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## BEYCESULTAN

VOL. II

by<br>SETON LLOYD and JAMES MELLAART

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View of the mound from East, across old bed of Maeander.

# OCCASIONAL PUBLICATIONS <br> OF THE 

BRITISH INSTITUTE OF ARCHAEOLOGY AT ANKARA

NO. 8

# BEYCESULTAN Vol. II 

## MIDDLE BRONZE AGE ARCHITECTURE AND POTTERY

by

## SETON LLOYD

and
JAMES MELLAART

Published by
THE BRITISH INSTITUTE OF ARCHAEOLOGY AT ANKARA
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## AUTHORS' NOTE

This book does not, we feel, require any sort of preface, since its contents follow those of the previous volume in direct chronological sequence. We deal here only with the architecture and pottery of the Middle Bronze Age levels, having thought it best that the small objects, which are in fact surprisingly few, should be recorded together with those of the Late Bronze Age in Volume III. It has, however, proved possible and convenient to append to this volume a study of animal bones, mostly from appropriate levels. At our invitation, this was made in Ankara during the summer of 1963 by M. Pierre Ducos of the Institut de Paléontologie Humaine in Paris, to whom we should here wish to express our thanks.
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## CONTENTS

Part I
Architecture
By Seton Lloyd
Chapter ..... Page1. The "Burnt Palace"3General description - The South-East Wing - The East Wing - TheWest Wing - Rooms south of the Central Courtyard - Trench "D" -The Plan reconstructed
2. Public Buildings on the Western Summit ..... 35
General description - Primary and Secondary Occupations
3. Religious Buildings in Area " R " ..... 39
Smaller and greater shrines - Architectural description - Details of individual rooms - Inventories of contents - Further soundings in Level V; Trench "W" and Trench "U"
4. Buildings Dating from the Reoccupation in Level IV
Buildings over the Palace ruins; Level IVb in Areas "AA" and "CC" - Level IVb dwelling in Square C/2 - Level IVa in Area "CC" - Area " $R$ " (Western Hill) - Level IV remains in Trench "S" - General inventory of Level IV
5. Some notes on the M.B.A. Architecture of Beycesultan . ..... 60
Sites and planning - Foundations - Wall structures - Doors and windows - Columns - Plaster
Part II
Pottery
By James Mellaart
6. Introduction. Middle Bronze Age Pottery ..... 69
Chronology of the Middle Bronze Age at Beycesultan - Relations with North-Western Anatolia in the Middle Bronze Age - Contacts with the culture province of the Konya Plain - Distribution of the South-Western Anatolian culture province - Middle Bronze Age wares and fabrics
7. Beycesultan V Pottery ..... 82
8. Beycesultan IVc Pottery ..... 101
9. Beycesultan IVb Pottery ..... 118
Chapter ..... Page
10. Beycesultan IVa Pottery - The transition to the Late Bronze Age ..... 128
Appendix: La Faune de Beycesultan, par Pierre Ducos ..... 139
Descriptions des espèces - I. Examen du matériel - II. Comparaisons - Étude statistique - Résumé
Index ..... 155
Type-sheets of pottery shapes with table of occurrence

## LIST OF FIGURES

## PART I

Page
A. 1. Site Plan ..... 2
A. 2. Square-setting of Palace plan ..... 4
A. 3. General Plan of Palace with rooms numbered ..... 6
A. 4. Overall Plan of Palace, Level V ..... facing 8
A. 5. Wall construction in Court 1 (Palace) ..... 9
A. 6. Remnants of wall-painting in Room 10 ..... 11
A. 7. Palace stairway between Rooms 2 and 9 ..... 13
A. 8. Fallen upper structure of wall in Room 13 ..... 15
A. 9. Section through Room 48 ..... 18
A.10. Wall construction in Room 31 (Palace) ..... 20
A.11. Details of Room 32 ..... 22
A.12. Plan of Trench "D" ..... 28
A.13. Perspective reconstruction of Palace ..... 30
A.14. Sections of Palace ..... facing 32
A.15. Plan of Trench "S", Level V . ..... facing 36
A.16. Trench "S", Room 5 ..... 37
A.17. Plan of Area "R", Levels V and IVc ..... facing 40
A.18. Sections of Area " $R$ " ..... facing 40
A.19. Perspective reconstruction of Temple in " $R$ " ..... 41
A.20. Plan of Trench "W" ..... 46
A.21. Plan of Trench " $U$ " ..... 47
A.22. Plan of East Wing, Levels IVa and IVb ..... facing 50
A.23. Level IV room between Palace rooms 16 and 17 ..... 51
A.24. Plan of Area " $R$ ": Levels IVa and IVb ..... 55
A.25. Level IV, Trench "S". Dug-out room ..... 57
A.26. Palace foundations and heating passage ..... 63
PART II
P. 1. Beycesultan V. Carinated bead-rim bowls ..... 84
P. 2. Beycesultan V. Bowls of various types ..... 86
P. 3. Beycesultan V. Bowls of various types ..... 88
P. 4. Beycesultan V. Two-handled bowls and "Palace-ware" ..... 90
P. 5. Beycesultan V. Bowls and saucers in "eggshell ware" and "palace ware"; and cups and goblets ..... 92
P. 6. Beycesultan V. Handled cups, pedestals and beak-spouted jugs ..... 94
P. 7. Beycesultan V. Beak-spouted jugs, spouts and jugs with bifoil or trefoil mouths ..... 96
P. 8. Beycesultan V. Fragments of "teapots", small jars, larger two-handled jars and a drum ..... 97
P. 9. Beycesultan V. Storage jars and a unique painted sherd ..... 98
P.10. Beycesultan V. Cooking-pots, storage jars and pithoi ..... 99
P.11. Beycesultan V. Rhytons in the shape of fantastic animals ..... 100
P.12. Beycesultan IVc. Carinated bowls ..... 102
Page
P.13. Beycesultan IVc. Bowls of various types. ..... 104
P.14. Beycesultan IVc. Bowls with handles and pedestals . ..... 106
P.15. Beycesultan IVc. Pedestalled bowls ..... 107
P.16. Beycesultan IVc. "Palace-ware", pedestals, funnel, etc. ..... 108
P.17. Beycesultan IVc. Beak-spouted jugs ..... 109
P.18. Beycesultan IVc. Beak-spouted jugs ..... 110
P.19. Beycesultan IVc. Jugs with trefoil mouths ..... 112
P.20. Beycesultan IVc. Jugs with trefoil or bifoil mouths, "teapots" and funnels ..... 113
P.21. Beycesultan IVc. Two-handled jars ..... 114
P.22. Beycesultan IVc. Jars and cooking pots ..... 115
P.23. Beycesultan IVc. Drums and decorated pithoi. ..... 116
P.24. Beycesultan IVb. Bowls of various types. ..... 120
P.25. Beycesultan IVb. Bowls of various types. ..... 122
P.26. Beycesultan IVb. Spouted bowls and pedestalled bowls ..... 123
P.27. Beycesultan IVb. Beak-spouted jugs ..... 124
P.28. Beycesultan IVb. Kantharos, jugs with plain round or bifoil or trefoil mouths and jars ..... 125
P.29. Beycesultan IVb. Storage jars, drum and cooking pots ..... 126
P.30. Beycesultan IVb. Pithoi ..... 127
P.31. Beycesultan IVa. Carinated bowls ..... 130
P.32. Beycesultan IVa. Bowls of various types ..... 132
P.33. Beycesultan IVa. Small bowls and saucers of "eggshell ware" and "palace plain buff ware", and plates ..... 134
P.34. Beycesultan IVa. Large ribbed bowls and two-handled basins ..... 135
P.35. Beycesultan IVa. Beak-spouted jugs, quatrefoil kantharoi and jugs with trefoil mouths ..... 136
P.36. Beycesultan IVa. Jars, "teapots", sieve and lamp ..... 137
P.37. Beycesultan IVa. Miscellanea: painted animal vase, pot in form of a moc- casin, potstand and cooking pot ..... 138
APPENDIX
F.1. Fréquences des classes d'âge et des restes osseux de Boeuf et de Petits Ruminants ..... 152
F.2. Fréquences des espèces, en courbe cumulative ..... 153
MAP
Map 1. Distribution of South-West Anatolian Middle Bronze Age Sites77
TYPE-SHEETS OF POTTERY
in folder at end of book
Sheet1 Beycesultan V pottery shapes.
2 Beycesultan IVc pottery shapes.
3 Beycesultan IVb pottery shapes.
4 Beycesultan IVa pottery shapes.

## LIST OF PLATES

Frontispiece. View of mound from the East.
I.(a) First clearances in the south-east wing.
(b) South-east wing: excavation in progress.
II. (a) South-east wing; after excavation.
(b) South-east wing with Room 16 in foreground.
III. (a) Room 10: the "Painted Loggia".
(b) Hearth and fallen timber in Room 10.
IV.(a) Room 9 with Rooms 14, 4 and 2 in background.
(b) Fragments of fallen ceiling from Room 14.
V.(a) Room 9 with cistern emplacements of Court 1 in background.
(b) Screened vestibule north of Court 1 with impressions of floor-beams.
VI. (a) Terracotta drum in ceiling debris of Room 9.
(b) Court 1: chase in beam-end for tongued foot of wooden post.
(c) Rooms 7 and 13: In foreground, secondary silo on fallen upper floor.
VII. (a) Water-cooler found in Courtyard 8.
(b) Timbers bedded in stone outside southern enclosure wall.
VIII. (a) Painted plaster on south wall of Room 20 ("Painted Hall").
(b) South-west corner of Room 20 with impressions left by fallen column and floor-beams.
IX. (a) Remnants of stonework in Rooms 22 and 23.
(b) Heavy deposit of partly calcined stone in Room 23; assumed remains of main stairway.
X. (a) Carbonized joists over air-passage in south-east corner of Room 45.
(b) Unidentified structure in the north-east corner of Room 45.
XI. (a) South wall of Room 17, showing (1) plastered face, (2) unburnt paving of air-passage, and (3) joist-end embedded in earthen floor.
(b) Cross-section of Room 18, showing (1) earthen floor, (2) subsided bridging of air-passage, and (3) brickwork of wall.
XII.(a) West Wing in the process of excavation.
(b) Room 21: foundations of east wall.
XIII. (a) Room 32: brickwork and foundations in north-west corner.
(b) Room 28: timber foundations of south wall.
XIV.(a) Well-preserved wall between Rooms 28 and 29 with charred threshold of doorway.
(b) Charred fragment of door-lining (?) with wooden bosses.
(c) Fragment of door to Room 28 showing framed or two-ply construction.
XV. (a) Fallen upper floor of Room 28 with (rt.) secondary structure.
(b) South doorway of Room 34 with door preserved.
XVI.(a) Fallen upper floor of Room 33 with deposit of straw bedding.
(b) West Wing after excavation, seen from the north-west.
XVII.(a) Fragment of wooden column lying in Room 36.
(b) Carbonized rushes from fallen upper floor in Room 40.
XVIII. (a) Straw bedding from fallen balcony (?).
(b) Straw bedding covering fallen balcony (?) in south-east corner of central Courtyard.
XIX.(a) Three upright stelae and stone structure at the base of ramp leading to west entrance of palace (foreground).
(b) Paved room at base of ramp in Trench " $D$ ".
XX. (a) Public buildings in Trench " S ", from the east.
(b) Early Bronze Age pottery emerging from beneath the foundations of Level V public building.
(c) Western corner of Room I, showing foundation beam bedded in stone, runnerbeams in stone substructure of outer wall, and brickwork of partition wall.
XXI. (a) Find-spot of stamp-seal beneath Level VI pavement in Room 4.
(b) Sink for lustration in Room 5, rebuilt at secondary occupation.
XXII.(a) Two religious buildings of Level V in Area " R ", from the west.
(b) Smaller Level V shrine after excavation.
XXIII.(a) Central pedestal and "blood-altar" in smaller shrine, from the north-east.
(b) Level V "temple" building, from the east.
XXIV.(a) Transverse log in wall-structure: north-east corner of Room 6.
(b) Movable pot-support from Room 5.
(c) Room 6, showing doorway to Room 7 partly blocked.
(d) Damaged "blood-altar" in Room 8.
XXV.(a) "Blood-altar" and fallen beams in Room 4.
(b) Trench "W". Stone foundations of Level V enclosure wall.
XXVI.(a) House at Level IVb in Area "CC", from the north-east.
(b) Room 10 at Level IVb.
XXVII. (a) House at Level IVa in Area "CC", from the north-east.
(b) Area "R". Clay pedestal for upright pillar and stone pavement approaching smaller shrine in Level IVb.
XXVIII. (a) Deposit of Level IVb pottery over north wall of Room 16 in Palace.
(b) Same deposit with vessels numbered.
XXIX.(a) Level IVb. Wood-framed hearth and clay pedestal containing charred stump of wooden pillar.
(b) Area " R ". Megaron and lustral chamber in Level IVa.
XXX. Surviving pottery from the Burnt Palace, Level V.
XXXI. Selected pottery from Level V.
XXXII. Two theriomorphic vases. From "U".
XXXIII. Selected pottery from Level IV.
XXXIV. Race de Chèvre de type mambrin du Proche Orient; (a) mâle, (b) femelle (Région de Gaziantep).

## PART I <br> ARCHITECTURE <br> by Seton Lloyd



Fig. A.1. Site-plan

## CHAPTER 1

## THE "BURNT PALACE"

In the Middle Bronze Age levels at Beycesultan a wider area of occupation was exposed by our excavations than in those of any other period. It would appear that in the Second Millennium b.c. the mound was already divided by a central depression into two separate elevations, ${ }^{1}$ and considerable exposures were made in both the eastern and western sections. Of the soundings, trenches and extended areas distinguished by letters of the alphabet in the site-plan (Fig. A.1) the following are relevant to the subject of this chapter.

On the eastern summit the main excavation came to be known as the "Palace Area". Occurring for the most part in Square C/5, this comprised an amalgamation of smaller areas and trenches, previously distinguished by the letters "AA", "BB", "CC", "E", "H", "J", "K", "L", "M", "N", "P" and "Y". Trench "E" was an extension of the palace area into square $\mathrm{C} / 6$, which encountered the walls of M.B.A. private houses. Trench "D", to the south-west of the Palace Area, exposed part of the main approach to the building. Sounding "W", far to the south on the six-metre contour in Square E/5, located the position of the M.B.A. enclosure-wall. On the western summit, the existence of M.B.A. public buildings was discovered during a sounding in Area "A" and their extent ascertained by means of Trench "S". In Area " R ", on the northern edge of the settlement, pairs of religious sanctuaries dating from the M.B.A. were found in Levels V and IV. Sounding " $U$ ", in the saddle between the two hills, also revealed fragmentary walls of the M.B.A. The chronology of our excavations in these various areas, during successive seasons, has been tabulated in the previous volume. ${ }^{2}$

The "Burnt Palace", whose south-eastern corner was encountered early in our first season (1954) during operations in Trench "E" (Pl. Ia), occupies a large part of the eastern summit, approximately within the seventeen-metre contour-line. Before describing the remains in detail, it should be noted that, for the purpose of surveying, the north-south grid of hundred-metre squares used in the contour-map (Fig. A.l) proved inconvenient where the palace was concerned. Its ruins were accordingly covered by an independent grid of ten-metre squares, set at a different angle, as may be understood from the diagram in Fig. A.2. It is these smaller squares, numbered from $\mathrm{A} / 1$ to $\mathrm{K} / 11$, to which reference will be made in describing the various parts of the building.

It will be seen then from the key-plan of the ruins as finally exposed, that

[^0]the total clearance of the building could not, for practical reasons, be completed. Its maximum extent could in fact only be determined positively in four detached sectors. On the north side, an outside wall was exposed in Squares G/7, G/6 and G/5. Another seemed to be located in Squares E/3, $\mathrm{E} / 2$ and $\mathrm{E} / 1$; and between these two a re-entrant angle in the façade of the building must be assumed. Trench " N ", which ran northward from this point as far as Square K/1, was carried down to Level VI without encountering any further architectural remains of the relevant period (Level V). On the west side, Trench " K " exposed an outside wall in Square $\mathrm{E} / 8$. And

finally, on the south side, one sees how the palace was enclosed, partly by a double wall with narrow chambers between, which gave the southeast wing extra protection. In the south-east corner one of these outer walls is seen to return in a northerly direction: but after the east entrance is reached in Square $B / 1$, three chambers in Squares $\mathrm{C} / 1, \mathrm{D} / 1$ and $\mathrm{E} / 1$ remain incomplete and the eastward extension of this wing is not determined.

Our failure to complete the clearance of the whole building was explained by practical difficulties. Dumped earth accumulated in three main locations and, in the absence of a Decauville railway, could not be removed. It must be remembered in this connection that the foundations of the palace were located at a depth of more than seven metres beneath the summit of the mound and buried for the most part beneath the remains of later occupations at four
or more building-levels. While the Late Bronze Age and other post-palace levels were being excavated, therefore, areas had to be chosen for the disposal of earth where it was least likely to render important parts of the M.B.A. building inaccessible. But the extent and lay-out of the palace itself was still largely a matter of guess-work. Of the three points chosen, one was where the central courtyard could be assumed to be located; and this assumption proved to have been correct. Another was over the south-west corner of the area, where the slope of the ground seemed to make it improbable that architectural remains of any great importance could have survived. The third and fourth were respectively to the east and west of what we estimated to be the limits of the building on those sides: but in these two cases it is now evident that we underestimated its extent by some metres. The outcome of all this would appear to be that on the north, east and west sides, parts of a single range of chambers have in each case remained unexcavated. In the south-west corner a larger section of the building has not been examined, and this unfortunately seems likely to have included the main entrance to the Palace from that direction. Its position is, however, indicated by the appearance in Trench "D" (Squares D/10 and D/9) of a built-up ramp by which it was evidently approached. In regard to the possibility of the palace having stood in its own enclosure, surrounded by a protective wall or fortification, it may be noted that the lightly-built enclosure walls whose existence is indicated in Trenches "N" and "K" (Fig. A.2, Squares I/2 and E/9) date from the Late Bronze Age. Beyond these there was no evidence of any arrangement for defence.

The parts of the Burnt Palace excavated cover an area of approximately $70 \times 55 \mathrm{~m}$. One would imagine its maximum dimension, if the excavation was completed, to be a little more than 80 m . For easy reference the 47 chambers or courts exposed (numbered in Fig. A.3) were divided arbitrarily into three groups, described as "wings"; a "west wing" comprising those to the west of the central courtyard, an "east wing" to the east of it and a "southeast wing" consisting in that part of the building which was excavated in our first season (1954). These three sections of the building were in fact more than otherwise distinguished by the varying states of preservation in which the ruins survived. These notable discrepancies will presently be attributed to the activities of a squatter population, returning to take up their abode among the ruins, when some time had elapsed after the destruction of the palace. We found that their activities had mainly been confined to the area covered by the east wing. Since this comprised some of the more important reception rooms, it is possible that it had been more effectively razed to the ground than other parts of the building. Certainly they seemed to have had little difficulty in levelling the remnants of the walls to make a building-site for their own modest houses. By contrast, in the south-east wing the burnt remnants of the old walls remained standing almost to the surface of the mound; and it was clear that this part of the site had not been re-occupied after the fire. Conditions in the west wing were very similar; and here we found the best-preserved structure of all. Only here and there, as will
presently be explained, a fallen upper floor provided a firm and flat surface on which later walls could be built.

The method employed in the construction of the Palace-a framework of timber, filled with sun-dried brick and supported on a substructure of stone and timber-has remained a common practice in Anatolia from the Middle Bronze Age until the present day. It has been referred to at some length in earlier reports on these excavations and is the subject of a separate section in


Fig. A.3. General Plan of Palace with rooms numbered
the present volume. The devastating effects of a general conflagration in such a building have also been described in preliminary notices and can in fact without difficulty be imagined (Pl. Ib). Earlier excavators have seen the traces of such a disaster, for instance in the remains of the royal archive chambers on Büyükkale at Boğazköy or in the Syro-Hittite palace at Tayinat in the Orontes valley, where the structural timber had disintegrated, leaving isolated panels of burnt brickwork. The fact that in this Beycesultan building the destruction was in many places even more complete, we have attributed
partly to the free use of timber reinforcement in the stone foundations and partly to the puzzling introduction of sub-pavement air-ducts around the bases of the walls, to which we shall presently refer. Certainly it was not uncommon to find walls denuded actually down to pavement level, the brickwork having disintegrated into red dust and the stone of the substructure calcined into piles of white powder. Elsewhere the heat had been sufficient to vitrify the brickwork, which survived in shapeless lumps of yellow "clinker". This being so, it was surprising that so much fallen timber had survived, often retaining its approximate shape in carbonized form.

