:	:	1	2	:	3	0.92–1.33
27. Cow Herb (*Vaccaria segetalis*)	:	:	1	:	:	:	1.83 × 1.83
28. Pheasant's Eye (*Adonis flammea*)	4	:	:	:	5	:	1.42–2.92 × 1.33–2.33
29. Fumitory (*Fumaria* cf. *officinalis*)	:	:	:	:	:	4	1.58–1.75
30. Chick Pea (*Cicer arietinum*)	:	:	1	:	:	:	L:4.17, B:3.83, T:4.67
31. *Cicer* sp.	:	1	:	:	:	:	L:3.25, B:2.75, T:2.58
32. Grass Pea (*Lathyrus cicera*)	:	:	:	:	:	1	B:4.33
33. Broad-podded Vetch (*Vicia noëana*)	:	:	:	:	7	:	2.92–3.75
34. Trigonel (*Trigonella noëana*)	:	2	:	:	:	1	1.83 × 0.58
35. Lesser Bindweed (*Convolvulus arvensis*)	:	:	:	1	:	:	2.83 × 2.00
36. Fragrant Heliotrope (*Heliotropium europaeum*)	:	:	:	:	:	1	1.33
37. Field Gromwell (*Lithospermum arvense*)	2	:	:	:	1	1	2.33–2.67 × 1.67
38. Chian Bugle (*Ajuga chia*)	:	:	:	:	1	:	2.67 × 1.17

List D : *Weeds*. Numbers are items.

21. Knotweed (*Polygonum patulum*)

Several achenes of this species were found in level II. They are trigonous with an almost smooth surface. Like the following species, it is extremely common in Anatolian fields and further widely distributed in southern Europe and western Asia.

22. Knotgrass (*Polygonum aviculare* agg.)

This fruit is trigonous with a rough surface and remains of the perianth preserved about the base. Knotgrass is a rather varied species, very common in Europe and Asia and beyond, most prominently occupying paths and roadsides and edges of cornfields. It is regularly found in prehistoric grain finds in Europe.[60]

23. White Goosefoot (*Chenopodium album*)

Lenticular with the radicle forming a bulge on the edge, these little shiny seeds belong to the commonest found among prehistoric European grain, more rarely in the Near East (pl. 1:b).

In places they were collected for food on a substantial scale; thus a Danish Iron Age house contained a pure deposit amounting to some 2·5 million of them.[61] In Anatolia the plant is common in vineyards and pulse fields.

24. Unspecified Goosefoot (*Chenopodium* sp.)

Forty-three seeds of another species of goosefoot were found in the Well deposit. They are similar to the above described except that their dimensional range is consistently below that of White goosefoot. On the basis of their diameter, 0·67 to 1·00 mm, there are several possibilities that could be taken into consideration for Anatolia, and it is therefore wiser to leave the question of their actual species open.

25. Forked Catchfly (*Silene dichotoma*)

The Hacılar fields of naked barley seem to have harboured quite a lot of this weed; two deposits yielded 163 seeds. They are reniform and the sides are furnished with rows of tubercles arranged concentrically about the micropyle (pl. 1:c, 6).

This species belongs to eastern and southeastern Europe and western Asia, but is introduced in central and western Europe also. It occurs in rocky places as well as in fields. In Anatolia it is common among the corn and along canal banks.

26. Unspecified Catchfly (*Silene* sp.)

This section comprises a few seeds, not all quite alike, which cannot be matched with the above. In a general way they are similar, but they are smaller, 0·92 to 1·33 mm, and the seed coat pattern deviates. The genus is too intricate for specification to be made on the basis of these few seeds.

27. Cow Herb (*Vaccaria segetalis*)

Belonging to the Carnation family, the Cow herb is a stout annual that occurs in cornfields all over the Near East and large parts of Europe; it has a fairly large number of conspicuous, pink flowers with an angular and toothed calyx. The seeds are globose, minutely and densely warted and, in the carbonised state, about 1·85 mm in diameter (pl. 1:c, 8).

In the past, seeds of the species have been identified in grain from Late Bronze Age Beycesultan not far from Hacılar, from early fourth millennium Tell Chragh[62] in Iraqi Kurdistan, Late Assyrian and Hellenistic Nimrud as well as from Early Abbasid Qantara[63] east of Baghdad.