Another peculiarity of the palace, which added to the difficulty which we encountered in excavating its remains, was the absence of any properly flattened or easily recognizable floor-surface, even in some of the more important reception-rooms. In the upper storey it is now known that the floors were covered with a bed of rushes, frequently renewed: but on the ground floor only the most half-hearted attempt seemed in many cases to have been made to create a level earth floor. One possible explanation of this, to which we have given serious consideration, is that they were covered with some sort of woven textile; and the presence, near the corner of one chamber (No. 31) of a layer of fibrous ashes could be taken to support this suggestion. But the character of pavements in open courts and other less important areas was equally hard to explain. Here logs of wood were laid, about 50 cm . apart with a rubble of fairly large stones in between. But any traces of an earth or clay covering, to make the resulting surface convenient to walk on, could seldom be found. These were only some of the unusual circumstances and difficulties which we encountered during the excavation. Others will become apparent as our detailed description of the ruins proceeds. For this purpose, if the various sections of the building are discussed in approximately the order in which they were excavated, the enigmas by which we were faced and their gradual interpretation may be recorded in a more logical sequence. We shall start therefore with the south-east wing, which was mostly excavated in 1954 (Pl. IIa).

## The South-east $\mathrm{W}_{\text {Ing }}{ }^{1}$

It will be seen from the main plan (Fig. A.4) that in this part of the building there occur two or three main entrances which have been located. One, through the southern outer wall in Square A/5, seems to have the character of a service entrance, since it leads into an open courtyard (No. 8, only partially excavated), and so into a group of rooms used by servants. The other, in Square B/1, has an entirely different character. Almost before excavating one could have anticipated an important entrance to the palace at this point. For the contour-map itself indicates the presence of a ramp or carriage-way, coming from the direction of the river-crossing and traversing the flank of the

[^1]mound towards the south-east corner of the building. This was the point at which the ruins of the palace were first encountered in 1954: and it was unfortunate that it also corresponded with a location where some subsidence in the side of the mound had removed a small portion of the building. A narrow terrace had here separated the palace walls from the contemporary privatehouses whose walls were later discovered in Trench "E" (Fig. A.4): and this had collapsed, carrying with it the corner of the building. Traces of the approach-road however reappeared in the centre of Square B/l, and here was the much-denuded remnant of a main doorway, placed in a re-entrant angle of the outside wall. It led to a small vestibule (No. 16a), once more so greatly denuded that little could be inferred save for the existence of some sort of porch. This vestibule, together with the lustral chamber to which it led through a centrally placed doorway and the square reception chamber beyond, form an important unit in the plan and must now be described in detail. But first, some reference should be made to the broad principles of wall-construction in the palace, with which at this stage in the excavations we were already becoming familiar.

The average thickness of the walls, then, was between 80 cm . and 90 cm . (Fig. A.5). First came a substructure, approximately 65 cm . high, built of fairly large undressed stones and reinforced at one or more points in its height with pairs of runner-beams, flush with the faces of the wall on either side. Another pair of beams, tied together with short cross-pieces, made a seating on top of the stone for the brick structure above. The brickwork, in the form in which it survived, was divided into panels 1.00 m . to 1.50 m . long by 30 cm . gaps, in which had stood the upright posts of the timber framing. Three such posts, side-by-side in each gap, would have accounted for the thickness of the wall: or they may have been arranged in pairs with a space between. The brick panels themselves were also strengthened with runnerbeams at intervals of three or four courses in their height. The base of the substructure must have been laid in a prepared trench, about 60 cm . deep, so that the beginning of the brickwork came level with the floor-line of the rooms. But the foundation structure was less simple than this would make it seem. For now also we had become familiar with the device which, for want of a better phrase, we must from now onwards describe as an "air-duct". The trench in which the foundations were laid had been cut wide enough to allow for a space some 60 cm . wide on one or both sides of the wall, and these spaces were roofed over at floor-level with small wooden beams about 50 60 cm . apart. In this way a small, sub-pavement passage was created along the base of the walls inside certain of the rooms, and these passages seemed to be connected with each other beneath the thresholds of the doorways. Some attempt will be made in another section of this volume to estimate the purpose of this structural device. For the moment we must content ourselves with recording its occurrence in various chambers and the irrefutable evidence for its existence. We must also recall the fact that in open courts and chambers which were too small or unimportant to warrant the use of these ducts, "basic" floors were laid, level with the bottom of the stone foundations,

and covered with rough stone "cobbles". The air-ducts themselves were also paved in this way.

## Room 16a

The generalization in a previous paragraph regarding the uneven surface of earth floors in the palace cannot, as it happens, be applied to the group of rooms which we are about to discuss. That in Room 16a was finished in clay and well levelled. There was evidence of an air-duct along the base of


Fig. A.5. Wall construction in Court 1 (Palace)
the west wall, and the stones of the substructure had rolled out into this, bringing the wall down with them. There was, as has been said, a door in the centre of the west wall, leading into Room 16, and its heavy clay threshold had also dropped sideways into the duct, where it lay almost intact, tilted at a sharp angle. A third door, leading northward, could also be assumed from the absence of wall-debris, though both its jambs had disappeared. The east wall was divided by post-holes into panels 90 cm . wide and plastered on both sides. This fact and the survival of an angle in the
plaster at one end of the outer face, proved that the eastern limit of the building had not here been reached.

## Room 16 ("Lustral Chamber")

This room (foreground of Pl . IIb) had a distinctive character and a fairly obvious function, as an anteroom for lustration before entering the main reception room (No. 10) to the south. The floor was heavily plastered with clay and burnt hard in the fire. Immediately inside the east doorway, a "lustral area" was sunk 25 cm . beneath the normal floor-level and two shallow steps led out of it on three sides. It was slightly irregularly shaped and measured $3.00 \times 2.75 \mathrm{~m}$. On its central axis, contingent to the lower step, a tiny rectangular platform made of stones set in clay must have provided a base for a wooden post supporting the roof. The plan would suggest two of these; but the position of the second could not be found. Around the base of the walls there was a formal arrangement of pithos water-containers; four against the north wall and three against the south. These vessels (Type V 28) had a diameter of 70 cm . and must have stood about 1.25 m . above the pavement since their bases were set in low square pedestals of crude brick. It was clear that their weight had rested on the bridging over the air-ducts and into these they had collapsed in fragments. It will be seen in the plan that the north wall of this room is shown solidly "cross-hatched". This convention is used here and elsewhere when the line of the wall was certain but the positions of the post-holes inconclusive. In the west wall a central doorway is attested leading to Room 19. A central door in the south wall could also be reconstructed, though much interference was here caused by a grain-storage pit, intrusive from Level IV above. Fragments of two small pottery jars had fallen with the pavement from a position near the east jamb of the south doorway. Parallel with the west jamb of the same door, a large beam, which must have been part of the bridging over the air-duct ran directly below the plaster of the floor and seemed to continue halfway across the room, perhaps to provide a bearing for the missing roof-support.

## Room 10

This chamber (Pl. IIIa) had the character of an important receptionroom. At 2.30 m . from the centre of the west wall, a hearth measuring 1.60 m . square was built up in clay over a basis of rubble to a height of 8 cm . above the clay pavement (Pl. IIIb). Overlying this and elsewhere in the room were beams fallen from the ceiling in a well-preserved state of carbonization. They included one, with a diameter of 40 cm . in section, which might well have been a fragment of a wooden column. A section of masonry three metres long in the centre of the south wall remained standing to a height of almost two metres. It was at the foot of this on the north side that the existence of an air-duct was for the first time conclusively proved by the survival of the wooden bridging which had carried the pavement over it. To
make the proof more complete, in this trench also were found sheets of plaster slipped down from the wall above and standing side-by-side on their edges like a pack of card (Fig. A.6). They showed that the wall-faces of the room had been white-washed, and that this in part had been overlaid with red paint, though in this case no pattern in the painting could be distinguished. At the western end of the south wall the presence of a door could be detected, leading into Room 15. Its outline was indicated by the cobbled pavement of the air-duct which must have passed beneath its threshold.


Fig. A.6. Remnants of wall-painting in Room 10

## Room 15

This compartment was unfortunately truncated by the subsidence in the corner of the building. A thickening of the wall on the south side, otherwise unexplained, could be taken to have supported a stairway leading to the roof. In the plan another short stair is suggested, giving access at this point to the termination of the air-duct. The only evidence for this was a much-worn pivot-stone set in the air-duct pavement at this point. In the south-west corner of the compartment a small section of the original clay pavement was for once well preserved and upon it, somewhat distorted by the fire, lay four small and rather crude pottery vessels-two bowls and two simple jugs-of which the only significance lies in the fact that, in the whole of the palace excavations, over a period of six years, these were the only portable objects of any sort found in situ on the pavement of any chamber ( Pl . XXXb).

The western door of Room 16 introduced one to a group of three compartments whose purpose was clearly service and storage. No. 19 was a small room without air-ducts, its uneven earth pavement, owing to the eastward slope of the site, being some centimetres higher than that of the lustral chamber. At various points about seven crude storage-jars of different sizes were sunk to their mouths beneath the pavement. South of this and accessible from it were two long narrow storage-chambers (c. $12.50 \times 1.50 \mathrm{~m}$.). Having cobbled pavements at "basic" level, these must have been approached by a flight of at least four steps. The only conspicuous feature was in the centre of No. 14, where a huge slab of ceiling material, almost two metres in diameter, had fallen from above and stood intact, leaning against the east wall (background of Pl . IVa). Its section consisted in 25 cm . of hardened clay, which had on the (presumably) upper side been no less than seven times replastered, sometimes with a free admixture of chopped reeds (Pl. IVb).

## Room 9

To the west of the two storage-chambers the plan grew excessively complicated. In the north-west corner of No. 4, a doorway led westward, bringing one into a small compartment (No. 9) at "basic" pavement level (Pls. IVa and Va ). Its west side was occupied by the remains of a brick stairway, 1.25 m . wide, which must have led up to the roof. The remainder of the room, except for the approach from the door to the beginning of the stairway, was paved with clay at a level 60 cm . above the "basic" pavement and there was a plastered earth-face between the two. Of the stairway four steps of mud-brick survived, one of them a "winder", and the remainder seemed to have been supported on solid brickwork, strengthened with wood, much of which was well preserved (Fig. A.7). ${ }^{1}$ In the centre of the raised floor there was an oval-shaped hole, $2.00 \mathrm{~m} . \times 1.50 \mathrm{~m}$. wide and over 1 m . deep, in the sides of which one could see the marks of an implement with which it had been excavated. Significantly, this cavity was filled to its full depth with burnt debris, including fragments of burnt timber fallen from the roof, which lay partly in the hole and partly on the pavement beside it. From this one could infer that it had been excavated shortly before the fire and still remained open at the time when the latter occurred. Our own further inference was that the raised floor in this room had excited the suspicion of looters in search of hidden treasure, before the palace was set on fire. Such preliminary looting would, we thought, explain the emptiness of the building where objects were concerned. Nevertheless, one of the few large objects recovered intact from the ruins of the palace was found during the clearance of this room. It was the terracotta drum shown in Pl. VIa (and elsewhere), which lay among the debris of the upper structure, as though fallen from above.

[^2]

Fig. A.7. Palace stairway between Rooms 2 and 9

## Room 2 and Small Stairway

The southern wall-face of Room 9 consisted of heavy plaster with only burnt debris behind it. This was partly explained when we discovered that the adjoining compartment (to the north of Room 2), also contained a tiny staircase (left in Pl. Va). This had evidently been partly constructed of wood, for the fire had here burnt fiercely and the architectural remains were difficult to disentangle. The threshold of the door leading to Room 2 and the adjoining south-east corner of the compartment were paved with cobbles at "basic" level. In its centre were two detached piers, each having the dimensions of a single brick, which must have served as newels for the stair. The space behind them was packed tightly with the calcined remains of what must have been a limestone stair, the back of which presented a plastered wall-face to Room 9. On the west side of this compartment, a complicated arrangement of beams in the masonry suggested (Fig. A.7) that the little stairway had also given access to a structure in the adjoining room on the west side (No. 1) which will presently be described. Room 2 had a cobbled floor at "basic" level, where, beneath a heavy covering of fallen roof-beams signs could again be seen of a looter's excavations.

## Court 1

This was an open court, perhaps with the character of a light-well. Having come to this conclusion, we were greatly surprised by the absence of any pavement. The floor consisted of an irregular earth surface, which must have become a sea of mud after rain. And indeed, one doubted if the court could have had any purpose save for that of admitting light. Across its centre was a raised structure of masonry, as usual heavily reinforced with wooden beams, and with some traces of brickwork at the west end, standing to a maximum height of 90 cm . (background of $\mathrm{Pl} . \mathrm{Va}$ ). Set in the fabric of this structure and evidently held in place by the timbers were the empty impressions of two circular containers, with diameters respectively of 1.50 and 2.00 m . Since such containers, if they were composed of any material other than metal, would have been hardly worth removing, we were driven to conclude that they had been copper cisterns for storing wine or water. The smaller cistern had been placed 52 cm . higher than the larger, perhaps in order that the rims of both should be level with the upper surface of the structure in which they were set, and to which, as we now discovered, access was obtained from the small stairway discussed in the previous paragraph. It was found that smaller flights of steps had led from it, both to the top of the cisterns and to the floor beneath. The presence of a third flight was suspected, leading down to the floor on the south side of the cisterns.

At the northern end of Court $1(\mathrm{Pl} . \mathrm{Vb})$ there occurred one of the most complicated and puzzling pieces of construction in the whole building. Here the earth pavement of the court rose abruptly, though unevenly, to a sort of terrace, almost 1 m . above the "basic" pavement level. This terrace covered what one would have been inclined to take for an abnormally wide airduct, had it not been supported beneath on a bridging of transverse sleeperwalls. These were found projecting from the burnt debris which filled the duct when the terrace pavement collapsed, and were impossible to explain. The western end of the terrace, meanwhile, disappeared behind a projecting screen-wall, which enclosed an open vestibule leading to Room 20 (the "Painted Hall"). Here also the floor had been entirely supported on wooden beams, which will be referred to in a later connection. The structure of the screen-wall was unusually well preserved, and in one of its post-holes we were not only able to record the use of three posts side-by-side, but saw how the bottom end of one post was attached to the runner-beam beneath by a wooden peg 3 cm . in diameter ( $\mathrm{Pl} . \mathrm{VIb}$ ). At the east end of the terrace, a pithos water-container similar to those in Room 16, was set upright in the pavement.

Rooms 12, 7 and 13
A passage (No. 12) with a high-level pavement led southward from the screened vestibule to Room 7. The latter was paved with cobbles at "basic" level and accordingly had to be approached by steps, one of which had been paved with a single slab of limestone (Pl. VIc). The filling of this room, in relation to the structure of its west wall, was extremely difficult to understand.

In a section cut down to the original cobble pavement, first came a confusion of burnt debris, including some carbonized timber, about 25 cm . deep: then a thick overlay of the white powder created by calcined stone. Next came 40 cm . of blackened earth, from which at regular intervals projected the ends of wooden beams up to 25 cm . in diameter, and bearing upon these, regularly spaced panels of brickwork with post-holes between. This and certain other indications were taken by us to suggest that we were dealing with the fallen remains of some upper structure and that Room 7 was some sort of verandah, with its west side open and supported by beams and posts. But we contented ourselves in the preliminary publication with a reproduction of the section recorded by our architect (AS, VI, p. 115, Fig. 7; here Fig. A.8). This interpretation of Room 7 (of which the south wall had been entirely quarried away), is confirmed by an examination of Room 13. This again is evidently an


Fig. A.8. Fallen upper structure of wall in Room 13
open court; and all but the northern end of it is paved with cobbles, which are given stability by wooden beams laid amongst them. In the centre we once more found the circular emplacement of a metal cistern with a diameter of 1.50 m ., and were able to reconstruct a tiny stairway leading up to a small platform from which it was filled. Much of the south-east corner of this court had suffered from the quarrying activities of later builders in search of stone. It was entered from a wide open courtyard (No. 8), already referred to, of which the only notable feature was a much denuded gateway in the outer wall. From here also came our only unbroken example of a pithos water-container similar to those found in fragments in Room 16 (Pl. VIIa).

In the south-east wing it only remains to mention the two narrow chambers enclosed by the double wall on the south side of the building (No. 5). These also were paved with cobbles at "basic" pavement level and were accessible through a small vestibule (No. 6) from Room 7. The outer en-closure-wall seemed to have been built entirely of stone and showed no signs
of a brick upper structure. Outside it to the south we uncovered the beginnings of a paved area, where cobbles of varying sizes were as usual held in place by occasional wooden beams. Its purpose was not clear (Pl. VIIb).

## Room 20 ("Painted Hall")

This chamber was partially excavated in 1955, the clearance of its northern and western parts being completed in 1959. The eastern and more particularly the southern wall were well-preserved and could be traced in spite of subsidence into the air-duct which surrounded the room. The former showed evidence of two doorways, symmetrically placed, leading eastward. One led into the vestibule, No. 19 already described; here there was a change in level of 35 cm . and at least two steps must accordingly have been provided. The second door led by way of another vestibule (No. 18) into the east wing. The south wall, whose southern face had been reached in 1954, behind the "terrace" in Court 1, produced evidence to suggest that this again was one of the main reception-rooms of the palace. Here, as in the case of the south wall in Room 10, large fragments of plaster were found, either adhering to the collapsed wall or fallen into the air-duct (Pl. VIIIa): and it could be seen that they were painted in two colours on a white ground. No traces of figured decoration could be found: but it was possible to see that the base of the wall had been painted in horizontal bands, approximately 50 cm . deep, the first in red, the second in yellow and the third, which may have continued upwards, white.

In the "Painted Hall" we were for the first time bewildered by the total absence of any properly prepared floor-surface. Since the room measured $9 \times 11 \mathrm{~m}$., much time was spent in a search for column-bases, post-holes or any other indication of how the roof was supported. But, as all that we had to follow was a barely perceptible line of trodden earth, frequently interrupted by the intrusion from a later building-level of grain-storage pits, this met with no success. The same difficulty was encountered to an even greater extent in determining the western limits of the chamber and its relationship to adjoining units of the plan on that side. In fact this small area of architectural remains in Square $\mathrm{C} / 4$ created more problems and difficulties in excavation than any other part of the building (Pl. VIIIb). The true situation was not revealed until further clearances were made to the west in 1959. ${ }^{1}$ We then came to understand that, like other compartments facing the central courtyard, this chamber was partly open to the air on its west side. It was therefore also directly accessible from the courtyard. And here another complication arose, since the floor of the hall was almost one metre higher than the basic pavement

[^3]of the latter, and the two were connected by a curiously primitive earthen ramp, 2.50 m . wide. The fragment of a wooden column found in 1954 (left in Pl. VIIIb), had lain near the foot of this ramp on the pebble- and sherd-strewn surface of the low-lying pavement: another was found in a similar position, 4 m . to the north-west, crushed beneath the rush-strewn floor of a collapsed upper storey. In the plan, the "raft" of carbonized timbers set in the pavement between these two columns must have supported the end of the east wall to Room 47. The whole of this area provides an example of the extraordinary building-methods employed in the palace. For, on either side of the ramp leading into the "Painted Hall", the transition from one level to another is effected merely by a bank of earth, without any apparent retainingwalls. ${ }^{1}$

## The East Wing

The part of the building which we have now to describe was the least well-preserved of any excavated (Pl. IXa). Since many metres of later occupation had to be cleared and recorded in order to obtain access to it, the disappointment which this occasioned to the excavators will easily be understood. Such remnants of the walls as survived after the fire had been razed to floor-level by a returning population and such stone as was accessible had been used by these "squatters" to build their own impoverished dwellings. The areas not actually built over had been used for grain storage, and the palace ruins were honeycombed with circular pits, up to 3.50 m . in diameter, dug for this purpose down to a depth of several metres. Apart from the "Painted Hall", eleven fairly large chambers could be counted and a range of four or more on the east side, not completely excavated. The largest, No. 45, as will presently be seen, was wide enough for its raised pavement to serve as an emplacement for a complete dwelling-house in the subsequent "squatter" period. Bigger rooms of this sort were provided with an air-duct around the base of the walls: others were paved at basic level with cobbles, held in place by parallel rows of tree-trunks. Owing to their disposition in the plan, these could reliably be identified as open courts serving as light-wells.

Room 23
This is one of the most perplexing compartments in the eastern group and its remains the most difficult to interpret (Pl. IXb). After excavation, the appearance which it presented was that of a solid mass of semi-calcined stonework, standing up to approximately the height of the pavement in the adjoining "Painted Hall". But it was found to be penetrated by as many as seven large storage-pits of a later period: and it was the clearing of these which gave the first clue to the anatomy of the deposit. A pit in the southern half showed that, at a depth of rather less than one metre, it was paved with evenly

[^4]laid cobbles, whereas another, near the north wall, showed fallen stonework continuing down to foundation level. By the enlargement of these pits it was also possible to fix the position of wall-faces on the north, east and south sides of the chamber. Next, an examination of the line on which the west wall should have been built showed that none had existed and that this side of the chamber must have been open to the central courtyard. But a little to the west of this line, at the north end, we found a mass of fallen brickwork (left in Pl. IXb), partly intact, which must have formed part of some upper structure. This completed the evidence available and we were left to consider its meaning. A compartment measuring $9 \times 7 \mathrm{~m}$. stood open on one side to a courtyard, one half paved with cobbles at courtyard level and the whole filled to a depth of one metre with the debris of a stone structure which had occupied the other half. Almost at once we were struck by the similarity of this situation to that which we had observed in the small compartment to the north of Room 2, where it was found that a staircase had collapsed. There then seemed little reason why the same interpretation should not be applied to the larger compartment with which we were dealing. By analogy with Minoan palaces (other comparable features of which we had already been considering), a grand stairway might be expected, leading out of the main courtyard and giving access to an upper storey. And indeed, when in 1959 the central layout of the palace had been ascertained, it was found that such a stairway, starting on the northern side of Room 23, would be set directly upon the main axis of the building, facing the approach to the courtyard from the west entrance. Only the fallen brick structure then remained unexplained.


Fig. A.9. Section through Room 48

## Rooms 48 and 49

North of the supposed stairway chamber, the structural remains became more and more fragmentary and the plan of the building less easy to understand. Room 48, like all those facing the central courtyard, remained open to the air on one side. But around the three remaining sides an air-duct made a conspicuous feature : for much of the bridging over it had survived and its cross-beams, tilted at an angle when the wall collapsed, projected above the level of the raised floor. Once more, the transition from this raised floor to the low pavement of the courtyard on the west side was effected merely by an irregular bank of hardened earth. Here, as elsewhere in the east wing, the conjectural lines of the walls themselves are shown in the plan with dotted
lines. Their remains consisted of long piles of calcined stone. Across this room a careful section was recorded (Fig. A.9) showing two stages in the subsequent levelling of the site by squatters.

Room 49 extended beyond the limits of the excavation. Unlike No. 48 it was paved with cobbles at a level 30 cm . above the courtyard and some very large tree-trunks held them in position. Its east wall had been almost completely quarried away, but must originally have formed a reentrant angle in the outside limits of the building on this side.

## Rooms 46 and 45

We are now reaching an area so honeycombed with later storage-pits and generally denuded by later occupations, that hardly more than the bare outline of the rooms could be recovered. No. 46 was a large cobbled courtyard, perhaps having an entry to the building on its north side. A fall of brickwork also suggested some minor structure on its north-east corner. Room 45 to the east of this had the size and character of a more important reception-chamber and a raised floor enabled it to be provided with an airduct all round the base of the walls. On the south side this was particularly well preserved, with much of the bridging still in place ( $\mathrm{Pl} . \mathrm{Xa}$ ). At the east end of the room, the outward spread of the basic pavement and remnants of brickwork again suggested some substantial structure in its north-east corner ( Pl . Xb).

## Rooms 22, 21, 18 and 17

Of these rooms No. 22 only showed any distinctive character. It was a light-well, heavily paved with parallel tree-trunks and stone, but no apparent provision for drainage. The adjoining room, No. 21, having a raised pavement, steps were constructed in the doorway between the two. Here and there surviving fragments of brickwork enabled us to reconstruct the alignment of the walls and the position of other doorways could be assumed with a minimum of uncertainty. In Rooms 17 (Pl. XIa) and 18 (Pl. XIb) the remains of the under-pavement air-passages could be convincingly photographed.

## The West Wing

This name was given to an area west of the central courtyard, measuring approximately $30 \times 20 \mathrm{~m}$., which was excavated in 1959 (Pl. XIIa). A fairly large part of this area, covering almost the whole of Square $\mathrm{F} / 6$ and extending a little beyond, had suffered from the quarrying activities of the squatter population in Level IV and hardly enough remained to reconstruct the lines of the walls. Elsewhere, however, the walls were even better preserved than those in the south-east wing and provided a great deal of new information about the structural practices of the palace builders. There were two primary reasons for this. In the first place, the part of the building with which we were now dealing, though it included two extremely large
public chambers (Nos. 31 and 28), was otherwise divided up into small rooms of a residential character, none of them more than 5 m . square. This left no room for the air-ducts which had so weakened the foundations of walls elsewhere, and their stone substructures almost everywhere survived intact. A second factor was created by a phenomenon of which we had previously seen evidence in the south-east corner of the courtyard, but had been unable to interpret its meaning. Over the whole of this wing an upper storey had existed, with earthen floors, supported on wooden beams. At a certain stage in the conflagration, the supporting beams having burnt through, these upper floors had fallen almost intact into the rooms beneath, "blanketing" the fire beneath and thereby preserving a good deal of the brickwork. They soon came to be easily recognizable by the deep bed of straw or rushes with which their upper side was covered. But it may be understood that, in the process of excavating, their first appearance, suspended on burnt debris a few centimetres above the pavements of ground-floor rooms, was perplexing, to say the least.

## Room 31

A small part of this room had been revealed by one of the five-metre search-trenches (" K "), made in our second season, in order to determine the westward extent of the palace. Proceeding westward in Square $\mathrm{D} / 6$, this trench had brought to light, first, the well-preserved northern wall of Room 29, as far as its north-west corner. Next it cut across Room 30, which appeared to be paved at a deeper level, and beyond this reached Room 31,


Fig. A.10. Wall construction in Room 31 (Palace)
whose east wall was well enough preserved perfectly to illustrate the construction of an air-duct running along its inner face beneath the rush-strewn pavement. Its west wall also was provisionally located. ${ }^{1}$

Room 31, which measured $9 \times 7 \mathrm{~m}$., had the obvious function of a large ante-room at the west entrance to the palace. On its south side, one plastered jamb and the stone threshold were located of a doorway placed on its central axis. The north wall also remained in part standing to a height of 1 m . and a doorway in it, leading to Room 34, was well preserved. On the east side, an opening 4.75 m . wide led into the formal vestibule (No. 32) which will presently be described. Its pavement was easily identified by a deep bedding of carbonized rushes-one of the few instances in which this amenity had been provided for a ground-floor chamber. It was also provided on all four sides with an air-duct beneath the pavement. Some difficulty must have been encountered in continuing this duct across the opening which led to Room 32, since the latter was paved at a lower level and a steep ramp led down into it. Two sub-pavement constructions of stone facing this opening could have been explained as supports for wooden pillars, had they been more symmetrically placed. Finally it should be added that the particularly well-preserved section of walling in the south-east corner, first found and drawn in 1955 ( cf. footnote 1, below), and now carefully dismantled, provided the first instance of the tranverse timber foundations which we afterwards concluded to have been in general use throughout the building.

## Room 32

This chamber provided one of the most interesting examples of formal architectural design, emphasizing the main axis of the plan. Measuring only 4.50 m . square, it was provided on either side with a pair of rectangular recesses, apparently paved at a level about 55 cm . above the floor. The walls forming the northern pair of recesses, happening to have been protected from the fire by a heavy fall of material from the upper storey, were better preserved than those in any other part of the building, the carbonized timbers remaining in situ and the brickwork being no more than blackened by the smoke (Pl. XIIIa). An exact structural analysis of the remains could accordingly be made, and certain features of contemporary practice in wallconstruction, which had hitherto only been guessed at, could now be positively recorded (Fig. A.11). First then, one sees here clearly illustrated an example of the timber foundations referred to in a previous paragraph. The first courses of stone are laid upon logs of wood, laid side-by-side transversely in a foundation trench which must have been cut sufficiently wide to allow them to project considerably on either side. Next one sees how, contrary to our earlier assumption, at the intersection of two walls a pillar of brick occurs,

[^5]flanked on each side by interstices for the upright elements of the timber framework. One also sees how, at the base of these interstices where the timber framing begins, one, two or even three horizontal logs are inserted as packing, perhaps in the process of adjusting the vertical post above to its correct height. Finally we now know that in each of these interstices there was a pair of such vertical posts with a space between them (not three in the thickness of the wall as previously suspected). Their projection into the recesses in Room 32 necessitated the raising of their pavements.

The pavement in Room 32 was of trodden earth and extremely hard to distinguish, as little attempt had been made to level it. At its centre it reached the lowest point of any in this part of the building. In fact, one would have suspected the vestibule of having served the purpose of a lightwell, if there had been any provision for drainage.

## Room 28

This chamber which came to be known as the "Great Hall", acquires maximum importance from its position in the plan of the building. The west wall had been almost completely quarried away and a portion on the east side facing the central courtyard had to remain unexcavated. Nevertheless we were able to learn something of its curious appointments. In the first place, it was paved at a level as much as 1.35 m . higher than the vestibule (No. 32) through which it was entered on its west side. This necessitated its approach by way of a steep ramp, which carried one a third of the way across the room before reaching pavement level. There was no doubt that this entry had been subject to continual use, for its sloping threshold was composed of five large tree-trunks, laid longitudinally with stones between, the maximum diameter of each in section being 35 cm . Once more it proved impossible to ascertain how the vertical faces on either side of this ramp had been revetted. Another circumstance proved equally difficult to explain. On all three sides of the room excavated-north, west and south-the penetration of fallen debris to foundation level seemed to prove the existence of an air-duct running all round the base of the walls. But when the well-preserved east wall came to be excavated down to this level, we found that its transverse timber foundations consisted of huge tree-trunks, up to 70 cm . in diameter, projecting as much as 3 m . beyond the face of the wall. The same appeared to be true in the case of the west wall: and it seemed improbable, in this case, that the breadth of the air-duct could have corresponded with the projection of the foundations (Pl. XIIIb). The south wall produced another feature of great interest. Near its eastern end, a doorway 2.50 m . wide, led into an adjoining room (No. 29). This was provided with a substantial wooden threshold, consisting of three squared timbers laid longitudinally and supported on smaller cross-beams (Pl. XIVa). One of these, measuring 25 cm . square in section, was so well preserved in a carbonized state that one could distinguish the marks of an adze with which its upper face had been smoothed. Also, set into the timber near the eastern jamb of the door, were the decomposing remains of a cup-shaped copper fitting, about 15 cm . in diameter,
which can only have served as a socket for the pivot of the door itself. Just inside the doorway lay further fragments of well-preserved timber which must have formed part of the lintel or linings of the doorway. One of these was a plank, 68 cm . long by 40 cm . wide having a thickness of 6 cm . (Pl. XIVb). This was only partly carbonized and could without difficulty be raised from the floor upon which it lay. It could then be seen to be pierced by two pegholes, 50 cm . apart, measuring respectively $2 \times 4 \mathrm{~cm}$. and $2.5 \times 2 \mathrm{~cm}$. Around each hole was a circular depression 7 cm . in diameter, into which the ornamental head of the peg must have fitted. Surviving fragments of one peg showed that they were of wood. The significance of this find was clear. In spite of the size and pretentious character of this building, up to now no architectural ornament whatever had been found. Here was confirmation of the impression which we had already formed, that much of its embellishment must have been in wood. A fragment of the door itself also survived showing its framed or two-ply construction (Pl. XIVc).

A point of interest in connection with these timbers from the doorway leading to Room 29, was that they had remained standing until after the collapse of the upper storey. We have not hitherto mentioned that almost the whole area of Room 28 was covered by the fallen floor of a room above it (Pl. XVa). The undulating, rush-strewn surface of this floor was discovered during the early stages of the excavation, and its presence could not be explained, until it was shown to be suspended on burnt debris at an average height of $1 \cdot 10 \mathrm{~m}$. above the veritable floor of the ground-floor chamber. The doorway timbers, to which we have referred, lay prone upon the surface of this upper pavement (background in Pl. XVa). Elsewhere, intruding into Level IV, it had been used by squatters as an emplacement for a small hut or storeroom, built from the loose debris of the palace.

Between the high pavement of Room 28 and the central courtyard there was a difference in level of 60 cm . To provide access from one to the other therefore, the existence of a second ramp must be assumed, perhaps opposite that by which the chamber was entered.

## Rooms 33, 34, and 35

A doorway which we have already observed, leading northward from the ante-room, No. 31, brought one into a small room, No. 34, through which the residential chambers in the north-west corner of the buildings could be reached. An unusual feature of this doorway was that a large part of the actual door itself remained as it had been left, half open and still standing upright ( $\mathrm{Pl} . \mathrm{XVb}$ ). In its carbonized form it measured 1.05 m . high by 1.40 m . and had an average thickness of 5 cm . The grain of the wood was clear, running vertically from top to bottom, and, although a single plank of this breadth would be almost inconceivable, the closest scrutiny could not reveal a vertical joint. In addition one observed that the opening of the doorway measured 1.60 m . between plaster faces. In this vestibule there were also doors leading west and east into Rooms 35 and 33 respectively. The remains of the door of course rested upon the trodden earth pavement of

Room 34, which continued across the threshold: but as the other line of wall was reached, this was interrupted by the collapsed bridging of the air-duct in Room 31. It was here that surviving fragments of paving were found, thickly coated in fibrous ash, suggesting that it had been covered by some substance resembling felt. ${ }^{1}$

Room 34 was also provided with doors leading west and east to Rooms 35 and 33 respectively. Near the southern jamb of the latter we again found substantial fragments of an actual door, consisting of a plank 1.90 m . long and a post of equal length. In this room, like those adjoining it, there were the remains of a fallen upper floor and it was upon the upper surface of this that the door-timbers had fallen. Room 35 could be only partially excavated and appeared to differ in no way from its neighbour: Room 33 however was of considerable interest. Here the fallen upper floor proved to be in a remarkable state of preservation (Pl. XVIa), and, since the north and east walls of the room had been quarried away, it could conveniently be studied in section (above the workman's head in Pl. XVIb). It was found that the bedding of straw with which it was covered showed signs of having been frequently renewed, and in places it could be seen how it was deposited in bundles, roughly corded together. This "bedding" covered the upper floor of Room 33 to a depth of approximately 10 cm .; so there was no difficulty in collecting enough of it for specialist examination. It proved to be of great interest; for it was found to contain not only whole ears of wheat, undamaged by threshing, but a wide variety of weeds, unintentionally collected by the reapers. It is at present being made the subject of a study by Dr. H. Helbaek of Copenhagen, a preliminary notice of whose findings was appended to his recent article on carbonized grain from a later setting at Beycesultan. ${ }^{2}$

In rooms like these, in which the existence of an upper floor was attested, superimposed on the fallen floor itself one would have expected to find burnt timbers and other remains of the roof above. Strangely, this seemed very rarely to be the case. In this particular room however the straw bedding of the upper floor did appear to be covered by the carbonized remains of some wooden structure. What appeared to have fallen was a framework of narrow spars, circular in section, about 3 cm . thick and broken into lengths of about 15 cm . At first these were suspected of being the burnt remains of furniture: but as no jointing or ornament was apparent, we were led to conclude that they must have been roofing material.

Rooms 36, 37 and 38
Of the three rooms immediately to the north of those just described (Pl. XVIb), one long corridor-like chamber (No. 36) fell completely within the area already mentioned, which had suffered from the quarrying activities of the squatter population in Level IV. Its walls and pavement had

[^6]been largely removed, and barely enough remained of the former for their alignment to be determined. From its position in the plan however, it is possible to conclude that the function of this chamber was to give access to the rooms on either side, and that, being open to the sky it served the secondary purpose of admitting light to them. Certainly it showed no traces of a fallen upper floor or roof. For the rest, its only feature of interest was a fragment of tree-trunk, 1.90 m . long and 85 cm . in diameter, now lying prone upon an undisturbed area of pavement, which must certainly have been part of a wooden column (Pl. XVIIa). It may in fact well have supported the wide span of ceiling in the adjoining "Great Hall".

Room 57, to the west of the light-well, was one of the smallest excavated $(3.50 \times 2.50 \mathrm{~m}$.) . A circular depression in the pavement, measuring 1.50 m . in diameter, showed that it had contained a metal water-cistern, between which and the doorway on the north side of the room a low platform made it more accessible. Of the adjoining room to the west, No. 58, only a small part could be excavated.

## Rooms 41-44

Of these outer rooms on the north side of the building large sections had been removed by quarrying activities. Sufficient however remained to fix the alignment of the walls and to estimate the positions of the doorways (reconstructed in Fig. A.13). Of those in Room 43 one or more jambs survived. In all four rooms the fallen material of an upper floor was superimposed on a trodden earth pavement at ground-floor level. The wall enclosing them on the north side must have been the outer wall of the north-east wing. Its outer face seemed to be uninterrupted, except at a point opposite the cross wall which separated Rooms 43 and 44, where a small projecting pier occurred.

Room 40
A part of this room had originally been exposed by Trench " H " in 1955. Its shape was approximately indicated by the well-preserved remains of a fallen upper floor, deeply bedded in carbonized rushes (Pl. XVIIb). Between this and the trodden earth of the ground-floor pavement, there was a heavy deposit of burnt debris, and, protruding from this in the south-east corner, the remains of structural timbers from the junction of two walls. None of this was comprehensible in 1955; and indeed, the absence of an east wall to Room 40 can still only be explained by assuming that it remained open on this side to Room 39, which in its turn faced on to the central courtyard.

## Rooms south of the Central Courtyard

Owing to the dumping of earth in the earlier stages of the excavation, sections of the central courtyard could only be exposed on the east and south sides. In both cases conditions were extremely confused by the manner of
the building's destruction and the remains only partly comprehensible. In describing Rooms 20, 23 and 48, we have already explained our assumption that these remained open on the side facing the courtyard, where ramps or banks of trodden earth led down to a low-lying pavement. The latter, being thinly covered with pebbles and fragments of pottery, was fairly easily distinguishable, and was for the moment assumed to represent the floor of the courtyard itself. Further light was afterwards thrown on the situation by excavations to the south of the central area.

This operation, which constituted the final stage of our excavation in 1959, consisted in extending and deepening our original Trench " K ", in order to link up the two main areas of the excavation and complete the section across our building from east to west. The work started in Room 29; apparently another huge reception-chamber adjoining the "Great Hall" and accessible from it through a doorway, whose heavy wooden threshold has elsewhere been described. Proceeding eastwards, a second doorway was now discovered on the courtyard side and the whole area (No. 27) between this and the ramp leading to the "Painted Hall" (No. 20) could now be carefully examined. The pavement which we here encountered seemed in consistency to match that discovered on the eastern side of the courtyard, and sloped very gradually down to meet it. But on the north side it terminated suddenly in a species of "kerb", beyond which it reappeared at a level some 30 cm . lower. This kerb, being aligned with the limits of the courtyard itself, gave us reason to believe that we were dealing with an arcaded "verandah", which had surrounded the open court on this and perhaps on all four sides. When the south-east corner of the courtyard was reached, further evidence appeared to confirm this. Here, as early as 1955, we had come upon a large and well-preserved area of fallen upper floor, deeply covered with carbonized straw (Pl. XVIIIa, b), and this had temporarily been left completely undisturbed. Assuming as we must, that this floor had fallen more-or-less vertically from above, the question now arose as to what had been its original function. For it appeared to have been suspended directly above the south-eastern corner of the courtyard. Furthermore, projecting from the burnt structural debris beneath it, we came upon a huge tree-trunk, measuring more than 60 cm . in diameter, of the sort which elsewhere we had identified as the remains of a wooden column. Together, these discoveries seemed to us to provide adequate evidence for reconstructing, around the sides of the courtyard, some sort of "covered way" supported on wooden columns. Such an architectural feature would, after all, be in keeping with the traditional practices of Anatolian builders and with their timber buildings generally.

To the south of the courtyard, one room (No. 47) remains to be described. This once more showed all the curious features now known to be characteristic of chambers facing on to the central court, including an air duct around the walls on three sides, a fourth side open to the court, with a bank of earth marking the transition from its high pavement to that beneath. It too had a fallen upper floor, matching that of the "verandah" on to which its north side must have faced.

## Trench "D" (Fig. A.12)

Significantly associated with the palace ruins were finds in this trench, excavated in 1955. As originally cut, it ran due east and west in Squares $\mathrm{D}-\mathrm{C} / 11,12$, and 13 and was later extended southward to Square B/10. Though occurring at a considerably greater depth, the building remains here were identified by the character of the burnt debris and by ceramic evidence as contemporary with Level V. Running parallel to the trench on its south side was part of an earthen ramp, approximately 1.50 m . of its breadth being exposed. On its south side it was supported by a retaining wall of roughly piled stones, crowned a little above pavement level with a more evenly laid coping (foreground of Pl . XIXa). The base of the ramp seemed to begin at a level of 15.60 m . above datum, which would be about 1.40 m . below the


Fig. A.12. Plan of Trench "D"
average level of occupation in the west wing of the palace. A length of about 6.00 m . had survived, rising in that distance rather over 90 cm .