28. Pheasant's Eye (*Adonis flammea*)

The achenes of this species are angular, copiously wrinkled and usually furnished with a more or less conspicuous crest. As to size they differ considerably, in our case from 1·42 by 1·33 mm to 2·92 by 2·33 mm. The illustration, pl. 1:c, 4, shows four of them together as the spike broke.

Many species of Pheasant's eye occur as troublesome field weeds in western Asia, north Africa and in parts of Europe, most of them with an attractive spike of scarlet flowers. Their presence in antiquity is attested by achenes found in grain from Nimrud, both of the Late Assyrian and the Hellenistic Periods.

29. Fumitory (*Fumaria* cf. *officinalis*)

Although an extremely widespread weed, Fumitory does not often appear in prehistoric Near Eastern grain finds. Beside Hacılar, the species is reported only from Tepe Ali Kosh, mid-second millennium Kalopsidha in Cyprus and Hellennistic Nimrud.

The fruit is easily recognisable, slightly flattened spherical, with a distinct valve seam and two small, close-set pits at the style base; the surface is coarsely wrinkled. Carbonised, it varies in diameter from 1·60 to 1·75 mm (pl. 1:c, 11).

Several species of the genus are distributed in Europe and western Asia, of which *F. officinalis* and *F. parviflora* are the commonest in such Anatolian environment as Hacılar. They occur in corn fields and especially in open growths such as pulse and root crops, and in vineyards.

30–31. Chick Pea (*Cicer arietinum*), *Cicer* species

In each of the deposits from VI Q.1 and VI P.2 occurred one seed of the genus *Cicer*. Both are badly damaged, the seed coat has gone almost completely and only faint characters are available on which to base an identification.

No. 30 is somewhat angular, 4·17 long, 3·83 wide and 4·67 mm thick; the protruding radicle is crushed, and only a small portion of the smooth seed coat is preserved on the ventral side. Here is, however, an oblique line of small irregular warts pointing towards the radicle, a feature characteristic of *Cicer arietinum*.

Although only this one specimen occurs at Hacılar, there can be little doubt that it belongs to the eventually domesticated species. In the complete state it would have been about 5 mm long, and that is a quite normal dimension for early Chick pea, and rather too large for any wild species of the area. Chick pea has been established for several ancient plant deposits (Early Bronze and Iron Age Lachish, Late Assyrian Nimrud and other sites), but the Hacılar occurrence seems by far the earliest hitherto.

No. 31 is a smaller seed of the same general description, 3·25 mm long, 2·75 wide and 2·58 mm thick. In this case the protruding radicle is preserved, but again the seed coat has worn off except for a tiny patch on one side, showing a coarse, densely warted surface. While this seed may be suggested as one of the wild species of the genus, no specific identification can be attempted.

Chick pea is one of the most important pulses in the south temperate zone, grown from the Atlantic to India. The seed is particularly palatable while not quite as rich in protein as many other pulses. It is to a large extent consumed as a confectionery, either freshly reaped, roasted in the pod and eaten hot, or the dry product roasted with

salt. Ground up it is used in soup or, mixed with sesame oil, as a paste to go with other vegetables or meat.

32. Grass Pea (*Lathyrus cicera*)

Because of its early occurrence here, this seed presents something of a problem. It corresponds well enough to the above name, but on the other hand it would be equally warrantable to put it down as an undeveloped specimen of the domesticated species, *Lathyrus sativus*. When the physiological transition took place is unknown; so, until cultivation of Grass pea is attested for Anatolia or some adjacent region at this early date, it seems best to reserve judgement.

The seed, of which only one cotyledon is preserved, is 4·33 mm wide without the seed coat, and it was triangular in cross-section with truncate ends.

The centre of the spontaneous distribution of the wild species is the Zagros-Caucasus complex, and it occurs widely beyond this area as a field weed. Evidence for *Lathyrus cicera* or its domesticated offshoot is very common in ancient plant deposits. Thus among sites mentioned in this report, it occurs at Jarmo, Tepe Sabz, Bronze Age Lachish, Troy, Lerna, Bazmosian, Nimrud, Forum Romanum and Early Islamic Qantara. The writer found it (unpublished) among Neolithic Field pea from Lobsigersee in Switzerland; it is further mentioned for Egypt and Hungary. Even for Britain it is evinced by a stray seed found among Roman cereals and pulses at Isca in Wales.[64]

Lathyrus sativus is grown for food as well as for forage in southern Europe, north Africa and far into western and central Asia. Seeds of modern domesticated varieties are much larger than ours.