Standing one metre clear of the retaining-wall, where it reached its maximum height, was a row of three upright stone stelae, roughly shaped from slabs of limestone, but not apparently squared with a mason's tool (Pl. XIXa). All had originally stood upright, edge-to-edge, but one had now fallen forward at an angle of 60 degrees. Their average measurement was $75 \times 20 \times 250 \mathrm{~cm}$. Bedded rather deeply in the trodden earth pavement which corresponded in level to the base of the ramp, they were supported on the south side by a shapeless formation of stones, which could have been the base of a small offering-table. In the southward extension of the trench at this level, three narrow brick walls ( 50 cm .) were found of what appeared to be a private dwelling. The building was much damaged by intrusive rubbish pits: but there was a regular pavement inside, upon which a little intact pottery was found in situ (Pl. XIXb). This building, in common with the area between the nearby ramp and the three stelae, was packed with burnt debris exactly matching that in the Palace, with which, in the sloping lines of the section it could be seen to be contemporary.

## The Plan Reconstructed

It may be well here to reiterate a brief argument concerning the main lines of our isometric reconstruction (Fig. A.13), which accompanied its publication in the last preliminary report on the palace excavations ( $A S, \mathrm{Vol}$. X, 1960, p. 38 ff and Fig. 4), dwelling at the same time in greater detail on those elements which are based on conjecture rather than on positive evidence.

## Probable Limits of the Building

In describing the excavations, it has already been observed that the limits of the building have only been clearly defined in two places. The double outer wall on the south side and its return northward at the south-east corner are one: the northern outer wall of the east wing is another. Between these two, the eastern limit of the east wing is uncertain. To judge by the formation of the mound, it seems unlikely to extend beyond the last range of chambers partially excavated on that side. Similarly, regarding the westward extension of the west wing, it appears exceedingly probable that the west wall of Room 31 marked the outside limit of the building on that side. It also seems likely that, beneath the unexcavated area in the south-west corner, the shape of the plan could be completed by projecting the west wall of Room 31 southwards to its intersection with a corresponding westward projection of the south façade. It is only in fact on the north side, and particularly to the north of the central courtyard, that the building may well have extended further than has been indicated in our reconstruction. The comparative scarcity of storage space and service accommodation in the parts of it which have been excavated, could be taken to suggest that, somewhere on
the north side there may have been a wide service court surrounded by storage magazines. The contours of the mound would not preclude this possibility: but it is strange that no traces of building in Level V could be found in the northward extension of Trench "Y".


Fig. A.13. Perspective reconstruction of Palace

## Main Approaches

There seems little doubt that the most important entrance to the palace was located somewhere beneath the unexcavated area in the south-west corner. In the restored plan, the axial approach to the central courtyard (and the supposed main stairway beyond), passes through the so-called "Portico" and "Great Hall". But it starts in the large ante-room, No. 31; and this is entered through a wide, centrally placed doorway on its south side. Beyond this our investigations could not continue: but, by analogy with the east entrance, one would have expected to find here a chamber with some sort of arrangements for lustration. It is towards this that a line of approach is indicated by the sloping causeway discovered in Trench " D ".

The function, though not the architectural treatment, of the east entrance can most clearly be inferred from the remains. Here once more there are indications of a sloping causeway, approaching the south-east corner of the building from the direction of the river-crossing, where one of the principal city-gates must have been located. Even on the contour map it can be seen, traversing the flank of the mound at a sharp angle and bringing one ultimately to a doorway, placed in a re-entrant angle of the east façade. Here unfortunately, in addition to the effects of the fire, the walls had been displaced by a subsidence in the side of the mound. A rise in level as one entered the building would have necessitated steps in front of the doorway, and there were remnants of a retaining-wall which must have supported these on the east side. Only the outline of the little vestibule to which they led could be recovered. The group of rooms beyond are perhaps more coherent in function than any in the building. After passing through an ante-room with lustral appointments, guests were received in a large square chamber with painted walls and a central hearth. Through a doorway to the west was a service room with storage-galleries, and to the south a stair-chamber, probably giving access to an upper storey or to the flat roof.

From the stone-paved terrace beneath the south façade of the palace a minor entrance led to the service apartments in the south-east wing. Here there were cobbled courts with metal cisterns for water-storage. In the covered rooms air-ducts were considered unnecessary. The existence of a fourth entrance, perhaps once more for the use of servants, was suspected in the reentrant angle of the building north of Room 46 .

## Ground-Floor Pavements and Earthen Ramps (cf. sections in Fig. A.14)

The treatment of ground-floor pavements throughout the building raised more perplexing problems than any other architectural feature. In no single case was the material character or practical function of a pavement immediately self-evident. To begin with, pavements occurred at different levels in rooms of different classes and we were compelled at an early stage to distinguish between "raised" and "basic" pavements. Yet it soon became clear that the pavements in the more important rooms were not in fact "raised", nor indeed could they correctly be called "pavements"; for directly
beneath their lightly-trodden surfaces was the stratified debris of the mound's earlier occupations. It was in fact the rooms and courts with "basic" pavements that had been deliberately excavated to a deeper level. In some cases they had then been paved with small "cobbles" or with larger stones, held in position by parallel wooden beams. But again, in neither case could evidence be found that clay, for instance, or sand had been used to bring this rough deposit to an even surface on which one could walk. In other compartments excavated to this deeper level, whose function was obviously to admit light, no paving of any sort was laid and no provision made for drainage. Another extraordinary feature, to which reference has already been made in describing the excavation, was the abrupt transition from high- to low-level pavements. Where these occurred between one room or court and another, simple earthen ramps were provided. But no traces could be found of any provision for revetting the vertical faces of earth which must have occurred on either side of these.

The full variety of treatments for ground-floor pavements is well illustrated by the sequence of apartments through which one passed on the principal axis of the plan. First came the ante-room, No. 31. Here a high-level floor was retained, in order to allow the construction of air-ducts around the bases of the walls, and its trodden earth surface was fairly deeply bedded in carbonized rushes. Next, to the east, came the "portico" with its low-level pavement of unevenly trodden earth (Pl. XIIa). From here a ramp, strengthened with stones and timber, brought one up to the high-level, rushstrewn pavement in the centre of the "Great Hall", from which one immediately descended again, presumably by a similar ramp, to the low pavement of the central courtyard. And here again the word "pavement" is a euphemism, for the small sections of the courtyard exposed by our excavation showed only an earth surface, scantily sprinkled with pebbles and fragments of pottery. Since what we have just described would apparently constitute a ceremonial approach to the centre of the building, it would only seem possible to conclude that the cruder earth surfaces, when not strewn with rushes, were covered with some woven fabric, which would either have been removed or perished.

## Wall Treatments

No attempt has been made to reconstruct any enrichment of the interior, except in the so-called "portico", where the bare outline of the flanking recesses is suggested. As recorded in our preliminary report, the niches did not come down as far as the floor, and, if accessible at all, must have been reached by small steps. It would perhaps be over-fanciful to do more than suggest that they were used for some ceremonial purpose.

## The Central Court

Since so little of this could be excavated, its reconstruction can only partially be authenticated. Nevertheless, such evidence as we have is irrefutable.

section a-a

##  <br> section c-c



ection e-e

First, the existence at first-floor level of a surrounding gallery or balconies is proved by the discovery of fallen remains, and the means by which they were supported indicated by the charred fragments of a wooden column. In Area 27, evidence suggested that a covered-way beneath the gallery was paved at a slightly higher level than the court itself. The ramp approach from the "Great Hall" and its continuation across the courtyard are conjectural, as also is the reconstruction of the main stairway, for which such evidence as existed has been presented elsewhere (Room 23, p. 17).

## The Upper Storey (cf. sections in Fig. A.14)

In this connection there is little to be added to the argument put forward in our preliminary report. It ran as follows:
"It was the excavation of the west wing which provided the first positive evidence of the existence of an upper floor, and it showed that the 'Great Hall' (Room 28), which measured $17 \times 12 \mathrm{~m}$., was duplicated in the upper storey by a chamber of similar dimensions. On the other hand, neither in the 'portico' nor in the ante-room beyond it (Room 31) were any traces found of a fallen upper structure. One is left to assume that these chambers ran up to the full height of the building, which would be compatible with their function as part of a monumental entry to the palace. As for the east and south wings, in the case of the former no conclusion could be reached owing to the total denudation of the ruins down to ground-floor level; but one would naturally assume that here also there was an upper storey. In the southern wing, on the other hand, the ruins remained standing to almost a man's height. But only in one chamber (the long storage magazine, No. 14), was a large fragment of the upper structure found fallen intact, and as this showed signs of having been frequently replastered on its upper surface, it seemed more likely to be part of a flat roof. It may therefore be right to think only of the west and east wings as standing two storeys high. Even so it is clear that the upper chambers which they contained were as pretentious in size and character as those below: and one is immediately reminded of the principle adopted in the Cretan palaces, of placing the more important suites of reception-rooms on the upper floor ('piano nobile', as Evans christened it), while the rooms below were merely storerooms and passages. By contrast, in this Anatolian building both floors were obviously used for residential purposes, and this may well be explained by differences of climate due to the altitude of the Anatolian plateau (c. 3,000 feet). The ground floor, with its possible provision for heating by means of the 'air-ducts', was more suitable for use in the winter, while the upper floor may well have consisted partly of 'balcony'-type chambers, open on one side to the air, like the wooden upper storeys of modern Turkish houses in nearby villages. Such rooms can of course only be constructed from fairly scanty evidence, but Rooms 20 and 26 are two examples which, to judge by their shape, would have had counterparts on the upper floor, open on one side to the wooden gallery around the courtyard and so to the open air beyond. It seems probable that the same applied to the huge upper chamber above the 'Great Hall'. We in any case gained
the impression that the whole of the upper storey was lightly constructed, perhaps largely of wood (as again is the habit of the very conservative peasant builders of the present day). For the actual volume of fallen debris seemed hardly commensurate with the remains of a heavier structure." ${ }^{1}$

## Architectural Enrichment

Perhaps one of the most striking characteristics of this ambitious and elaborately constructed building was the total absence of worked stone or other evidence suggesting that its builders were familiar with the stonemason's craft. Nowhere in the excavated ruins was the mark of a mason's chisel once found upon a stone. Yet it would be impossible to imagine a royal residence of this sort without architectural embellishment of one sort or another: and one is consequently led to assume that craftsmanship in carpentry must have replaced that of stone-carving. Undoubtedly the pillars supporting the upper storey and roof were of wood, and a fragments of only three were found, it would be possible to suppose that their enrichment, perhaps with ornamental capitals or bases, made them worth removing. At least in one single instance (Room 28) evidence had survived of a door-lining with ornamental bosses: and, in the absence of all else, this must be accepted as a forlorn token of vanished decoration.

[^7]
## CHAPTER 2

## PUBLIC BUILDINGS ON THE WESTERN SUMMIT

Middle Bronze Age public buildings were first located on the western summit late in the season of 1955, when excavations were resumed in Area "A" (Fig. A.l). It was here that, in our first season, a terrace of private dwelling-houses had been found and excavated, dating from the Late Bronze Age (Level II), and beneath these a deeper penetration had now been made. In Level V, the walls were encountered of a substantial building extending eastward and southward of this sounding. In 1956 therefore, a new trench "S" was cut in order to investigate the buildings further, covering an area 5 m . wide by 40 m . long, running out towards the eastern flank of the hill ( Pl . XXa). By compass the direction of Trench " $S$ " was approximately east-north-east; but once more for convenience its "east" and "west" ends may be referred to. It was, then, at the "east" end of this trench that we later began the major sounding, "SX", described in the first volume of this series.

In the plan of these buildings (Fig. A.15), it will be understood from the dotted lines, representing conjectural extensions of the system of walls discovered, that we appear to be dealing with two separate subdivisions of a single large building, separated by a paved passage-way. The building stands in an enclosure, surrounded by a protective wall of considerable strength. In 1955 we had exposed its north-western outer wall and parts of three rooms inside, separated by walls of two different thicknesses. The outer wall measured exactly 1 m . thick and remained standing to a height of 30 cm . above the pavement of Room 1. Up to this point it was constructed entirely of undressed stone, reinforced with timber. We were at first surprised by the great depth to which the foundations penetrated. At intervals of $40-$ 60 cm . in its height, the stone substructure was strengthened by a framework of wood-runner-beams about 20 cm . square in either face of the wall, tied together with cross-pieces about every 3 m .-and three of these occurred below ground level, accounting for a depth of 1.50 m . Later we discovered that, elsewhere, outside walls of the building were provided with considerably more shallow foundations and concluded that their depth must have varied according to the strength of the ground upon which the wall was built ( Pl . XXc). Partition walls inside the building were of two sizes. Those on the south-west and south-east sides of Room 1 remained standing high enough for several courses of mud brick to have survived. They measured 75 cm .
thick. Their foundations consisted merely of two runner-beams, set in a little from the faces of the wall and held in place by a bed of stones. They penetrated hardly beneath the floor. As far as one could judge from the surviving brickwork, these walls, unlike those in the palace, had no vertical posts to strengthen them. The room had a pavement of trodden earth, not at all easy to distinguish. Much interesting pottery was found during its excavation: but this proved to come from a Level VI occupation, a few centimetres beneath it, and from rubbish-pits just beyond the outside wall, belonging to the same period ( $\mathrm{Pl} . \mathrm{XXb}$ ). Otherwise the room itself was empty.

It was not until Room 3 was reached, that traces were found of a secondary occupation of this building, during which some structural alterations had taken place. Stone foundations which may be seen in the plan, laid directly upon the original pavement, date from this secondary period. Three post-holes adjoining the north-west wall however date from the earlier occupation.

Area 4 had the character of a road or paved passage between two separate parts of the same building, or even between separate buildings. It has superimposed pavements, dating from the two successive occupations, each consisting of pebbles, fragments of pottery and a few animal bones, trodden into a hard crust. The integrity of these pavements on the south side of the trench is important to emphasize, because, at a point about 15 cm . beneath the earlier one, a stamp-seal of special interest was found ( $A S$ VIII, Pl. XXVIa). For the purpose of dating this seal, the lower of the two pavements must be considered as constituting the dividing-line between Levels V and VI, and accordingly between the Early and Middle Bronze Ages. The provenance of the pottery found under Room 1 is important for the same reason (Pl. XXIa).

Just inside the building to the east of the paved street, we came upon an architectural setting of particular interest (Pl. XXIb, Fig. A.16). During the primary occupation there had been an entrance here from the street-a doorway of which one jamb was found, rebated to take a wooden door. Inside the doorway was a small vestibule, (comprising the two compartments marked 5 and 6 on plan), with a second door leading to Room 8 in the northern corner. In the centre of the room, between the two doors, a plastered shaft was sunk into the pavement to a depth of 50 cm . Its bottom was covered with fragments of broken pottery vessels, all of one type-a simple hemispherical bowl of very thin fabric-and beside it at pavement level were the broken pieces of a large water-container. At the secondary occupation this room had been entirely rebuilt, with doors facing each other at the southeast end. But a new plastered sink of exactly the same dimensions had been constructed by raising a baulk of brickwork 50 cm . above the pavement. We found the two sinks surviving, one above the other. There seemed little doubt that they had been provided for some form of lustration on entering the building.

Room 8, to which the vestibule brought one, had no feature of significance and was limited on the south-east side by a 1 m . thick wall, which also


Fic. A.15. Plan of Trench " " ", Level V

marked the limits of the building. On this side it was separated by an open space, seven metres wide, from an enclosure-wall which must have surrounded the whole complex. The stone foundations of this wall measured 1.30 m . in thickness and were reinforced with no less than four rows of runnerbeams, tied together at intervals of 2 m . In places some courses of mud brick were preserved, and the eastern outlet of the trench enabled us to trace it up to a point where it made a right-angle turn to the north-west. A small buttress or door-jamb projecting from its inner face suggested that there may have been chambers built against its inner side from here onwards.

The first conclusion to be reached regarding these architectural remains on the western summit of the mound, is that they are those of public buildings. Their outer walls are 1 m . thick (as opposed to an average of 90 cm . in the palace), and though the form of construction differs a little from that employed elsewhere, they are substantially built. The rooms are large (the ceiling of Room 8 had a span of 5.25 m .) and obviously their planning is purposefully considered. Neither pottery nor domestic hearths are present to suggest a residential character. Nor are they hemmed in by smaller buildings, but stand clear in an open precinct, whose protective wall must have surrounded the whole complex. The alignment of the enclosure-wall corresponds to the brow of the escarpment on this side of the flat western summit, and it would be not unreasonable to suppose that our complex of public buildings extended over the greater part of it, in which case it must have covered an area of almost two acres. An administrative establishment of this size would hardly seem incompatible with the pretentiously planned residential palace on the eastern hill. One element only seemed still to be lacking in the equipment of so large a city, namely a religious sanctuary; and this was now supplied as a result of soundings on the extreme northern edge of the mound (Area " R ").

## CHAPTER 3

## RELIGIOUS BUILDING IN AREA "R"

The discovery at Level V in Area "R" (see Fig. A.1) of two religious sanctuaries, clearly grouped together as a single unit, was not altogether a surprise (Pl. XXIIa). Pairs of shrines, admittedly different in scale and planning, had occupied the western part of the site during the Late Bronze Age (Levels II and III), and a rudimentary pair had been constructed by the squatter population in Level IV, partly incorporating the ruins of the smaller Level V sanctuary (Fig. A.17). The imposing character and scale of the larger Level V building, however, could only have been anticipated if one remembered that its foundation was contemporary with the Burnt Palace. Like the latter, both shrines had also been ruthlessly destroyed by fire, their less valuable contents only being left in place. The smaller or western building must first be described.

This building unmistakably recalls the "megaron" type of dwellinghouse, discovered in the Early Bronze Age Levels (VIII-X) of Sounding "SX" and described in a previous volume of the present series (Beycesultan, Vol. 1, Chapter IV). Like the Early Bronze Age shrines, described in the same context, it was sited on the periphery of the settlement and orientated towards the open country beyond (Pl. XXIIb). It consisted, like all megara, of a rectangular hall, measuring $7 \times 4 \mathrm{~m}$., and a shallow portico facing a wide street or open space. As we have so often found to be the case elsewhere, the fragile wing-walls of this porch had been the first to collapse and were roughly rebuilt by the squatters, thus obscuring the details of their original construction. The back wall of the porch was also a flimsy structure, no more than 40 cm . thick and supported by two vertical wooden posts, whose fallen remains lay intact upon the earth pavement. The doorway to the hall was off-centre to the east and, nearby in the east wall, a smaller opening with a curious plaster door-stop gave access to an adjoining chamber whose plan was much confused by the intrusion of later stone foundations. The most prominent feature of the sanctuary, occupying the traditional position of the domestic hearth, was a clay pedestal, raised 33 cm . above the pavement, with an ash-covered emplacement before it (Pl. XXIIIa). On and around this pedestal much votive pottery and other cult paraphernalia were grouped. Vessels actually resting upon its top included two small stone bowls (rare elsewhere), and a large pottery jar sunk beneath the level of the plaster. Built against the north and east walls behind this "altar" were structures of the type which in the Early Bronze Age shrines came to be known as $4^{- \text {o.p. } 8}$
"blood-altars". These also were small platforms with plastered tops surrounded by a low kerb and tilted so as to drain into a built-in pottery vessel (cf. Vol. I, Pl. IXa). An area in front of the eastern "blood-altar" was roughly paved with wooden boards. The north-west corner of the chamber was at first obscured by heavy wooden beams, fallen from the ceiling. After these had been removed, a narrow cross-beam was found, set in the pavement between the main "altar" and the west wall, suggesting some sort of light screen. The whole length of it was buried beneath a pile of large pebbles, among which were many baked clay "loom-weights". These were of a type which elsewhere we had suspected of being suspended at the ends of cords to form a light curtain. (For further particulars of pottery and other objects in this room, see Fig. A.17).

## INVENTORY

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AREA "R", LEVEL V SMALLER SHRINE
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(Compare find-spots in Fig. A.17.)
Serial
No.
1 Buff ware jug.

2 Carinated bowl, red wash.
3 Squat globular jar, reddish ware, one unperforated lug.
4 Small trefoil jug, red ware.
5 Small stone cup. Reg. No. 849.
6 Red ware jar, fragmentary.
7 Burnished red wash bowl, inverted rim.
8 Small stone cup. Reg. No. 848.
9 Plain ware miniature cup.
10 Storage jar.
11 Carinated bowl with bead rim, two nipple-lugs.
12 Coarse ware storage jar, two handles, two crescent lugs.
13 Carinated bowl, red burnished ware.
14 Two-handled water jar.
15 Two-handled water jar.
16 Red ware jar, fragmentary.
17 Storage-jar, flaring neck, two handles, buff ware.
18 Cooking pot.
19 Wheel-made cup, plain buff ware.
20 Bell-shaped coarse vessel, two lugs.
The space between the two shrines at this level had been occupied by two large subsidiary chambers (Nos. 2 and 3). The structure of these had been largely demolished by later builders and of the partition wall between them only a single course of brickwork survived. The larger shrine was a long rectangular building measuring $22 \times 6.50 \mathrm{~m}$. (Pl. XXIIIb) and was aligned slightly differently from the megaron (the latter faced due south). The outside walls measured 80 cm . thick, with the exception of that on the north side which was increased to 1 m . The site sloped sharply to the east, so that there was a fall of 50 cm . between the two ends of the building. The


Fig. A.17. Plan of Area "R", Levels $V$ and IVG

M. 10 . Datum. -2

SECTION A-A



WIO: DATUM. -

AREA "R" SECTIONS
$\stackrel{-200 \mathrm{M}}{1 \rightarrow-}$

SECTION C-C

foundations were built of solid undressed stone up to the level at which the walls emerged from the ground at the west end. At this point pairs of linked runner-beams formed a base for the brick upper structure. Interstices in the brickwork for upright posts occurred at maximum intervals of 1.50 m . and between them there were again runner-beams in the wall-face after every three courses of brick (see section, Fig. A.18).