33. Broad-podded Vetch (*Vicia noëana*)

Seven seeds may be referred to this common weed. They have lost the seed coat and hilum and are thus rather on the small side, 2·92 to 3·75 in diameter; the groove left by the hilum is approximately 1·5 mm long.

This quite large, yellow-flowered vetch grows in and along fields, in ditches and orchards in Anatolia and beyond, especially to the east. The Early Neolithic people of Çatal Hüyük seem to have collected them for additional food, judging by deposits of unmixed seeds found in both early and later levels.

34. Trigonel (*Trigonella noëana*)

A common pasture plant in Anatolia, this slender and straggling species bears thin, curving pods, 50 to 75 mm long and containing 15–20 small seeds. Our carbonised seed is cylindrical with the distinct radicle near the middle, 1·83 mm long and 0·58 mm thick; the surface is minutely dented.

As evinced by the finds of plant remains at Ali Kosh, the genera *Trigonella*, *Astragalus* and *Medicago* belong to a group of leguminous pasture plants for the seeds of which early agricultural man competed with his flocks. As sources of plant protein they were in time replaced by the large-seeded domesticated pulses.

35. Lesser Bindweed (*Convolvulus arvensis*)

One seed of this weed was found among the wheat in level III. It is 2·85 by 2·00 mm with a thick, rough seed coat and a conspicuous oblique base scar (pl. 1:c, 10).

Various species of the genus are very obnoxious weeds in most of Anatolia, but in

spite of their climbing habit they are not often represented in the grain finds. However, at Nimrud a few seeds were found both in Assyrian and Hellenistic grain, and one Çatal Hüyük sample contains quite a few of them.

Lesser Bindweed seems to originate in the Near East and the Mediterranean region and as a weed it has been carried with agriculture over most of the world except the tropics. In Europe it evidently arrived rather late; it is recorded for the Bronze Age in France,[65] and its earliest occurrence in Scandinavia is Eketorp[66] in Öland (Sweden) of the sixth century AD.

36. Fragrant Heliotrope (*Heliotropium europaeum*)

1.33 mm long, the carbonised achene of heliotrope is bluntly pear-shaped with a pinched and keeled base and minutely spiny surface. The species is of circum-Mediterranean distribution and common in Anatolia.

A deposit of many hundreds of these small fruits were found at Beycesultan, but not mentioned in the report. They are not carbonised, but seedless and decayed to a dark brown colour. Whether they are prehistoric or possibly a comparatively recent animal store is uncertain.

37. Field Gromwell (*Lithospermum arvense*)

Distributed in Europe and western Asia and occurring rarely in coastal Egypt and Sinai, this weed is extremely frequent in Anatolia, especially in irrigated or otherwise moist environment. The achenes are of an irregular shape, quadrant in cross section with a rough, stony surface. On burning they usually do not turn black, but the organic matter is consumed and leaves the heavy seed case (of calcium carbonate and silica) with a whitish mineral character; very often the seed is found inside, turned black in the normal way. The Hacılar specimens are 2·33 to 2·67 mm long and 1·67 mm thick. (pl. 1:b).

For some reason hitherto unexplained the fruits of several species of this family (the *Boraginaceae*) occur with a conspicuous frequency in very early deposits of plants, although the fruits can be of no nutritive value whatever and the stems less profitable than most other.

We find the gromwell in aceramic Hacılar, and in the earliest deposits at Ali Kosh (about or before 7000 BC) they are very frequent, petering out as time went on; more or less the same applies to Heliotrope at Ali Kosh. While no carbonised grain has been found at early seventh millennium Beidha, many achenes of two or three species of *Boraginaceae* were washed out of soil samples. It is as if there is in the family some property which made the plants useful to early farmers. The roots of some species are used for dyeing of textiles and other organic matter even in our day, and it is not impossible that this property is the explanation of the occurrence of the achenes, which in that case would be incidental.

38. Chian Bugle (*Ajuga chia*)

While fruits of many other members of the family *Labiatae* may be extremely difficult to name in the carbonised state, the achene of Chian bugle is singularly characteristic. The dorsal side of the oblong, slightly curved fruit is coarsely wrinkled transversely, one third of the ventral side is deeply reticulate, whereas the rest of that side is taken up

by the smooth, bisected scar. The achene is 2·67 mm long and 1·17 mm thick; more than anything it reminds one of a small larva (pl. 1:c, 9).

The species which is reported from Assyrian Nimrud, is distributed in southern and central Europe, Anatolia and the east-Mediterranean countries, ranging as far as southern Sinai.

Pestiferous Insects

As an afterthought it might be mentioned that Hacılar pea and grain bear witness to having suffered from insect attack in the same way as today.

Many Purple pea are hollowed out and almost bored through by Bean bug (*Bruchius* sp). In pl. VB, one perforated pea is depicted. The larva leaves an almost cylindrical pit about 2·5 mm in diameter, usually starting out from the hilum. In 1962, the same insect played havoc with the writer's fresh collections of large leguminous seeds on the Konya plain.

Several cereal grains, tunnelled lengthwise, show that weevil (*Sitophilus* sp.) foraged in the bins. Fragments of their bodies were found in the loose debris, and one grain still encloses the carbonised insect, evidently trapped at the moment of its metamorphosis (pl. 1:c, 7 and 2 respectively).

Weevil has accompanied man and shared in his harvest from ancient days, probably everywhere. These insects were found in cereal stores at Fayum as well as in Old and Middle Kingdom grain from other localities in Egypt. Also Assyrian and Hellenistic barley from Nimrud was ravaged by this little pest. In early seventh millennium Field pea from Aceramic Beidha the characteristic traces of the Bean bug were encountered.

Postscript

In summing up the Hacılar investigation it must be conceded that, although some questions have found their answers and certain conclusions, previously intimated by other findings, are now confirmed, we are still left with major problems unsolved. Too little Anatolian plant material has been subjected to proper analysis, and one area, unquestionably of crucial importance to our enquiry, Cilicia, stands aloof and uncommunicative. Strategically this luxurious alluvium must have been highly significant as soon as farming practices spread by migration, dissemination and barter. Many lines of communication from the Caucasus, the Armenian mountains and Palestine must have converged here, and further advance towards the west would have borne the stamp of this transit camp. But the deep silt has not yet yielded up its secrets.

Generally speaking, collection and cultivation of food plants aim at the acquisition of three basic constituents: carbohydrates (starch, sugars, etc.), plant protein (amino acids) and plant fat (oil). The use of these nutrients is reflected in most ancient finds. In the area here discussed, the south temperate zone of western Asia, carbohydrates were derived mainly from grasses, a few large-seeded species of which were eventually domesticated. Protein is available in useful proportions in the seeds of many leguminous pasture plants,[67] and such wild species were exploited from the earliest times.[68] Later on, some of the most prolific of them, pea, lentil and many others were improved

by cultivation and selection and in time domesticated. Probably most plant fat was derived from arboreal fruits such as acorn, pistachio, almond, hazel nut, etc., but in non-forested steppe, certain herbs like Wild flax and many cruciferous species would fill the need for this food element. Even in ancient communities amply supplied with animal protein and fat, much labour was often devoted to the collection and cultivation of the vegetable equivalents.

The Hacılar plant lists demonstrate that the two first-mentioned foods were paid proper attention while the third, plant fat, is all but invisible in the material. Negative evidence must, of course, always be used with proper reserve, but in a find so voluminous as Hacılar it certainly is a conspicuous absence. Of much more restricted measure, the Beycesultan find shows the same peculiarity and may be taken as corroborative evidence for the theory that in such Anatolian environment plant fat was not in urgent demand at all times. That this conclusion is not universally valid is proved by the Çatal Hüyük finds. They comprise quite a number of acorn, almond, and an occasional pistachio traded in from quite remote mountains. Also, local sources of plant fat were exploited by the collection on a very large scale of the two tiny-seeded cruciferous herbs, *Erysimum sisymbrioides* and *Capsella bursa-pastoris* (Shepherd's purse). That the commodity was considered essential by the inhabitants of the Konya plain is borne out by the fact that one ounce takes about 50,000 of these oleaginous seeds, the gathering of which necessitates the exercise of considerable labour and patience.