In the larger shrine (Fig. A.19), the burnt walls were preserved up to a maximum height of 1.50 m . The rooms were filled with large timbers fallen from the roof and only partially carbonized. In places also, the wall-timbers were comparatively well preserved. In examining the wall-structure, therefore, it was now possible to rectify some wrong conclusions at which we had


Fig. A.19. Perspective reconstruction of Temple in " R ". (AS, IX, p. 37, Fig. 1.)
arrived in excavating the Burnt Palace, where the destruction had been much more wholesale. One of these was regarding the timber construction at the intersection of walls. At these points in the palace, the fire had burnt with exceptional intensity leaving only a twisted mass of half-vitrified brickwork and ashes. This we had attributed to a maximum concentration of upright posts at these points and assumed that they occurred at the actual intersection. We now learnt that this was not the case. The intersection was formed by a square pier of brickwork and the position of the upright timber was contingent to this on either side. We also observed that such timber as was preserved at the base of the vertical interstices in the brickwork consisted of transverse logs, sometimes as many as three superimposed one upon the other. This device had also been observed in the "portico" of the palace (see p. 21 above) where we had supposed that its purpose was to adjust the length of the posts above to the height of the roof (Pl. XXIVa). Elsewhere in our shrine, the use of such posts (two or three in the thickness of the wall), was attested: but it was also necessary to remind oneself that, in an almost contemporary building at Kültepe, T. Özgüç has recorded an instance of such transverse logs being piled one upon the other from floor to ceiling. ${ }^{1}$

The five chambers of which the larger shrine was composed may now be described in detail, starting from No. 4 at the west end, whose discovery at the end of the 1957 season apprised us of the building's existence. ${ }^{2}$

## Room 4

This was the smallest chamber of all and perhaps the most crowded with the debris of its appointments. One entered from the south, descending at least two steps. Inside the threshold there was a heavy wooden beam, upon one end of which no doubt the pivot of the door rested. During excavation the room presented a curious sight, owing to the fallen roof-timbers, some of them as much as 3 m . long and hardly carbonized, which projected in all directions from the fallen debris. When these were cleared away, one saw how its primary feature was a large "blood-altar" constructed against the east wall (Pl. XXVa). This was of the type which has a flat surface in the centre and a channel round it draining into a built-in vessel. On either side of this there were recesses in the wall, 40 cm . deep. That on the left was filled with the charred remains of some wooden structure, as though a tier of shelves had been built into it. The other was piled high with the ashes of a fire, in which several pottery vessels were embedded. Elsewhere there was much other pottery and at three different points the impression of heavy posts which had stood upright against the face of the wall.

## Rooms 5, 6 and 7

Next came a suite of three intercommunicating chambers. Room 5 seemed to be an outer vestibule, entered from the south and containing no more than a little pottery and an intact horse-shoe-shaped pot-support of

[^8]terracotta (Pl. XXIVb). From here one passed eastward into a second, somewhat larger antechamber, through a doorway whose threshold was supported by logs of wood on either side (Pl. XXIVc). In the centre was a circular impression, perhaps of a metal cistern and, projecting from beneath it on the north and south sides the carbonized remains of beams which had supported it in position. There was a great deal of pottery in the north-east and south-east corners, among which the only conspicuous item was a rare vessel ornamented all over with protruding knobs (Pl. XXXI, No. 7). Centrally placed in the east wall was a large doorway, again with a supported threshold, leading into Room 7. Judging from its axial entrance and from the trouble which had been taken, presumably before the fire, to remove the whole of its contents, we have assumed this to have been the inner sanctuary.

## Room 8

This chamber had its own entrance from the east side of the building. The doorway was rebated to take a wooden door and, centrally placed just inside the threshold, was a small brick pedestal for offerings, 35 cm . square. In and outside the doorway lay the broken remains of many votive vessels. Inside the room too there was a scattering of pottery including two large water-containers. In the south-east corner there was a damaged "bloodaltar" (Pl. XXIVd) and in the centre a three-sided clay hearth plentifully filled with ashes, which had spilled over into an adjoining depression in the pavement, perhaps intended for the purpose. In two places the pavement was strengthened with wooden beams. Like those elsewhere it was of trodden earth. The inside wall-faces of the building were throughout covered with two coats of mud plaster.

## INVENTORY

AREA " R ", LEVEL V TEMPLE.
(Compare find-spots in Fig. A.17.)
ROOM NO. 4

| Serial |  |
| :---: | :--- |
| No. |  |
| 1 | Group of ten conical clay loom-weights. |
| 2 | Single foot of No. 3. |
| 3 | Cooking pot on three feet in grey clay. Two handles. |
| 4 | Spindle-whorl. |
| 5 | Spindle-whorl. |
| 6 | Red ware storage-jar. |
| 7 | Beak-spout. Purple-brown wash. |
| 8 | Built-in red ware jar. |
| 9 | Pithos. |
| 10 | Small red ware jar. |
| 11 | Fragmentary red ware jar. |
| 12 | Trefoil-mouthed jar with red wash. |
| 13 | Small stone bowl. Reg. No. 849. |
| 14 | Spindle-whorl. |
| 15 | Carinated bowl, red burnished. |

Serial
No.
16 Red wash jar.
17 Fragment of marble figurine. Reg No. 856.Tall jar, buff ware.
room no 5 .
Small beak-spout.
Red wash ware jar.
Horseshoe-shaped pot-stand with handle.
Coarse cooking-pot.Red wash ware jar.
ROOM No. 6
Serial
No.1 Cooking-pot on stand with three legs, two handles and two lugs. Buff ware withmicaceous grits.
2 Wheel-made jar in buff ware with two handles. Red-brown burnished slip outside and inside rim.
3 Wheel-made jar, buff ware, two handles. 'Knob' ornament all over.
4, 5 Wheel-made jars in buff ware with two horizontal handles.
6 Wheel-made carinated bowl with three lugs. Buff ware, wet-smoothed.
7 Wheel-made jar in yellow clay.
8 Bi-foil jug in buff ware with red wash. Lined with plaited grass.
9 Fragmentary.
10 Fragmentary.
11 Wheel-made beak-spout, buff ware, red wash.
12 Cooking-pot with two lug handles and nipple-lug.
13 Copper chisel. Reg. No. 862.
14 Flint knife-blade.
15 Conical clay loom-weight.
16 Bifoil jug, buff ware, red wash.
17 Beak-spouted jug. Buff ware with red burnished slip.
18 Fragmentary beak-spout.
19 Carinated bowl. Buff ware with burnished red wash.
20 Fragmentary coarse ware vessel.
21 Group of conical clay loom-weights.
22 Stone quern. ( $25 \times 14 \times 6 \mathrm{cms}$. $)$.
23 Marble figurine of the 'mother-goddess' type. Reg. No. 866.
24 Flint knife-blade.
Rоом no. 8
Serial
No.
1 Storage-jar in buff ware.
2 Large fragmentary storage-jar in coarse red ware.
3 Fragmentary.
4 Cooking-pot on stand.
5 Fragmentary.
6 Fragmentary.
7 Large storage-jar.
8 Cup with handles missing.
9 Carinated bowl.
10 Pithos in coarse red ware.

## Serial

No.
11 Built-in globular jar.
Feeding-bottle. Reg. No. 876.
Fragmentary pot in coarse red ware.
Jug with neck missing: probably beak-spout.
Jar with two handles and two lugs in buff ware. 'Knob' ornament all over. (Similar to No. 3 in Room No. 6.)
16 Handle-less cup.
Bifoil jug.
Biconical jug: probably beak-spout.
Bowl.
Near the east door were fragments of matting of some material composed from animal hair.
Little general comment remains to be made on this complex of Middle Bronze Age religious buildings. Speculation regarding their function and dedication must await further evidence of religious beliefs in Anatolia at that period. That the two shrines formed a single unit can hardly be doubted, in view of the known precedents for such an arrangement in the Early Bronze Age and its persistence throughout the later occupations of our site. The plan for the western shrine (like that of the Greek temple in later times), clearly reflects the time-honoured image of a human dwelling and the primary focus of its ritual is upon the domestic hearth. As we shall presently see when we come to consider a secondary rebuilding in Level IV, the erection, facing the portico on its main axis, of a heavy wooden post or pillar on a clay pedestal, once more offers a parallel with the earliest religious cults in Crete. For the rest, one can only conclude that the votive vessels suggest propitiatory offerings and the "blood-altars" sacrifice. Architectural evidence serves only to reaffirm the earlier practice of screening an area behind the altar. In the portico it is unfortunately too scanty to supplement our knowledge of the structural treatment (Vol. I, p. 59 ff .).

The larger shrine, whose size and complexity have promoted it to the status of a temple, has features obviously unprecedented in earlier periods. Rooms at either end, separately accessible from outside the building, both show evidence of votive ritual and sacrifice. The three remaining chambers, again with their own separate approach, form a group functionally suggestive of a sanctuary and its two antechambers. There is no indication of an upper storey.

In regard to the siting of these buildings in relation to the general lay-out of the city, the increased thickness of the north wall to the larger shrine could be taken to indicate its proximity to the periphery of the town. But a searchtrench running outwards from it in a northerly direction failed to find traces at this level of a city wall. More positive indications that the limits of the settlement had here been reached were provided by a last-minute sounding in the Early Bronze Age (Level VI) occupation beneath. The north wall of our Level V temple proved to have been built upon, or just inside a substantial stone fortification. Here also there were signs of destruction by fire and the large stones of which it was constructed were partially calcined. The
wall had collapsed outwards and a penetration made into its fallen remains, up to a depth of 5.50 m . beneath the Level V pavement, failed to reach the point at which its foundations had been laid. The line of its outer face could however be traced running due westwards. At a point just short of the temple's north-west corner it made a right-angle turn to the north, and some surviving brickwork suggested the existence of a projecting tower containing a paved chamber. To the west of the temple also there were scanty remains of burnt brickwork and an extensive pavement of stone rubble, stabilized with parallel timbers. ${ }^{1}$
Trench "W" (Fig A.20)
Though the exact limits of the Middle Bronze Age city on its northern side had thus to be left undefined, more positive evidence regarding its southern limits was discovered by a sounding in Square $\mathrm{E} / 5$, distinguished by the letter "W" in the contour map (Fig. A.1). At a depth of about 2 m., this


Fig. A.20. Plan of Trench "W"

[^9]trench encountered a heavy mass of undressed stonework, which appeared to represent the substructure of a broad enclosure wall (Pl. XXVb). Much damage had been caused to it by the excavation of storage pits and by the activities of stone-quarriers in a later period. Nevertheless, the faces of the wall could in three places be distinguished; and it could be seen to have an overall width of almost 5 m . As may be seen from the plan, it appeared to be joined at rightangles on the north side by a similar wall, built of the same large stones. At a point where the foundations of the main wall had been completely removed by quarrying, we also found the remains of a somewhat later building, with mud-brick walls 60 cm . thick on stone foundations. Pottery was associated with these, including one large "pithos" and enabled us unequivocally to date them to the Late Bronze Age. A Middle Bronze date was thus suggested for the enclosure wall.

## Trench "U" (Fig. A.21)

This identification was given to a sounding made on the western side of the saddle between the two summits. The stratification was here much con-


Fig. A.21. Plan of Trench " U "
fused by the intrusion of enormous storage-pits dating from the Late Bronze Age period: but the walls of two rooms could partially be traced in a building which had no other distinguishing characteristics. Some interest was however lent to this sounding by the discovery of two objects lying side-by-side on one of the few undisturbed areas of original pavement. These were the two theriomorphic vessels of red burnished pottery, which appear in Pl. XXXII. One is in the shape of a bird; the other-headless-can be recognized as some form of animal. Other pottery found in the same setting, enabled us to date these objects and the building in which they were found to the Middle Bronze Age, (Levels V or IV).

## GENERAL INVENTORY

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POTTERY
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## Level V

Registration

Find-spot
E. V. No. 1. Terracotta drum in coarse red ware. $55 \times 38 \mathrm{cms}$.
E. V. No. 10. Small two-handled jar. diam. $7 \cdot 6 \mathrm{cms}$.
E. V. No. 10. Small two-handled jar. diam. 9 cms .
E. V. No. 10. Small carinated jug. Coarse ware. $17.5 \times 12.5 \mathrm{cms}$.
E. V. No. 10. Small carinated jug. Coarse ware. $20.3 \times 14.5 \mathrm{cms}$.
E. V.
E. V. No. 14.

Plain bowl in buff ware. diam. 10.5 cms .
Plain bowl in buff ware. diam. 11 cms .
Small cooking-pot in coarse red ware. diam. 10 cms .
Bifoil mouthed jug with ring-base. Buff ware, burnished reddish slip. $23 \times 15 \mathrm{cms}$.
Carinated jar with basket-handle, side-spout and ringbase. $20 \times 20 \mathrm{cms}$.
Plain bowl in buff ware with burnished red slip. $15 \times 6.5 \mathrm{cms}$.
Trefoil-mouthed jug. Black-topped red ware. 13.5 $\times 12 \mathrm{cms}$.
Anthropomorphic pouring-jar. Red ware. ht. 16 cms; 1. $12 \cdot 3 \mathrm{cms}$. Head missing.
Anthropomorphic pouring-jar. Complete. ht. 15•6, 1. $17 \cdot 6 \mathrm{cms}$.

Bifoil mouthed jug. Buff ware, red wash. ht. 11•1 cms.
Miniature feeding-bottle. Red washed ware, $7.5 \times$ 3.6 cms .

## CHAPTER 4

# BUILDINGS DATING FROM THE RE-OCGUPATION IN LEVEL IV 

(1) Over the Palage Ruins

Occupations of the Beycesultan mound at Level IV, which has been equated with the latter part of the Middle Bronze Age, were examined in three principal areas. On the eastern summit they were found overlying the palace ruins, particularly in Areas "AA" and "CC" excavated in 1959, which correspond to the so-called east wing of the building. On the western hill, excavations in Area " $R$ " on the northern periphery of the settlement, revealed religious buildings belonging to this period, occupying the same site as those in Level V. On the western summit itself, a deep deposit of Level IV remains overlay the Level V public buildings in Area "A" and its extension through Trench "S".

During our first acquaintance with these levels in the seasons of 1954 and 1955, we had come to assume that Level IV represented a comparatively short occupation of the site by a squatter population, returning to camp among the ruins after the disaster which resulted in the destruction of the Middle Bronze Age palace. This later proved to be a false impression. Admittedly their attempts at rebuilding were half-hearted and continued to be so throughout the period. Even the shrines which they rebuilt in Area "R" partially incorporated the ruins of earlier walls, and stone seems to have been collected from other parts of the site rather than newly quarried. No signs were in fact to be found of communal organization or economic stability, until the general reconstruction which appears to have taken place at the beginning of the Late Bronze Age in Level III. Neverthless, it gradually became clear that this interim occupation must have lasted at least for several generations. In Trench " $S$ " the ruined walls of the Level V public buildings were separated from the foundations of Level III by 1.75 m . of occupational deposit, of a sort which would be slow to accumulate owing to the absence of building remains, and three distinct sub-phases could be distinguished in the period which it represented. In Area " CQ ", there had been time for one unusually substantial dwelling-house to be occupied, destroyed and rebuilt to a different plan, all within the period of Level IV.

Areas " $A A$ " and " $C C$ " (Fig. A.22)
It was here, over the ruined east wing of the palace, that the first attempts were made to build actual houses from the materials most obviously available. We have mentioned in another context the possible reasons for discrimination in choosing this part of the site. Perhaps those who first returned to the ruins found the walls here already conveniently demolished: and perhaps the high-standing ruins in the adjoining south-east wing afforded some sort of protection or concealment. The latter in any case, and the smoke-blackened walls of the west wing remained standing to a height of almost two metres throughout the period. Only the broad surface of the fallen upper floor in the "Great Hall" at some time suggested itself as an emplacement for a small storage-hut, partly constructed of palace bricks (Pl. XVa).

During this earliest phase in the re-occupation, a single house was built in Area "CC" (Pl. XXVIa). It was built directly upon the raised pavement of Room 45 , one of the largest reception-rooms in the east wing, which was wide enough to accommodate its three principal rooms. The walls averaged no more than 40 cm . thick. Stones were collected to make their foundations and some new mud bricks made to supplement broken fragments recovered from the ruins. The plan consisted of a living room ( $3.50 \times 6.50 \mathrm{~m}$.) , two smaller rooms accessible from it on the north side and others to the south and east may or may not have belonged to the same building. This little house in Level IVb and that built to replace it in IVa, perhaps deserved to be described in some detail, since they provide the only surviving examples of the domestic setting typical of this period.

It seems fairly certain that the living room, No. 11, faced westward on to an open court and could only be entered from it. There was no west wall and the stone screen and post-holes which replace it make it clear that it was really no more than a part-open shelter. The domestic hearth was awkwardly placed near the entrance and against the north wall were the remains of a simple clay baking-oven. Beside this and on the opposite side of the room, where some pottery had stood, there were traces of woven reed matting on the earth pavement. Pottery was almost all of buff ware with a red or red-brown wash, sometimes burnished. It included a trefoil jug (diameter, 9.6 cm .), two-handled storage-jar (diam. $22 \cdot 4 \mathrm{~cm}$.), small carinated jug (ht. $11 \cdot 6 \mathrm{~cm}$.), carinated bowl with two loop handles and two nipple-lugs (diam. 21.4 cm .) and two simple miniature bowls. There were also sherds of larger storagejars. Among small objects were a nest of knucklebones, two spindle-whorls, two cylindrical hones (diam. 2-4 cm.) and a horse-shoe-shaped pot-holder, undecorated.

The two smaller rooms on the north side were entered by a single doorway with a stone threshold (Pl. XXVIb). No. 10 was of interest since its contents seemed to suggest the belongings of a woman. Against the east wall a curious structure measuring $110 \times 60 \mathrm{~cm}$., was built of clay. The screened semi-circular recess with a circular depression in the raised seat, resembled a child's lavatory: but there was a hearth beside it with some pottery and small objects among the ashes. Pottery here and elsewhere included two large jugs


Fig. A.22. Plan of East Wing, Levels IVa and IVb
基 M- -





with ring-bases, one with nipple-lugs, miniature jugs, storage-jars, carinated bowls, one with loop-handles, part of a high-necked bottle and a footed cup. Among small objects were as many as 17 clay loom-weights of the common pyramidal shape, 8 biconical spindle-whorls, flint blades and a basalt handaxe.

To the west of this house in Area "AA" no building remains whatever could be attributed to this early sub-phase of Level IV. Traces of an occupation at this period were, however, indicated by a careful section from east to west recorded in the debris overlying Room 48 (Fig. A.9). In this one could clearly see at Level V the partly disintegrated stone foundations of the east wall of Room 48; the air duct with parts of its wooden bridging still intact and the high-level earthen floor reached by a steep ramp from the central courtyard. Inside the air-duct and overlying the wall-remains was the usual fallen debris of the burning upper structure. But, level with the upper surface of the raised pavement, the whole of this was sealed in by the unbroken grey line of a horizontal clay pavement, several centimetres thick, which could only correspond to the first occupation after the fire, when a preliminary levelling of the ruins must have taken place. Above it there was a second filling, still of typical burnt palace debris. But this lay in sloping striations and had clearly been intentionally deposited at a later date, to bring


Fig. A.23. Level IV room between Palace rooms 16 and 17
the level up to that of a later pavement corresponding to the secondary occupation in Level IVa, during which, as we shall presently see, some building finally took place on this part of the site.

## Level IVb Dwelling in Square C/2 (Fig. A.23)

It remains to mention one more location in which important traces were found of the first "squatter" occupation after the fire which destroyed the palace. This was evidently a rudimentary dwelling built directly over the denuded north wall of Room 16 (the so-called lustration chamber adjoining the east entrance). No more than the outline of the walls could be recovered: but an earth pavement, blackened by fire, was covered by a score of pottery vessels, so unusually well-preserved that they have made a maximum contribution to our repertoire of contemporary shapes. They may be seen in Pls. XXVIIIa, b, and elsewhere among the pottery drawings.

## INVENTORY

GROUP OF NUMBERED POTTERY, OVERLYING NORTH WALL OF ROOM 16 in Palace
(Compare find-spots in Fig. A.22.)

| Serial | Registration | Description | Size |
| :---: | :---: | :---: | :---: |
| No. | No. |  |  |
| 1 | 237 | Funnel in buff clay. | $15 \cdot 3 \times 13 \mathrm{cms}$. |
| 2 | 241 | Miniature bowl with one handle. Pedestal missing. | $6.5 \times 3.5 \mathrm{cms}$. |
| 3 | 267 | Jug with beak-spout and ovoid body. Coarse ware, burnt. | $29 \times 18.5 \mathrm{cms}$. |
| 4 | 265 | Carinated bowl with ring-base and one rising loop-handle, buff ware, burnished. (Fragmentary). | $27 \times 12 \mathrm{cms}$. |
| 5 | 236 | Jar with two vertical loop-handles and two nipple-lugs. Coarse ware. Burnt. | $19.4 \times 18 \mathrm{cms}$. |
| 6 | 239 | Small jar with two vertical loop-handles. Buff ware. Burnt. | $11.5 \times 11.3 \mathrm{cms}$. |
| 7 | 263 | Beak-spouted jug with three handles and cabled neck. Buff ware. Burnished. | $28.5 \times 19.5 \mathrm{cms}$. |
| 8 |  | Large jar. Fragmentary. |  |
| 9 | - | Necked jar with low carination and flat base. |  |
| 10 | 264 | Bowl with ring-base. Buff ware. Burnt. | $27 \times 12 \mathrm{cms}$. |
| 11 | 238 | Small carinated jar with ring-base and two handles. Buff ware. Burnt. | $10 \cdot 7 \times 10 \cdot 7 \mathrm{cms}$. |
| 12 | 266 | Large bowl with one rising loop-handle. | $23 \times 9 \mathrm{cms}$. |
| 13 |  | Large jar. Fragmentary. |  |
| 14 | 240 | Bowl with one loop-handle. Burnt. | $19.5 \times 9.5 \mathrm{cms}$. |
| 15 | 242 | 'Heating vessel' on three feet. Fragmentary. | $23.5 \times 22 \mathrm{cms}$. |
| Associated Items of Pottery |  |  |  |
|  | $290$ | Bowl with ring-base. Burnt. | $23.5 \times 9.5 \mathrm{cms}$. |
|  | 291 | Beak-spouted jug with ring-base and nipplelugs. Ribbed neck. <br> Miniature beak-spout. Buff ware. Burnt. | $15.2 \times 12.5 \mathrm{cms}$. <br> $9 \times 7 \cdot 2 \mathrm{cms}$. |
|  | 292 |  |  |


| Serial No. | Registration No. | Description | Size |
| :---: | :---: | :---: | :---: |
|  | 294 | Carinated juglet. Fragmentary. | $16.5 \times 12.5 \mathrm{cms}$. |
|  | 295 | Miniature trefoil-mouthed jug with nipple-lugs. |  |
|  | 300 | Beak-spouted juglet. | $15.4 \times 12 \mathrm{cms}$. |
|  | 301 | Carinated jug with ring-base and bifoil mouth. | $20.5 \times 14 \mathrm{cms}$. |
|  | 303 | Fruitstand with pedestal pierced with 'windows' and two rising handles. | $27 \times 28 \mathrm{cms} .$ |
|  | 368 | Carinated beak-spouted jug with ring-base. Red burnished ware. | $31 \times 19 \mathrm{cms}$. |

Level IVa House-plan in Area "CC" (Fig. A.22)
After the destruction of the house which we have described in Level IVb, some time may have elapsed before its site was reoccupied. For, when it came to be rebuilt, its walls were oriented at a different angle (Pl. XXVIIa). They were once more hardly 40 cm . thick, but the building had a more subtantial character. The plan was a simple one, consisting of a living-room (No. 5, $7.00 \times 5.50 \mathrm{~m}$.) and some sort of porch opening on to a courtyard (No. 4), which had its own entrance from the street to the north (No. 7). The main entrance also was from the street, through a small vestibule (No. 6). Both doorways were provided with wooden thresholds consisting of a single beam, having a pivot-hole at one end and a post for securing the door at the other. The door between Room 5 and the porch had two such posts and that leading to the vestibule a wooden step inside the threshold. Room 8 seems to have been a long storage chamber with a clay shelf against the west wall. The house had been destroyed by fire, but traces of burning were found only in Rooms 4, 5, 6, 7 and 8 ; so the wind was perhaps from the south.

In the plan of the living-room, No. 5, two of the circular rubbish-pits are intrusive from Level III. In the centre is a rectangular raised area measuring $3.25 \times 1.35 \mathrm{~m}$., surrounded by a kerb of wooden beams. At its east end, again slightly raised, is the domestic hearth, piled high with ashes. Beside the hearth at the east end is a shallow circular depression filled with rubbish, evidently contemporary, since a fallen beam from the ceiling lay half in it and half on the pavement beside it. In the south-west corner there is a large circular baking-oven or kiln (diam. 1.60 m .). The porch, No. 4, is partly shielded by a screen-wall on the north side, and has two clay grain-bins against the east wall. It faces evidently on to an open court, where an outside fireplace makes the centre for a group of domestic objects. This group and other points of interest in the building are separately lettered on the plan and may be described in succession.
(a) A large red storage-jar (Fig. P. 25:22) with everted rim, two handles and a ring-base, lies on its side in two pieces with the mouth facing north. Beside it a redware, trefoil-mouthed jug with single handle, stands on the floor at an angle of $60^{\circ}$, its mouth facing north.
(b) Beside an exceptionally large post-hole, stands an irregularly shaped clay grain-bin and beside it to the north a domestic hearth paved with sherds, having a terracotta pot-rest. Near the foot of the post, a flat stone quern is set flush with the floor
and on it lies a banana-shaped object of lightly baked clay. Nearby a small 4-handled carinated jug is embedded mouth-downward in the pavement and two trefoil-mouthed jugs stand beside it (Type 17). With them lies a small hone of very hard green stone, pierced at one end.
(c) In the north-east corner of the room, a segmental stone pavement with a large stone beside it had been used as a hearth.
(d) A kiln or baking-oven, with pavement and walls built of stone set in clay, opening on the north-east side on to a low brick platform. On the platform, fragments of a large storage-jar and carinated bowl. These had been broken by a falling beam, or perhaps by the wooden post whose socket could be seen in the pavement beside the brick platform. Much other fallen timber lay in the angle between kiln and wall.
(e) The central rubbish-pit contained fragments of several storage-jars, a watercooler and part of a terracotta drum of the type previously found in Level V (p. 12 and below, type 33, Fig. P. 8:17). Between the north-east corner of the room and the pit lay the fragments of another large water-cooler, broken by the fall of a beam.

Architectural remains corresponding to this level in the western part of the area ("AA"), were much less coherent. Of the walls in Square E/3 and $\mathrm{D} / 3$, oriented similarly to those of the house just described, that to the north perhaps enclosed the open court on to which the porch faced, while that to the south belonged to a neighbouring compound. Here and in the area further to the west there were no more houses; only baking-ovens or domestic hearths with household objects grouped around them. The pottery was repetitive and occasionally supplementary to that found in the Level IV a house.

## (2) Area "R" (Western Hill)

It has already been mentioned that, in Trench " $S$ " on the western summit, as many as three sub-phases could be distinguished in the Level IV occupation. This inference was confirmed by the discovery of three successive building periods during the Level IV occupation in Area " $R$ ". Owing to the careless incorporation of old walls in new buildings and the use of second-hand material, the separate structures and pavements here were by no means easy to distinguish. But it did in the end prove possible to place the various building activities of the squatter population in their proper sequence (Fig. A.24).

The first walls to be built, in front of and obscuring the Level V megaron shrine, are for convenience overlaid on the plan of that building (Fig. A.17). Their form and position seemed unrelated to it, and if as we have previously suggested, its ruins may have again been put to some sort of use, it must have been re-paved at a much higher level without bothering to remove the burnt debris of its original construction. Some equally irrelevant walls were built over the ruins of the larger Level $V$ shrine; but an open space was left between the two. This occupation is described as Level IVc.

In the second sub-phase of Level IV (IVb), a more serious attempt was made at construction, by a generation who seemed still to recollect the purpose, if not the form of the earlier religious buildings. On the site of the old megaron shrine, but misplaced a little to the east, a smaller megaron was built,


Fig. A.24. Plan of Area " R ": Levels IVa and IVb
having commendably substantial stone foundations, which afterwards survived the demolition of the walls above them. The lines of its rectangular hall ( $5.50 \times 4.50 \mathrm{~m}$.$) and the wing-walls of its porch were thus preserved;$ but, since it was in part denuded to below floor level, the position of the central doorway could not be determined, and inside nothing was certain except the existence of a hearth in the traditional position. Nevertheless, a new and significant feature had been added, not in the building itself, but facing the open porch, a little off-centre, at a distance of six metres. This was a cult-pillar or post standing upright in the ground, with a rectangular clay 5-о.р. 8
pedestal built around its base and a ritual hearth on its southern side. To emphasize its importance and its association with the megaron itself, a space between the two was covered with a pavement which incorporated some unusually large slabs of stone (such as were never found in the Level V palace) (Pl. XXVIIb).

The wooden pillar itself measured $48 \times 38 \mathrm{~cm}$. (Pl. XXIXa). Its carbonized remains were so well preserved that they projected $20-30 \mathrm{~cm}$. from the socket in which it stood and which penetrated 17 cm . beneath the pavement at this period. The pedestal was hollow, with an outer shell of clay 10 cm . thick and a filling of dried mud. It measured $139 \times 88 \mathrm{~cm}$. and stood 37 cm . high. Its off-centre position was accounted for by some small building whose wall approached to within 1 m . of it on the west side, at the same time accommodating a large baking-oven. The ritual hearth, which measured $4.00 \times 3.50 \mathrm{~m}$., had a clay kerb around it and the fragments of a red-ware storage-jar lay among the ashes. Others had stood beside the pedestal, including one vessel with a pedestal-base. There was broken pottery also in front of the baking-oven.

By the time of the third sub-phase (Level IVa) the level in front of the megaron had risen sufficiently to hide the stone pavement, but the pillar and its pedestal were still in use. Two smaller clay pedestals, perhaps for offerings, had now been placed between pillar and building. But more important was the addition of new buildings on the east side of the megaron. Dating from Level IVb, the stone foundations only had remained of two small rooms appended to the building on that side. More were now added and, to the east again of these, a new and very large ( $8.00 \times 4.50 \mathrm{~m}$.) megaron astride the west wall of the old Level V temple (Pl. XXIXb). In the plan, the new buildings added at this time seem to shape into a single architectural unit. But it is difficult to be convinced of its religious purpose. The new megaron had asymmetrically placed doors at either end, that in the north wall, admittedly, having an accumulation of pottery vessels placed outside it as though for a votive purpose. But inside it was equipped only with a centrally placed circular hearth, surrounded by domestic-looking pottery. There was more pottery in the smaller rooms approached by a third door in the west wall. and these now communicated with the side-chambers of the old megaron. An unfamiliar feature was a room adjoining the new megaron on its south-west side and having its own independent entrance. This had a basic pavement of flat stones over its middle portion, brought to a slightly sloping surface with a layer of clay, as though the room might have been used for lustration. Though the walls were nowhere more than 50 cm . thick, unusual care had been taken in the construction of this Level IVa building. They were plastered inside and out and, where the east wall of the megaron had been built across the burnt debris of the old temple, enormous stones had been found to stabilize the foundations. On the subject of whether the two megara should be regarded as perpetuating the traditional practice of arranging religious shrines in pairs, no positive conclusion was reached during the excavations.

If a postscript is to be added regarding the Level IV remains in Trench "S" and Area "A", it can only be a brief one as there is little to be said. As we have mentioned, the average depth of the total deposit was 1.75 m ., but its division into three distinct occupation levels is mainly interesting in relation to the pottery sequence which Mr. Mellaart was able to study. Such actual walls as occurred at any one level do not make a plan which is worth recording, for, in addition to their fragile and haphazard character, their remains were much interfered with by enormous grain silos, excavated to this depth from the Byzantine levels near the surface of the mound. An extract from our field-notes, made at a stage when the second occupation (Level IVb) had been reached, may make the situation easier to envisage.


Fig. A.25. Level IV, Trench "S". Dug-out room
"The whole Level IV occupation in this area presents a most curious picture of an extensive settlement occupied for several centuries by people who had no proper faculty for building. Such stone walls as are found in the trench are hardly more than two stones thick and contain occasional broken bricks from the ruins of some burnt building. Otherwise there are signs of some wattle-and-daub constructions, in one case apparently covering a 'scoop' in the ground. So far we have found no obvious domestic hearths or groups of intact pottery; only large areas of blackened or burnt earth and quantities of animal bones of the sort discarded from a kitchen."

The "scoop" dwellings were however of some interest. A very perfect example occurred in Level IVa, just beneath an early Level III pavement, and a section through it could be recorded (Fig. A.25). The "scoop" was 1.20 m . wide and 60 cm . deep. At the bottom, stratified layers of ash and clay, into which animal bones were trodden, suggested some years of occupation. Along one side a step 10 cm . wide was raised a little above this and in it were set vertical wooden posts, presumably supporting a shelter above. The face of the "scoop" behind the posts had evidently been covered with reed matting
and a coat of plaster. Where the posts had stood, large fragments of plaster survived, bearing the impression of their shape and showing that they too had been plastered. Wooden beams fallen from above could also be recognized in the filling. The length of the scoop appeared to be approximately 3 m . Twice with Level IV debris we came upon infant burials in crudeware storage-jars.

## GENERAL INVENTORY

POTTERY

## Level IV

Registration No. 236

Find-spot
E. IV. Group.
E. IV. Group.
E. IV. Group.
E. IV. Group.
E. IV. Group.
E. IV. Group.
E. IV. Group.
E. IV. Group.
E. IV. Group
E. IV. Group.
E. IV. Group.
E. IV. Group.
E. IV. Group.
E. IV. Group.
E. IV. Group.
E. IV. Group.
E. IV. Group.
E. IV. Group.
E. IV. Group.
E. IV. Group.
J. IV.
J. IV.

Coarse ware jar with two loop handles and two nipple-lugs. $\quad 19.4 \times 18 \mathrm{cms}$.
Clay funnel. $\quad 15.3 \times 13 \mathrm{cms}$.
Carinated jar with two loop handles and ring base. ht. 11.3; diam. 11.5 cms .
Wide-necked jar with two loop handles. ht. 10•7; diam. 10.7 cms .
Carinated bowl with horizontal handle. $19.5 \times 9 \cdot 5$ cms.
Miniature bowl with pedestal missing. One horizontal handle. $6.5 \times 3.5 \mathrm{cms}$.
Heating vessel on three feet. Fragmentary. Rim diam. 23.5 cms .
Beak-spouted jug in buff burnished ware. Three handles. Nipple lug. Cable mould at neck. $28 \cdot 5$ $\times 19.5 \mathrm{cms}$.
Carinated bowl with ring-base. $27 \times 12 \mathrm{cms}$.
Carinated bowl with one vertical handle. Buff burnished ware. $27 \times 12 \mathrm{cms}$.
Carinated bowl with one vertical handle. Brown wash. $23 \times 9 \mathrm{cms}$.
Beak-spouted jug, coarse ware. $29 \times 18.5 \mathrm{cms}$.
Bowl with inverted rim and ring-base. $23.5 \times 9.5 \mathrm{cms}$.
Carinated juglet with two raised bands around neck, three nipple-lugs, ring-base. $15.2 \times 12.5 \mathrm{cms}$.
Miniature carinated juglet. $9 \times 7.2 \mathrm{cms}$.
Carinated juglet with narrow ring-base. $16.5 \times$ 12.5 cms .

Miniature trefoil-mouthed juglet. Carinated, with three nipple-lugs. $5.7 \times 5.2 \mathrm{cms}$.
Carinated juglet with beak-spout. $\quad 15.4 \times 12 \mathrm{cms}$.
Carinated jug with bifoil mouth. $20.5 \times 14 \mathrm{cms}$.
Fruit-stand on pierced pedestal with two vertical handles. Cable mould. Rim diam. 28 cms .
Jug, probably bifoil, with loop-handle. Buff ware, dark red wash. diam. 14.5 cms .
Carinated juglet with loop-handle. Buff ware with burnished red wash. diam 11 cms .

| Registration |  |  |
| :---: | :---: | :---: |
| No. | Find-spot |  |
| 461 | K. IV. | Quatrefoil jug. Buff ware with orange-red wash. ht. 7 cms . |
| 462 | J. IV. | Small alabastron-shaped vessel. Two pierced lug handles. Buff ware with red wash. |
| 467 | J. IV. | Carinated jug with loop-handle. Buff ware, reddish wash. ht. 16 cms . |
| 470 | J. IV. | Carinated jug with ring-base and vertical loop-handle. Probably quatrefoil. Buff ware with buff slip. diam. 12 cms . |
| 471 | J. IV. | Biconical miniature jug. Buff ware, red wash. diam. 5.5 cms . |
| 472 | J. IV. | Plain bowl. Buff ware with red slip. $15 \times 5.5 \mathrm{cms}$. |
| 473 | J. IV. | Miniature jar with two loop-handles. Grey ware, dark grey slip. diam. 5 cms . |
| 474 | J. IV. | Biconical juglet with ring-base and loop-handle. Buff ware with reddish slip. diam. 10 cms . |
| 482 | K. IV. | Pierced and ornamented pot-stand. Fragmentary. ht. 29 cms . |
| 488 | K. IV. | Globular vessel on four legs. Pinkish buff ware with buff slip. Broad stripes of matt red paint. |
| 514 | P. IV. | Trefoil mouthed jug with loop-handle. Buff ware with red burnished slip. diam. 10 cms . |
| 515 | M. IV. | Bifoil jug with loop-handle and flat base. Buff ware, red wash. $23 \times 14 \mathrm{cms}$. |
| 516 | M. IV. | Carinated jar with ring base and two rising handles on shoulder. $27 \times 27 \mathrm{cms}$. |
| 518 | M. IV. | Bowl with plastic handles at rim. Buff ware, red burnished slip. $13 \times 4 \mathrm{cms}$. |
| 525 | P. IV. | Small jar with two perforated handles. Buff ware and orange wash. diam. $7 \cdot 5 \mathrm{cms}$. |
| 526 | P. IV. | Miniature jar with lug-handles at carination. Buff ware and wash. $6 \times 5 \mathrm{cms}$. |
| 537 | A. IV. | Small carinated jar with two high loop-handles. $10 \times 9 \mathrm{cms}$. |
| 539 | M. IV. | Carinated jug with ring-base and loop-handle, $20 \times$ 15 cms . |
| 615 | IV. | Trefoil-mouthed juglet. Red wash. $12.3 \times 10 \mathrm{cms}$. |
| 731 | Y. IVa. | Wheel-made plate with reddish yellow wash. diam. $18 \cdot 6 \mathrm{cms}$. |
| 836 | R. IVb. | Beak-spouted jug with two nipple-lugs. $25 \times 15 \mathrm{cms}$. |
| 872 | R. IVb. | Wheel-made carinated jar with ring-base and two horizontal handles. Buff ware, red wash. $29 \times$ 20 cms . |
| 889 | AA. IVa. | Colander, basket-shaped elliptical, coarse red ware. diam. $20 \cdot 4 \mathrm{cms}$. |

## CHAPTER 5

## SOME NOTES ON THE M.B.A. ARCHITECTURE OF BEYCESULTAN

Our intention here is to summarize the main details of architectural practice in Bronze Age Anatolia, of which illustrations are provided by the buildings recorded in this volume, dating from the first half of the Second Millennium в.c. In grouping these under suitable headings, an opportunity will be provided to examine comparable examples of the same practices discovered at other Anatolian sites.

The Middle Bronze Age architecture of Beycesultan has an extensive background of gradual evolution in prehistoric times. But, in tracing its antecedents, one should not expect to find a progressive standard of efficiency evenly maintained from the earliest times onwards. On the contrary, over the immensely long period of forty-or-so centuries during which the country had already been occupied by a settled population, one must allow for migratory changes and other ethnological upheavals of the sort which would result not only in technical innovations but in long periods of unsettled conditions, during which all progress was at a standstill. After the prodigies of creative invention among peoples of the Neolithic period, revealed by Mr. Mellaart's excavations at Çatal Hüyük, and their prolongation into the Early Chalcolithic at Hacılar, some ethnical change of great significance must have taken place, which temporarily eclipsed the ascending star of civilized aspiration. For, in the deepest levels of the Beycesultan sounding, which represent the beginnings of a later Chalcolithic phase, there are conspicuous signs of cultural regression and a return to the primitive living conditions of much earlier times. It is as though all the urbane attributes achieved by humanity in the two previous millennia had been suddenly eradicated and a fresh start made with the meagre resources of a village mentality. Walls are of mud brick, but the planning and appointments of the houses are elementary in the extreme. And no distinctive feature becomes apparent until the eve of the Early Bronze Age, when the "hall-and-porch" of a tiny megaron dwelling can be distinguished (Vol. I., p. 25).