Both Wild Einkorn and Wild barley (*Hordeum spontaneum*) were presumably members of the flora of the virgin Hacılar environment, but even so, the Aceramic plant list suggests that agriculture was introduced from the east. There is no basis for regarding Emmer a local development; its wild progenitor belongs to the Zagros-Caucasus complex and the east-Mediterranean littoral mountains. Probably it always did, and this is the area from which it spread as a cultivated, eventually domesticated plant. Wild lentils (*Lens orientalis*, *L. kotschyana* and *L. nigricans*) also belong principally to these eastern mountain lands and seem to have prospered in tilled soil from the beginning, undoubtedly introduced deliberately. Therefore the ultimate origin of the Hacılar farming may reasonably be sought somewhere to the east of Cilicia. What intermediate stations it passed we have no means of knowing. Of the few Aceramic agricultural sites so far excavated in the Near East, Hacılar is the westernmost outpost and the only one west of Cilicia.

As indicated by the shallow deposit, only seven habitation levels, the village was abandoned for reasons other than land exhaustion. It would take many centuries, maybe more than a millennium for such a small society to over-exploit that type of locality, generously supplied with non-saline water; but no explanation is furnished by the archaeological investigation. However, when after the lapse of more than a thousand years the site was re-occupied, the agricultural pattern was principally the same, only augmented by an advanced stage of development in crop plants and land use. It is as if the early farming tribe had spent the obscure millennium in some other, as yet unidentified place in the same environment.

Within these particular periods and in that geographical area there is no plant find

with which a direct comparison is possible. The nearest in time and space is Çatal Hüyük, but that plant material is not yet finally worked up. However, quite apart from the effects of dissimilar ecological circumstances, certain characteristics may be pointed out that seem to show that the two communities were of different cultural derivation.

At Hacılar, lentil was not an indispensable food, but it certainly was a traditionally recognised crop, and it occurred as a straggler everywhere. Its relative importance in the aceramic period cannot, of course, be assessed reliably on the evidence of three seeds, but considering the pathetic state of the plant material generally, and the fragility of carbonised lentil in particular, three recognisable seeds constitute a fair proportion of the few identifiable items.

At Çatal Hüyük, among forty-five individual cereal and pulse deposits, not one consisted of lentil. Indeed the species does occur, but only as an accidental and obviously unobserved introduction – as a weed. So far only two seeds have been discovered, compared with thousands of seeds of proper weeds.

Whereas the principal pulse at Hacılar, the Purple pea, is a local wild species, the main pulse at Çatal Hüyük was the Field pea, a species that, at least today, does not occur at all in the district. Therefore it may be considered a neolithic introduction. Purple pea did occur too, but is rare in the material and was evidently an unexploited weed like it is at present.

The above described difference in the demand for plant fat is another distinguishing trait that can only be explained as ethnically conditioned. The environmental circumstances at Hacılar would seem to have favoured the access to this nutrient – but it was not exploited. On the other hand, the salty plain surrounding Çatal Hüyük offered only poor opportunities that were, however, utilised with energetic toil.

Accepting the premises advocated in previous sections, that hulled six-row barley and naked hexaploid wheat became stabilised as crop plants in consequence of human management of natural water resources, we may imagine some kind of primitive engineering having been instituted in the Hacılar area about the time of founding of the late neolithic village. The naked wheat was there from the beginning and the hulled six-row barley slowly gained impetus during the space of time represented by levels VI to I. This implies that the innovation was introduced from somewhere else where it had been practised for some time prior to the middle of the sixth millennium, long enough to get the hybrid naked wheat established.

What form this embryonic irrigation took is left to conjecture. Initially it was probably restricted to barriers thrown across the river, increasing the effect of the spring spate, both in area and duration. In connection with such operations, drainage ditches may have proved necessary to counteract prolonged waterlogging of low-lying stretches behind the levees, and it would seem that the intellectual step necessary to progress from the idea of leading water out to letting it in by canals, would not have been impossible. In fact, if the ditches were left over the year, the next spring spate would automatically show the way.