Soon after this there are symptoms of a recovery in the standard of building technique, and the religious shrines which occupied the area of the sounding throughout the first and second Early Bronze phases have at least the rudiments of serious architecture. Timber elements strengthen the mud brick walls, including the metre-wide fortification in Level XIX with its four parallel runner-beams laid between the stones. Internal wall-faces are finely
plastered and one finds for the first time sophisticated devices such as wooden door-jambs and thresholds. Wooden posts, set against the walls to support beams above, are carefully concealed by plaster, while other posts, formally arranged in pairs, support screens of woven reeds. Matting also in part covers the floors, in one case some sort of felt composed of animal hair. But there is little advance in planning, and these presumably public buildings consist of little more than a single rectangular compartment with certain dependencies.

In the third Early Bronze phase we observe (with little surprise if we have accustomed ourselves to thinking of Troy as part of Anatolia), a residential lay-out consisting in a pattern of megaron-type dwelling-houses, more formally simple in plan than those which have already appeared at Lesbian Thermi and Poliochni in Lemnos, with none of the lateral accretions which had there been annexed to the main living-rooms. Already we see the main characteristics which distinguished such buildings a thousand years later in Mycenaean Greece, such as clay benches, "sleeping-platforms", central hearth and formal portico treatment: and we are reminded that far to the east at Kültepe in Cappadocia, a square "megaron-hall", with a huge central hearth between four wooden pillars, already makes the central feature of a building resembling the Mycenaean palaces. These and other minor architectural innovations have been tentatively connected with the arrival in south-western Anatolia of a Luvian-speaking branch of the then-migrant Indo-European peoples, perhaps after the destruction at Beycesultan of the occupation represented by Level XIII. All these are preliminaries to the inception at Level $V$ of the Middle Bronze Age culture, which is the primary subject of the present volume.

## Sites and Planning

In common with all mound-sites in Anatolia, both at this and at later periods, the main public buildings at Beycesultan occupy a prominent and defensible position with a high elevation. In the case of the residential palace, the only provision for defence apparent in the architecture is the double thickness of a wall on the exposed south side of the building. On the west summit however, the administrative buildings stand in their own fortified enclosure. On both summits an approximately level emplacement has been contrived for the buildings and the rise or fall in pavement level from one room to another is seldom more than can be accounted for by a few steps or a short ramp. The direction in which such buildings "faced" is of little consequence, since the outlook, through windows or colonnades and over open balconies, must invariably have been on the internal courtyards and areas, from which light also was obtained. The approach to the palace was by inclined causeways from the direction of the river-crossing, where the principal city-gate must have been located. One at least led to an entry in a re-entrant angle of the façade.

Of the palace plan little remains to be said, since its function and
character have been discussed in considerable detail elsewhere, and no comparable building of the Middle Bronze Age has so far been found in Anatolia. In an early preliminary report ( $A S$, VI, 1956), some parallels were considered with the near-contemporary palaces of Minoan Crete. But no subsequent developments during the course of the excavations have appeared conspicuously to emphasize these, save for the confirmed existence of a central rectangular courtyard, around which the various "wings" were grouped, the frequent use of light-wells and the obvious importance attributed to apartments on an upper floor. For the rest, the obvious possibility of an affinity between the building practices of Crete and western Anatolia must be allowed to speak for itself. As for the public buildings on the western hill, the remains excavated were too scanty to reveal more than a single distinctive feature. This was the entry to one building from a paved street, where a small vestibule made provision for ablutions-perhaps formal lustration-at two successive building levels.

More is to be learnt from the religious buildings in Area " R ". They occupy a much less conspicuous position in a low-lying part of the site, chosen as we have supposed on account of its proximity to the town-wall and so to the open country beyond. In the case of the larger building, as in that of the palace, there is no criterion by which its plan can be judged, since in Anatolia it is the first relic of so early a period which can legitimately be described as a "temple". Its plan seems to be a synthesis of simple elements with ritual functions about which we at present know extremely little. Only the evidence of some votary cult can be distinguished. The smaller building has at least a recognizable architectural form; and it is of no little interest to observe its identity with that which provided a basis for the design of religious sanctuaries in Greece a thousand years later. Here in fact is the primeval conception of a human dwelling adopted by tradition for the abode of a god. Stripped of its subsequent adornments, this is the primary form of a Greek temple, complete with naos and pronaos. In the position originally occupied by the domestic hearth, a simple pedestal takes the place of the cult-statue and in front of the building a cult-pillar is substituted for the external altar of "archaic" temples.

## Foundations (Fig. A.26)

In the repertory of building materials at Beycesultan, as we already know, timber played a very large part. Already in the earliest phase of the Bronze Age, tree-trunks are laid longitudinally beneath mud-brick walls and held in position with stones (Level XVI shrines). By the time of the Level V palace, walls are up to one metre thick and require more substantial support. They now have a substructure of undressed stone reinforced at intervals with timber. This in itself constitutes the foundation of the wall and, in ordinary circumstances, is not intended to rise above the ground-floor pavement level. To quote a contemporary example in a more easterly part of Anatolia, in Level Ib of the karum at Kültepe T. Özgüç speaks of houses with stone foun-
dations which "go down $c .80-90 \mathrm{~cm}$." and says that "in general the mudbrick construction begins at floor-level. " ${ }^{1}$ In the more important rooms of the Beycesultan palace this arrangement and the dimensions he quotes are the same: but here an additional provision for stability, which has to our knowledge never been found (or never been recognized) elsewhere, is the bedding of tree-trunks laid transversely to the direction of the wall, upon which the first stones are laid. They project up to 60 cm . beyond the wallfaces and there seems little doubt that the abnormally wide foundationtrench, which thus became necessary, must have suggested the introduction of a bridged-over sub-pavement passage on either side, for whatever purpose it may have been used. In any case it seems probable that this costly device was peculiar to the residential palace. For in the administrative buildings walls of equal thickness have practically no foundations at all below floorlevel, the mud brick being supported merely upon double rows of runnerbeams set in stone. In these buildings the substructure seems to occur only in certain places where the made-up ground beneath appeared unstable; notably in Area "A", where stone foundations 1.50 m . deep suddenly become necessary, and have three successive tiers of timber reinforcement. In the Area " $R$ " buildings, only sufficient stone is used to provide an adequate bedding for the first lines of runner-beams and, if they become visible aboveground, it is due merely to a change in pavement level from room to room.

Wall Structures (Fig. A.5, 10, 11 and 26)
The habit of strengthening stone or mud-brick walls by inserting at regular intervals rows of runner-beams, held in position by cross-ties, goes back at Beycesultan to the first phase of the Early Bronze Age. The elaboration of


Fig. A.26. Palace foundations and heating passage

[^10]this system by means of vertical posts, extending from the foundations to the roof and thus creating a timber-framework in the structure of the building, seems to have been an innovation in Middle Bronze Age times. It continued to be a normal architectural practice in Anatolia until the present day.

There is no doubt in the writer's mind, nor in those of Turkish architects with whom he has discussed the matter, that a secondary purpose in adopting this practice was to obtain a certain elasticity in the structure of a building, of the sort which had been proved by experience to be resistant to the effects of earthquakes. It is only in comparatively recent times that increased rigidity has been given to the framework of such buildings by the introduction of diagonal timber struts into the rectangular panels of filling. Once this is done, the outward appearance of the walls comes exactly to resemble the "half-timber" façades of mediaeval or Tudor buildings in this country. In the Bronze Age examples the panels are still strictly rectangular. At Beycesultan, as elsewhere, the brick masses between the vertical posts are interrupted only by the horizontal timbers which occur after every few courses. It need hardly be said that, even in buildings destroyed by fire (where wood is preserved by carbonization), the vertical posts themselves are rarely found to have survived in situ. In these circumstances confusion has at times been caused by the discovery of horizontally placed logs in the interstices between the brick panels. Indeed, T. Özgüç records instances ${ }^{\mathbf{1}}$ where such logs are piled one upon the other from foundations to ceiling, and are apparently substitutes for vertical posts. Yet elsewhere at the same site the posts themselves are so well attested that he can record details of the positions chosen for them and methods of fixing both at top and bottom.

Ozgüç says ${ }^{2}$ that his posts are either squared or left in the round and measure $15-25 \mathrm{~cm}$. in diameter. They are arranged singly or in pairs at intervals of $1.40-1.70 \mathrm{~m}$. and normally seated on the horizontal members which crown the stone substructure. Elsewhere, ${ }^{3}$ he illustrates various methods of doing this. He also speculates regarding the purpose of these posts, agreeing with Naumann ${ }^{4}$ that their combined strength is greater than would be necessary merely to support the weight of the roof. He concludes that their intention is mainly to support an upper floor. And here an interesting point arises; for he also records the use of posts, not imbedded in the thickness of the wall, but free-standing against its inner face upon small stone bases. This is a phenomenon which occurs frequently and without obvious explanation at Beycesultan. It is seen first in the Early Bronze Age shrines where such posts are suspected of supporting beams or other internal structures (Beycesultan I, p. 32), and in a Middle Bronze setting it occurs for instance in Room No. 4 of the "temple". It may seem strange to seek a parallel for an architectural feature of this sort in a period so far removed in time as the Phrygian occupation of Anatolia in the eighth century в.c.: but the extreme conservatism of West Asiatic builders may make this worthwhile. One sees at Gordion ${ }^{5}$ in a building known as Megaron 3, how, in spite of the extreme

[^11]thickness of the walls, wooden posts are set at regular intervals against their inner faces, as the excavators supposed, to support a gallery: and one notes their assumption that the Phrygian builders may have been "accustomed to thinking of their monumental buildings as enclosers of space, to be subdivided inside quite independently of the outer construction". Perhaps therefore Özgüç is right in interpreting such posts as supports for some element of the upper storey.

Certainly, in the palace at Beycesultan the number and position of the posts is well attested, since in places their carbonized stumps were well preserved. In Court No. 1 there was even some indication of how their bases were attached to the horizontal members upon which they rested. A square peg or tenon was found still intact in a mortice made to fit it. And one is again reminded of how, in the setting just referred to at Gordion, ${ }^{1}$ the horizontal foundation members were found to have "a socket for a tongue at the lower end of the post". An overall picture of the standard form of wall construction with vertical posts, at our own site, can be obtained from diagrams in our architectural recording of the palace and temple (e.g. Fig. A.11). The walls of public buildings on the western summit were constructed in much the same way, except that the vertical posts appeared to be missing. Parallels for both methods, with only minor differences, are to be found at other sites such as Boğazköy, Alaca Hüyük and Troy, over a period which covers almost the whole of the Second Millennium b.c. ${ }^{2}$ and they are not lacking in the towns and villages of modern Turkey. Nevertheless, it may be of some interest to note a temporary aberration in the system during the Anatolian Iron Age. In buildings of the Syro-Hittite period, for instance at Malatya and Taynat on the Orontes, one sees the proportion of timber to brickwork greatly increased. Naumann ${ }^{3}$ has collected illustrations of this, including one at Troy, where the vertical posts seem to have disappeared and their place is taken by superimposed cross-beams. In another from Zincirli the ubiquitous timbers are separated only by single rows of bricks.

## Doors and Windows

Already in the Early Bronze Age shrines at Beycesultan, doors are provided with wooden reveal linings and thresholds. In one instance (Vol. I, Fig. 18, p. 50), added to the threshold beyond the line of the wall is a wooden sill, on one end of which the door itself actually pivoted. This arrangement is exactly matched at Kültepe, ${ }^{4}$ where an upright post stands upon the opposite end of the sill to act as a door-stop. In another shrine (Vol. I, Fig. 14, p. 41) split logs, with their flat sides against the jambs, act as door-linings and this arrangement is frequently repeated a thousand years later in buildings of the Late Bronze Age on the eastern summit ( $A S$, V (1955), Fig. 2). In the Burnt Palace there is a well-preserved threshold composed of squared timbers in the "Great Hall" (p. 23 and Pl. XIVa) and relics of a panelled or lined reveal with boss ornaments. Here the door-pivot revolved in a bronze

[^12][^13]cup. In Room 34, the carbonized remains of an actual door, apparently made from a single plank of wood, have been referred to elsewhere.

Neither at Beycesultan nor at any other contemporary site in Anatolia have the walls been found standing to a sufficient height to provide evidence of windows. In the Burnt Palace, windows doubtless existed, particularly where light-wells were provided to bring sunshine and warmth to inner chambers. But so many rooms appear to have had one side open on to a courtyard that the necessity for them must have been considerably reduced. If they occurred they must have been high up in the walls: and this would particularly have been the case in the "temple" building in Area " R ", where the supposed "sanctuary", entered through two successive vestibules, would otherwise have been without light. In the Early Bronze Age shrines some sort of clerestory lighting has been suggested (Vol. I, p. 43) and the same device was suspected by the American excavators of the Phrygian megaron at Gordion. ${ }^{1}$ There is no evidence to suggest its use in the buildings which form the subject of this report.

## Columns

There is no doubt that wooden pillars must have been used in great numbers to support ceilings and upper floors in the Burnt Palace. Fragments of three had survived and of these the best preserved, in the forecourt of the "Painted Hall", shows the remarkable size of the timbers used. In this case the wood was not carbonized but dehydrated and shrunk, leaving a perfect impression of its original shape in the clay-like fill around it. In a length of 1.30 m ., it tapered from 75 cm . at one end to 63 cm . at the other. The wood could not be identified; but it is unlikely to have been the juniper which was so generally used elsewhere.

## Plaster

All walls in the palace had received at least two coats of plaster and some a further coat of white lime-wash. One saw, particularly in Room No. 2, where much of the second coat had flaked off in the fire, how the first coat was of clay tempered with straw and sand and how it was "keyed" with the fingers of the hand to take a second coat. Roof plaster, as shown by the fallen fragment of roof-covering in Room No. 14, was a great deal more coarse and freely mixed with chopped reeds (Pl. IVb).

[^14]PART II

## POTTERY

by James Mellaart

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## CHAPTER 6

## INTRODUCTION

## MIDDLE BRONZE AGE POTTERY

Levels V and IV at Beycesultan we have become accustomed to describe conventionally as "Middle Bronze Age", filling the gap between the Early and Late subdivisions of the Bronze Age. Ceramically speaking Beycesultan V might more appropriately be described as a final phase of our E.B. 3 period and IVa as the beginning of the Late Bronze Age. Level V has the closest links with VI and VII and in IVa we witness the beginning of a new phase of culture culminating in Levels III and II. The whole period in question then is a sort of transition between Early and Late Bronze Age from the pottery point of view and the subdivision "Middle Bronze Age" bears no relation to ceramic realities.

The continuity of the pottery tradition is obvious and cannot be stressed enough; not less than two-thirds of the shapes in use in Beycesultan V are of E.B. 3 origin and most of them show little difference from those found in the previous building level.

It is not until Beycesultan IVc that these old E.B. 3 shapes begin to disappear and through the three subphases of Beycesultan IV the pottery gradually develops into that of the Late Bronze Age (III-I). In IVa new tendencies become marked which culminate in III and once again about two-thirds of the IVa shapes are carried over the Late Bronze Age. ${ }^{1}$

Wheelmade pottery now predominates, except in some of the more traditional E.B. 3 shapes in Beycesultan V; and with it mediocrity. Bold innovations are rare: decoration other than a few grooves, ribs and plastic knobs, absent. Bone-burnished wares, still fine in Beycesultan V, decline rapidly in the succeeding period and it is not until Level IVa that a radial patternburnish on fine ware reappears. Sombre, red, brown and purple washes are a characteristic of this M.B.A. period and an inheritance of E.B. 3. These are always smoothed and sometimes polished, but never brilliantly so. With these dull wares goes a fair amount of plain wheelmade wares, technically perfect, but uninspiring. Coarse kitchen ware increases in Level V (most of the pottery deposits come from the palace dependencies), continues throughout IVc and IVb, but decreases in IVa, again heralding the approach of the Late Bronze Age.

But even if in general the M.B.A. pottery of Beycesultan does not call for

[^15]aesthetic comment, it is technically quite competent and better than most of the E.B. 3 wares. Degraded to common household pottery it evidently served its purpose. Only the fine black, cream, deep red and orange boneburnished wares of Level V are an exception, continuing the superior tradition of Beycesultan VIa. Many of the sombre washed wares with plain surfaces, unbroken but for a plastic handle, knob, rib or occasional groove, resemble, one fancies, tarnished copper, and its shapes and sparing decoration proclaim an utter dependence on local metalwork of somewhat sober taste. No metal vessels have been found, but the surmise is certainly legitimate and can be supported by analogies from Kültepe in Central Anatolia and Kara Hüyük in the Konya Plain, where actual metal vessels have come to light in recent excavations.

The earlier M.B.A. vessels show a preference for sharply marked and angular profiles, neat bead-rims, W-shaped handles, ring-bases and other features of a metallic origin. Gradually these wear off as the slovenly potter copied not the metal prototype but the pottery imitation. The development of the bead-rim bowl, the most characteristic shape of the M.B.A., offers an outstanding example of this process. By Level IVa a weird profile was reached, having lost all resemblance to the original metal prototype.

The influence of metalwork was not confined to bowls but is equally notable in the cups of Level V, the beak-spouted jugs and the jugs with bifoil or trefoil mouths, spouted jars, teapots, etc. Biconical shapes on small ring bases are a characteristic of the period, based on metal originals. There are relatively few shapes where a metallic origin is not obvious and most of these are in the class of storage-jars, cooking pots, etc., vessels which one would not normally produce in a material other than clay.

In spite of the ceramic gloom of this period the actual number of shapes does not suggest lack of inventiveness on the part of the potter, such as would appear to have prevailed through much of the Second Millennium at Boğazköy and other Central Anatolian sites as a sort of provincial antidote to the fertile imagination of the M.B.A. potters of Kültepe.

One cannot fail to notice the predominantly local character of the Beycesultan pottery and of that of the South-west of Anatolia in general. Developing on a late E.B.A. base with here and there an echo from the Kültepe region it remained staunchly West Anatolian.

Such resemblances as there are with areas further east-and their existence cannot be denied-would often appear to date back to earlier contacts (Levels VII-VI, E.B. 3b period, contemporary with Kültepe IV-II) rather than to direct and contemporary ones.

One can no longer ignore the fact that Anatolia is not a ceramic unity, but is composed of several culture areas, each with their own characteristics, peculiarities and developments. If an isolated pot (or object) or number of pots-as the case may be-found on a West Anatolian site, such as Beycesultan, does not seem to fit into the Central Anatolian chronological development, then one should not immediately advocate a "reappraisal of the dating of the Beycesultan material", which is based on a good and consistent strati-
graphy, but seek the reason for the occurrence of such discrepancies. A teapot found by Dr. W. Lamb at Kusura provides a good example for chronological controversy. The Kusura C pottery to which the teapot belonged was difficult to date in 1936/37 and all one could safely say was that it belonged to the Second Millennium b.c. On typological grounds the nearest parallels were found in the M.B.A. deposits of Kültepe, Alişar and Boğazköy and K. Bittel therefore concluded that unless he was mistaken the vessel should be assigned to that period. ${ }^{1}$

Other scholars, far less cautious, considered, on the strength of one "Hittite" pot, Kusura to form the western limit or even part of the "Hittite Empire", the western limit of which was recently extended to the Aegean coast on the evidence of "Hittite bead-rim bowls" ${ }^{2}$ from Bayraklı. At the time of writing Southern Turkey was archaeological terra incognita and nothing was known of the culture province to which Kusura belonged, nor had the culture province of the Konya plain been heard of. Badly dated single pieces or small groups of pottery, such as that of Kusura C, could only be dated by typological comparison. The excavations at Beycesultan have changed all this for South-western Anatolia and a series of intensive surveys have delineated the culture provinces of the greater part of Anatolia, and defined, at least in a rough outline, each culture sequence and some of its peculiarities. During the 1959 season at Beycesultan two teapots of the Kusura type were found stratified in levels IVc (M.B.A.) and III (beginning of L.B.A.), and there is every reason to suppose that they were locally made. Recently K . Bittel has drawn attention ${ }^{3}$ to some more chronological discrepancies of the same sort between similar Beycesultan and C. Anatolian shapes, but he cautiously and rightly refrains from reappraisals as long as the genesis of the S.W. Anatolian type is not clear.