The qualification for such an evolution in land use, a perennial water supply, was available at all the sites in which, as yet, the two advanced cereals appear at the earliest

date. As at Hacılar, rivers flow near Tell as-Sawwan and Çatal Hüyük, and although no longer demonstrable, a river must have passed close to Tepe Sabz. In fact, as in the other cases, they must have constituted the principal motive for the emplacement of the village. Out of such humble infancy emanated even the magnificent engineering feats of the later Mesopotamian irrigation systems.[69]

The section on neolithic and chalcolithic food plants considered cereals and pulses in sufficient detail to introduce the Hacılar food plants into the general pattern of west Asiatic plant husbandry, and into that of Anatolia, as far as a pattern can be discerned from the scanty finds hitherto at our disposal. Another aspect of this plant inventory is, however, its relationship to agriculture in Europe. There is an intimate connection – but how immediate was the contact?

Very little is known of European agriculture at its initial stage, but it is obvious that certain lands adjacent to Asia Minor received the plant food-producing initiative from western Asia some time before our riverside mound was occupied for its second round. It would not be surprising if in time it turns out that primitive agriculture had spread across the Bosphorus and the Aegean simultaneously with the Hacılar aceramic phase. It is too early, though, to discuss this question in detail so long as no useful plant deposits have been subjected to competent and critical investigation; and until a reliable pattern of radiocarbon dates has been worked up for Mediterranean Europe and the Danube basin, enabling us to match plant lists with centuries for the two narrowly separated areas.

Taking a broad view of the situation, there are obvious parallels as well as conspicuous discrepancies. Einkorn, Emmer and Bread wheat appear in early contexts in Europe and the naked six-row barley seems everywhere to have been the predominant variety of the species. But so far no dependable evidence for the cultivation of two-row barley has been dug up anywhere west of the Aegean of any age up to Mediaeval times. On the other hand, hulled six-row barley accompanied its naked cousin in most places from the earliest times of which we have information.

According to the present consensus of opinion, based on radiocarbon dates, many cultures were active in various parts of south-eastern Europe at, or even before 5000 BC, by implication determined as agricultural societies. However, very little information of their plant inventories is available. It is, on the other hand, an enigma to the palaeoethnobotanist that two-row barley is absent from Europe since, as may be taken for granted, agriculture passed into that continent from western Asia where that variety was the sole or vastly superior hulled barley of the time. The evidence, stretching from Deh Luran in Persia to Hacılar in western Anatolia indicates that six-row hulled barley emerged as a crop plant in consequence of irrigation, and that it was of very minor importance up to the late fifth millennium, a time when it was widespread in Europe. Thus one cannot maintain that our neolithic Anatolian communities were its direct exporters.

But, if the hypothesis set forth in the section dealing with barley be accepted that what made the six-row hulled mutant a viable proposition was the artificial cancellation of desiccation during the final maturing period, then an explanation seems possible.

In most parts of Europe, precipitation and water-retentive properties of the soils deviate very much from those obtaining in Deh Luran and on the middle Tigris. Later spring rain, higher ground water tables and lower summer temperatures would actually supply just those growth conditions which, through artifice, were approximated by irrigation in the arid East. Thus the survival rate of six-row mutants would naturally increase and may, coupled with preferential selection, have ousted the originally introduced two-row barley within a reasonably short time. This explanation requires that, when the day comes, the two-row variety will show up in the very earliest agricultural levels in Europe, the initial products of which are still unknown. And the areas where this is most apt to happen would be such comparatively arid lands as Peloponnese, Sicily and maybe certain tracts in Spain. That primitive Aceramic settlements are not now known for these parts is most probably due to the usual random pattern in archaeological research, as also to the possibility that such experimental pioneer settlements were small and inconspicuous and their remains long since buried.

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Appendix

The Mammalian Fauna

Osteological material excavated from Hacılar. *B. Westley*

LEVEL III. 'Early Chalcolithic', Area B, 1957

Primates

Man (*Homo sapiens* L.). A large skull fragment consisting of the two parietals, unusually thick.

Carnivora

Canis sp. indeterminate. A small fragment of mandible, probably dog.

Artiodactyla

Red Deer (*Cervus elaphus* L.). About 35 antler fragments and 2 skull fragments. One large animal is indicated.

Mouflon (*Ovis musimon anatolica* Schreber). Fragmentary horncore, probably of a female. Not domesticated, certainly a mouflon and probably the subspecies now occurring in Anatolia.

Small ruminant (sheep or goat). 8 fragments. Three are mandibles, one a maxilla, and three of the fragments are of immature animals.

Cattle (*Bos* sp.). 7 skull and body fragments showing no specific indications. One, a tooth, is immature.

Rodentia

Hare (*Lepus europaeus* Pall.). One tibia, complete.

LEVEL VII. Late Neolithic.

Level VII represents the earlier floors of the houses of building level VI and is therefore not much earlier. Two somewhat conflicting dates are available for level VI, giving 5399 BC ± 85 for its destruction and 5590 BC ± 180 for its construction. The bones came from shallow depressions in the central courtyard in area B (or trench R).

Carnivora

Domesticated dog (*Canis familiaris* L.). Two right mandibles, one with M_1 preserved, both of small animals about the size of a fox. In one the incisors are curiously crowded and the jaws exceptionally pointed. It is possible that this indicates a breed resembling a long-muzzled greyhound.

Artiodactyla

Pig (*Sus scrofa* L.). 1 mandible fragment, young, with M_3 erupting. A second specimen is similar but older.

Red Deer (*Cervus elaphus* L.). Antler fragment with pedicle, also distal humerus and metatarsal fragments.

Mouflon (*Ovis musimon anatolica* Schreber). 4 fragmentary hornicores of the male mouflon and one female horncore fragment. No evidence of domestication.

Small ruminant (sheep or goat). 31 fragments, mostly jaws with teeth, of which 6 are immature.

Wild cattle (*Bos primigenius* Boj.). Two large horncores typical of the wild form. 47 other body fragments of which 3 are of immature animals. One, an axis, is deformed and appears arthritic. The majority indicate a large race.

LEVEL IX. Late Neolithic

The earliest occupation of the late neolithic mound, directly on virgin soil in area B. The bones from this building level were found not in houses, which were meticulously kept clean, but come from shallow pits in the courtyard, mixed with wood ash and other domestic rubbish. Radiocarbon date: 5487 BC±119 for the latest floor of level IX in area E. The bones came from virgin soil in area B, which may be somewhat earlier, let us say 5600 BC.

Artiodactyla

Roe Deer (*Capreolus capreolus* L.). Antler fragment with pedicle.

Mouflon (*Ovis Musimon anatolica* Schreber). Horncore of male. Not domesticated.

Wild goat (*Capra aegagrus* Erx.). Fragment of small horncore, wild scimitar-type, not twisted (Zeuner, 1955, p. 73).

Small ruminant (sheep or goat). Mandible fragment with 2 molars.

Wild cattle (*Bos primigenius* Boj.). Remains of more than one large animal, including one large horncore, as in level VII.

Other small fragments.

ACERAMIC LEVELS

Date: definitely before 6000 BC and possibly as early as 6500 BC. Scattered bones from several floors, mainly from the end of the period. The deposit was thin, 5–6 feet. Some bones were strewn on the red plaster floors but most of them, splintered to extract the marrow, were found in the adjacent courtyard.

Primates

Man (*Homo sapiens* L.). A proximal fragment of a right human radius, and a rib fragment.

Carnivora

Domesticated dog (*Canis familiaris* L.). 2 left maxillae of dog, representing animals of similar size and rather larger than a fox. One has a more constricted muzzle than the other. Both carry teeth, including P^4, M^1 and M^2 so that the usual test based on the relative lengths of P^4 and M^1 plus M^2 can be applied. In specimen A (the less constricted), $P^4 = 16{\cdot}5$ mm and M^1 plus $M^2 = 17{\cdot}7$ mm and the index

$$\frac{P^4}{M^1 \text{ plus } M^2} = 0{\cdot}932$$

In specimen B, $P^4 = 17{\cdot}3$ mm and M^1 plus $M^2 = 18{\cdot}6$ mm, the index being 0·93. These figures compare with fox-terrier:

$P^4 = 16{\cdot}8$ mm, M^1 plus $M^2 = 17{\cdot}8$ mm, index 0·944;

and with wolf:

$P^4 = 25{\cdot}7$ mm, M^1 plus $M^2 = 24{\cdot}9$ mm, index 1·03.

In absolute size, carnassial index and constriction of the muzzle, the Hacılar

specimens agree closely with the fox-terrier, and they must therefore be regarded as domesticated. (see Zeuner, 1963, p. 105).

Artiodactyla

Fallow Deer (*Dama dama* L.). Antler fragment, with pedicle.

Small Ruminant (sheep or goat). 5 mandible fragments with teeth. 3 are immature. 6 other bone fragments, including 2 metapodials.

Bos sp. 4 fragments of a large specimen.

Rodentia

Hare (*Lepus europaeus* L.). Right mandible, without teeth.

To sum up, the only domesticated species present with certainty is the dog, found in all three levels. All other species, namely pig, red deer, fallow deer, roe deer, wild goat, mouflon and wild cattle, have shown no evidence of domestication. The indeterminate group 'small ruminant' could belong to either wild sheep or wild goat. It is not inconceivable that there are domesticated specimens among these but there is certainly no evidence to prove it.

These results agree with observations made in the pre-pottery layers of Jericho (Zeuner 1958 and 1955) but it is surprising to find that no domesticated ruminant has been found in the early chalcolithic level, in which one would expect them to be present.

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Postscript

Hacılar is the name of a village not far from the Lake of Burdur, set in an intramontane valley of the Taurus Mountains in south-west Anatolia. West of the rich vineyards and orchards, amid fields and gardens watered by a copious spring, lies an ancient mound, small but important in the prehistory of Anatolia. The credit of its discovery belongs to Şadi Ibrahim Balaban, sometime history teacher at the Lisé at Burdur, who in December 1956 drew my attention to the site. From 1957-60, under the auspices of the British Institute of Archaeology at Ankara, I was able to conduct four short seasons of excavations, of which this volume is the definitive report.

Within a fairly rigid chronological framework of radiocarbon dates, the first analysed from Turkey, it has proved possible to outline the cultural development at Hacılar with more confidence and detail than can be mustered for most other contemporary sites in the Near East. The reason for this is threefold: Hacılar proved to be very rich in remains; it was chosen after the completion of a systematic field survey lasting several years and its publication was made subsequent to further excavations at an even earlier site, the now famous mound of Çatal Hüyük in the plain of Konya, so that the remarkable cultural achievement of the people of neolithic Hacılar could be assessed in true perspective.

Consequently, Hacılar does not hang in mid-air. It is no longer an isolated phenomenon and it can be interpreted in comparative terms. Unfortunately, the closing down of the excavations at this site had a tragic aftermath, for one of the richest sources of information, the cemetery, has been subjected to systematic plundering for the last seven years, to the extreme detriment of scientific knowledge.

From the limited excavations undertaken, it appears that Hacılar during the so-called neolithic and early chalcolithic periods, that is during the last three quarters of the sixth millennium BC, was one of the key sites in the development of early Anatolian civilisation.

Besides the still enigmatic aceramic village, dating from around 7000 BC, there is the main later mound with thirteen successive building-levels, which though never larger than a village, has nevertheless some of the most varied evidence ever produced by such an early site. Its economy is clear from the remains, and although its people were excellent farmers, hunting and fishing was of little importance. Their tools of stone were undistinguished, their armament poor, their luxury articles few and scanty. The working of copper was known, but hesitant; their trading activities, except in obsidian, not well documented. But the Hacılar people were farmers and artists. They made some of the finest painted pottery ever produced in the Near East. They were also sculptors and the quality of their little clay statues surpasses that of any other Near Eastern site of this remote period. During the earlier phases of the settlement they made fine marble bowls, and, judging by the textile designs on their pottery, they were expert weavers.

Behind all this artistic activity, as abundant and diversified at Hacılar as it had been at the earlier site of Çatal Hüyük, there lay the one great and inspiring force, the old religion of Anatolia, the cult of the Great Goddess and her son and husband, most often portrayed or symbolised in the form of a bull or ram. There is a strong possibility that Hacılar, like its great predecessor, was a local cult centre and thus the focus of an artistic development that had few equals.

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