There is a priori no reason whatsoever why, barring close and intensive contact between two regions, pottery developments in one area should be paralleled in another. It would indeed be surprising if they were in a country like Anatolia! There is no evidence for close contact between Central and Western Anatolia in the Second Millennium b.c., although the isolation is perhaps less pronounced than it was in the period preceding E.B. 3. Another point to be realized is the underlying unity of Anatolian pottery, sometimes more marked and sometimes less, but always there when compared to foreign countries. If a beak-spouted vessel at Beycesultan looks very much like one at Kültepe, to choose an example at random, it does not necessarily mean that Kültepe influenced Beycesultan or vice versa at that time but it is far more likely that at a certain unspecified time both cities acquired the habit of making beak-spouted vessels of that type. At most one can say that an actual import (more likely its metal prototype than the pot itself) could have given rise to a similar or identical type. As the chronological range as well as the geographical distribution of Anatolian metal vessels is a priori not likely to be

[^16]determined within the near future-unless a method is invented for the detection of royal tombs (intact)-one should exercise the greatest possible caution in the use of the typological method for chronological precision. Even more so when it is realized that there is as yet no evidence of any kind for direct contact between Central Anatolia and the South-west. There are, however, good reasons for assuming that such contacts as were maintained passed through an intermediary, the newly discovered Konya Plain province and the publication of S. Alp's important excavations at Kara Hüyük-Konya is therefore eagerly awaited.

In view of the considerations outlined above at some length, it has been our policy throughout to date the pottery at Beycesultan primarily on internal evidence, and not by typological comparison with pottery from faraway regions.

Whereas the pottery of earlier periods came almost entirely from the great sounding in area " S ", that of the Middle Bronze Age derived from a number of different areas which must now be distinguished.

Deposits of Beycesultan V pottery come from the following buildings of this period:
(a) the Great Palace (areas E, H, K, P, AA and BB) on the eastern summit
(b) a public building in S and A and
(c) a temple in area R on the western summit.
(d) Two unusual vessels came from another trench (U) situated in the hollow between the two hills which form the mound.

As the Great Palace is now thought to have been evacuated before its destruction by fire, probably through hostile action, a minimum of pottery was found on its floors. The remains of the unburnt public building in trench " $S$ " were not more productive and the only close find was that of the pottery left in the temple in area " R ". The number of complete or restorable pots of Level V was therefore disproportionately small for the enormous area excavated. Nevertheless, broken pots and sherds were found in sufficient quantities to form an adequate impression of what at least the common ware of the period was like.

In contrast, the burnt buildings of the next building Level, IVc, revealed a much greater number of complete and restorable vessels, even though the buildings erected were those of what might be described as "squatter occupation", at least on those parts of the mound as have been excavated. Few differences with the pottery of Level V could be established and it is indeed likely that such shapes as are represented in this level, but not in the previous one, had their origin in Beycesultan V. Together both building levels present a good corpus of pottery for the first half of the Middle Bronze Age.

Similarly the pottery from building-levels IVb and IVa, although a little less abundant, covers the second half of the period and the transition to the Late Bronze Age.

Chronology of the Middle Bronze Age at Beycesultan
The Middle Bronze Age at Beycesultan shows four main building-levels: V, IVc, IVb, and IVa. All the buildings of Level V excavated are of a public nature and extraordinarily solid. Only in the public building in Trench "S" two phases of construction were noted, but both the Great Palace and the Temple showed no traces of alterations or additions. In view of the absence of any excavated private houses it is impossible to determine the length of the Beycesultan V period. The solid public buildings could easily have outlasted several building levels or phases of construction of private houses, but we have no evidence for such a surmise nor for an assertion of the kind that Beycesultan V was of short duration. We have tentatively allowed a period of 150 years to Beycesultan V. In Trench " $S$ " the three superimposed strata of Beycesultan IV reached a thickness of about three metres and that in spite of the absence of substantial buildings. If one allows a century each for these three phases, the whole Middle Bronze Age at Beycesultan would have lasted about 450 years. In the absence of datable imports it is impossible to date the Middle Bronze Age more closely, but the total lack of the red-cross bowl which is such a feature of the last phases of the Early Bronze Age, both at Troy and at Beycesultan, shows that the beginning of the Middle Bronze Age at Beycesultan cannot be dated earlier than the end of Troy V, c. 1900 b.c. Thus we are provided with a useful date for anchoring our chronology:

| Beycesultan V | . | . | . | c. 1900-1750 в.c. |  |
| :--- | :--- | :--- | :--- | :--- | :---: |
| Beycesultan IVc | . | . | . | . | c. $1750-1650$ в.c. |
| Beycesultan IVb | . | . | . | c. $1650-1550$ в.c. |  |
| Beycesultan IVa | . | . | . | c. $1550-1450$ в.c. |  |

There are three points on which this suggested dating can be roughly checked. The destruction of Beycesultan $V$ was extremely thorough and in view of the might and prosperity of the settlement (undoubtedly the capital of an important kingdom, probably Arzawa), can hardly be attributed to some minor war. Now a comparison with the sacking of other important Middle Bronze Age towns early in the M.B.A., such as Tarsus and Kara HüyükKonya, both undoubtedly capitals also, points to the emergence of a new factor of great destructive power. A single radiocarbon date is available for the Palace of Beycesultan V. Calculated with the old half-life of 5568, it gave an age of $3450 \pm 150$ в.Р. or 1500 в.с. Such a date proved archæologically unacceptable, but if the date is calculated with the new half-life of 5730, which is now generally accepted as being the more correct value, a date of $1615 \pm 150$ в.द. is obtained. With the tolerance of 150 years the date could be stretched to 1765 в.c. which agrees with the estimated date of destruction around the middle of the 18th century b.c.

The destruction of this vast palace we have tentatively ascribed to hostile action and only the powerful kings of the Hittite Old Kingdom, like Labarnas or Hattusilis I, both of whom are said to have made war on Arzawa, may perhaps be credited with the destruction of Beycesultan.

Various dates have been proposed for the Hittite Old Kingdom, but whichever will eventually prove most acceptable, all come within the tolerance of the Beycesultan radiocarbon date of 150 years on either side of 1615 в.c.

The second point concerns the end of the M.B.A. tentatively put at a date around the middle of the fifteenth century b.c. In Central Anatolia this would coincide roughly with the beginning of the so-called Hittite Empire. Now there is a priori no reason whatsover why events in Central Anatolia should coincide with-let alone influence-those in the south-west of Turkey. What may be emphasized at Beycesultan is the beginning of an increased period of prosperity: the Late Bronze Age. This falls into two phases, separated by a decisive but transient break in the middle. Late Bronze Age I is represented by two main building-levels, III and II, of which the first shows as much as three sub-phases (in private houses) and the second two (in parts of the Little Palace). Late Bronze Age II (after the break which marks the burning of Beycesultan II) has two more main building levels Ib and Ia, each with at least two sub-phases in private houses.

In the absence of contrary evidence we are inclined to date the destruction of Level II to the general disaster in Anatolia which occurred at the end of the thirteenth century в.с. (с. 1200-1180 в.c.). Nevertheless the actual evidence would not rule out a date of destruction up to half a century earlier, if reasons could be found for suggesting it. The identity of the destroyers of Beycesultan II is of course unknown in the absence of historical records. We are inclined to assign a date of $c$. 1450-1300 в.c. to Level III and $c .1300-1200$ / 1180 b.c. to Level II, but like all L.B.A. dates in Anatolia these dates are approximate only. A single Mycenaean sherd found in a sherd and pebble pavement of the last sub-phase of Beycesultan III is of little help, as Dr. F. H. Stubbings writes "I think 1300 is perhaps a safe middle date, but the real date is perhaps more truly between 1360 and 1240 ". ${ }^{1}$ This estimate roughly agrees with our dating, but it also emphasizes the uncertainty still inherent in all Anatolian L.B.A. dating.

Our third and last point is perhaps a little more specific, although it introduces the dangers of comparison with other and somewhat geographically remote cultures. At Miletus, Professor C. Weickert has discovered local wares (in Level III of House 1) datable to the transition from Middle Minoan III to Late Minoan I, c. 1600 b.c. by imported Minoan pottery. ${ }^{2}$

These local wares from Miletus include numerous pieces that have their approximate counterparts at Beycesultan, mainly in building-levels IVb and IVa, which we have tentatively dated to the periods $1650-1550$ and 15501450 b.c. respectively. It would appear that these comparisons roughly confirm the chronology proposed above for Beycesultan. As Miletus is situated at the end of a route leading from the south-western plateau to the Aegean (in spite of the deep gulf which then divided the peninsula of Miletus from the Lower Maeander valley) and as we have evidence that the Lower Maeander valley was at most periods under the influence of plateau cultures in the Bey-

[^17]cesultan area, these parallels are more acceptable than those with Troy, Boğazköy or Tarsus, excavated sites geographically far more remote and not necessarily relevant for dating purposes. These local wares at Miletus include a number of cups and bowls of the plain wheelmade type (Ist. Mitt. 7, 1957, Pl. 30, 1), our "Palace ware", typical for the entire M.B.A. at Beycesultan. The rim-lugs of ibid., Pl. 29, 4 (centre) have numerous parallels in Beycesultan IVb and as this feature is confined to that building level, it may be considered chronologically significant. Shapes like ibid., p. 119, Fig. 6:4 first occur at Beycesultan in IVa and have a fair distribution all over the Beycesultan culture province and their occurrence at Miletus is perhaps significant. Fig. 6:1 also has parallels in Beycesultan IVa and many of the carinated bowls with bead rims of rather degenerate type (ibid., Pl. 29, 3 and 4) again point at Beycesultan to the second half of the south-western M.B.A., IVb and a. Many other features of the local Miletus pottery point to the existence of a regional variant of S.-W. Anatolian M.B.A. pottery in the Miletus area and D. H. French's discovery of a site near Nazili in the Lower Maeander valley with some similar and probably contemporary pottery suggests that this variant was at home in that valley. At Kavaklı Kahve he found the same tendency towards profiles like Miletus, op. cit. Fig. 6:1 and 3, but combined with more normal S.-W. Anatolian types, again not unlike pottery of Beycesultan IVb and IVa. The ribbing of some of the Miletus pottery, both of this phase and the following L.H. 1 phase (House 2) has parallels in Beycesultan IVa and is more familiar in the north-western province, where grooved and ribbed ware of this type would appear to be generally a Middle rather than Late Bronze Age feature. The heavy moulding on the carination of bowls, with or without tubular lugs (op. cit., Pl . 29:2) has still no known parallels and may represent a local peculiarity.

With the full publication of this pottery more parallels may emerge, but it is already evident that during the second half of the M.B.A. the Beycesultan region had resumed contact with the Aegean coast through the traditional channel of the Lower Maeander valley.

## Relations with North-Western Anatolia in the M.B.A.

Cultural relations with the north-western province, always existing and strengthened, as we have seen in the previous volume, on at least two occasions (beginnings of E.B. 2 and E.B. 3) by ethnic bonds, continued without a break into the Middle Bronze Age.

A number of important routes led from the S.-W. province to the lowland regions of the north-west and of these the route leading from the Upper Maeander valley via the Buldan gap to the valley of the Hermus and so eventually to the west coast is by far the most important. The natural end of this road lay at Izmir and the excavations at Bayraklı Tepe, north of the modern town, have in fact revealed important remains of Second Millennium date. Although the Bayrakli pottery has not yet been published in a final form, there is already sufficient evidence available for a discussion of M.B.A. relations with Beycesultan.

At the time of writing Bayraklı is the southernmost site known of the north-western culture province, at least for the period with which we are here concerned. No details are yet available of the number of building levels of the Second Millennium, their contents or their external affiliations. ${ }^{1}$ A comparison of the pottery published or exhibited in the Izmir Museum with that of the well-stratified site of Troy or the more ambiguous deposits of this period from Thermi and Larisa shows a number of significant variations and differences, such as might perhaps be expected in view of its extreme southern position. That a number of these features have exact parallels at Beycesultan is important and shows that the trade route through the Hermus valley was in operation. Equally important may be the apparent lack of grey "Minyan" ware in the earlier phases of the Second Millennium, which presumably would correspond to our Middle Bronze Age. Instead red, buff and cream ware is said to predominate. Neither at Miletus nor anywhere in the south-western M.B.A. province is grey ware in evidence, whereas further north it is a characteristic feature of the Second Millennium as a whole.

Among the features shared by M.B.A. Beycesultan and Bayrakli the use of the so-called imitation handle on carinated bead-rim bowls and invertedrim bowls is the most outstanding. Derived from inland E.B. 3 prototypes, ${ }^{2}$ it is not yet known from the maritime north-western provinces of the same period. However, its distribution in the M.B.A. north-west is so far confined to Bayraklı, but a related ornament, a vertical bar on inverted-rim bowls also occurs in the neighbouring plain of Manisa. Elsewhere in the northwestern province its absence, together with that of the inverted-rim bowl, is

Map 1. Distribution of South-West Anatolian Middle Bronze Age sites
List of sites. Same numbering as in Beycesultan, vol. I, with new sites named in full, not numbered. Some North-west Anatolian sites added to show a round outline of their distribution.

| 1. Beycesultan | 99. Hacıkebir | 152. Uzunpinar | 225. Sürütme Çiftliği |
| :---: | :---: | :---: | :---: |
| 3. Yassı H. I. | 100. Akpinar | Keramik | 226. Karaçayir |
| 7. Karaca | 101. Ortaca | Karamusa | 229. Tolca |
| 8. Civril | 103. Haydarlar | Ishakli-Elmalı | 230. Kireli |
| 12. Kesilmis | 106. Yalnizsaray | 154. Anayurt | 231. Eflatun Pinar |
| 14. Bekirli I | 107. Geçek | 155. Mahmutköy | 232. Beyşehir Hüyük "C" |
| 15. Bekirli II | 109. Abya | 157. Ağzıkara | 235. Burun H. |
| 16. Akköprü | 113. Tatarmuhat | 159. Tatarl | 236. Liz Hüyük |
| 17. Pinar H. | 116. Karacaahmet | 160. Alpaslan | 240. Karahisar |
| 20. Büyükpınar-Burgaz | Tavşanh | 172. Nuhköy-Karatas |  |
| Elmacik | 117 Köprüoren | 173. Nuhköy-Akpınar | Eskişehir group |
| Dutluca | 117. Yenice | 175. Kozluca |  |
| Akkeçili | 118. Maltepe | 176. Sorkun | Demirköy |
| Yıkık | 119. Egret | 177. Emirhisar | Bozüyük |
| 28. Iney Kolossai | 120. Beyköy | 178. Mirtaz 179. Huzai Hammam | Cukurnisar |
| 29. Karakurt | 122. Yokarı Dandirı | 180. Sandiklı | Cerkes Cukurhisar |
| 30. Sarayköy-Ưzerlik | 123. Bozhüyük | 183. Kusura | Kara Hüyük |
| 31. Hamidiye | 124. Gazligol | 185. Ekinova | Hamidiye |
| 32. Kavaklı Kahve | 125. Ismailköy | 186. Afşar | Arapören |
| 36. Medet | 126. Sadikbey | 189. Dinar | Katirkulesi |
| 38. Kızılhisar | 127. Cakir North | 194. Bozhüyük. | 161. Midas City (Yazılıkaya) |
| 39. Yassi H. II. | 128. Chakir East | 195. Pınarbaşi Gölü | 163. Sarrbayir |
| 43. Seller | 129. Çapak | 196. Incetepe | 166. Manahoz |
| 44. Güney | 134. Kınnık Mezar | 197. Tulutepe | 167. Tez |
| 45. Mancarl | 135. Salar | 205. Göndürler | 169. Bademlı |
| 46. Geberen | 136. Cobanlar Kadıyerı | Egridir |  |
| 47. Dereköy II. | 137. Çobanlar Kadıyük | 214. Akçasar | Konya Plain group: western outliers |
| 49. Gencal | 138. Feleli | 217. Gelendost | 251. Koca Hüyük |
| 60. Tefenni-Hüyük | 140. Kumrallı | Iskele H. | 253. Ortakaraviran II. |
| 70. Karaali Çiftliği | 141. Bolvadin | 220. Cavundur | 254. Yalıhüyük |
| 93. Eugla (Kızlar) | 142. Disli | 221. Orrdekçi | 255. Kayacik |
| 98. Ișikler ("Emet") | 148. Geyzen | 222. Salur | 256. Kızılviran <br> 257. Sizma |


conspicuous. At Beycesultan this form of ornament-both imitation handle and vertical bar $(s)$-is confined to the first half of the M.B.A. during the Second Millennium. Here its origin can be traced back to building Level VIII, and it is far from impossible that, could E.B. 3 levels be examined in the Izmir-Manisa region, the same development might be traced there also, for the E.B. 3 culture of that region is in many respects closely related to that of the Upper Maeander valley. So whatever their ultimate origin, a measure of contact seems to have been maintained during the M.B.A., and, on Beycesultan evidence, more precisely during its first half (Levels V and IVc).

We are less well informed about parallels during the second half of this period, during which we have been able to demonstrate contact with the Aegean coast through the Lower Maeander valley. Carinated bead rim bowls with a rib occur at Bayraklı and Larisa ${ }^{1}$ and their popularity at Beycesultan falls in exactly this period (Figs. P. 12, 13).

The evidence is admittedly slender and again we await the publication of the Bayraklı material for more evidence. Judging by an increase of contact with the north-western province during the Late Bronze Age, it would be fair to assume that contact was maintained also during Beycesultan IVb and IVa.

Although it has been customary in the past to draw every available parallel while publishing material from a newly excavated site, recent developments, such as the intensification of field surveys and its resulting increased knowledge of patterns of distribution would seem to argue heavily against the value of, let us say, comparing the pottery of Beycesultan with that of Troy. In the past, when so little was known about Anatolia, such a procedure might have seemed legitimate; at present, I would contend, it is not. In focussing the "foreign" relations of Beycesultan a comparison with that of the nearest known site in "foreign" territory is relevant, as one still cannot draw the "frontier" between the S.-W. and N.-W. provinces in detail. In doing so the differences can be emphasized and the relations stressed, but to do so with a site like Troy which is several hundred miles away and in any case remote within the N.-W. province itself is not likely to produce worthwhile results, as the resemblances or differences with nearer parts of the province are of more intrinsic value than those with areas geographically remote, which in the nature of things are likely to produce all kinds of peripheral peculiarities. Throughout Anatolian prehistory local variants are prominent and conspicuous but the strong underlying unity of north- and south-western Anatolia cannot be denied. To compare extreme sites like Troy and Beycesultan is to emphasize differences such as do not prevail in intermediate areas. In any case one would like to see a Second Millennium sequence from a N.-W. Anatolian site which is not encumbered with imitation Mycenaean shapes, which e.g. reduces the value of Troy (VI late) as a type-site. This blemish does not, however, attach to the M.B.A. deposits there; but it is suspected that the sequence is not quite complete.

[^18]
## Contact with the culture province of the Konya Plain

During our archaeological survey of the Konya Plain ${ }^{1}$ it was established that the carinated bowl with plastic imitation handle also occurred here at a number of Bronze Age sites. More recently this specific type has made its appearance at the excavated site of Kara Hüyük, some 8 km . south of Konya. There it appears not infrequently in building-levels V and IV, which on present evidence would tend to be contemporary not with the M.B.A., but with the later part of the E.B. 3 period. Consequently this resemblance is no help in establishing cultural relations during the Middle Bronze Age, unless it can be demonstrated that the type remained in use and was accompanied by other distinctive shapes. As Kara-Hüyük is still unpublished, no use can be made of the new evidence, and in any case it would appear from the material that the strongest links with the Konya Plain at this period lay with its eastern rather than with its western neighbours. It would appear that as the Second Millennium advanced the Konya Plain province gradually moved out of the orbit of West Anatolian cultures to become more and more dependent on developments further east in the region south of the Halys of which the Kayseri region appears to have at all times been the cultural centre.

## Distribution of the South-Western Anatolian culture province

The distribution of M.B.A. sites of S.-W. affinity or type is illustrated in the map, p. 77. On the basis of the Beycesultan stratigraphy not less than 115 sites can already be listed with material which we would with confidence attribute to the Middle Bronze Age.

This contrasts well with the 80 sites previously known in this area during the E.B. 3 period, and the general character of Beycesultan, which remains the only important site excavated in the area, suggests a gradual increase in prosperity after the low ebb of the previous period. How the destruction of this capital site (Beycesultan V) was reflected in the record of other sites in the area is still wholly unkown, but there certainly is no lack of Beycesultan IV occupation and the destruction may not have been general or its effects permanent.

A further point in need of emphasis is the homogeneity of culture, as far as that can be deduced from numerous surface finds. Unlike the situation prevailing during the exceedingly prosperous E.B. 2 period, the M.B.A. remains appear to allow for no marked subdivision into regional variants and in this the M.B.A. continues the E.B. 3 tradition of an apparently homogeneous culture. This does not mean that there are no variants-this would indeed be surprising-but such variants are not reflected in the repertoire of shapes as known at present. Only excavation can establish them if they exist. The map here shown uses the following criteria as a basis for attribution to the M.B.A. :

[^19](a) wheel-made simple "Palace" ware of Beycesultan V-IV type,
b) sharply carinated bead-rim bowls and plastic imitation-handles,
(c) inverted rim bowls with or without similar ornament,
(d) rim-lugs on bead-rim bowls,
(e) carinated bowls with inturned flattened rim.

All these are features peculiar to the M.B.A. in the south-west of Turkey which disappear at the beginning of the Late Bronze Age there, and as such they are (if and when encountered together) good criteria for the presence of M.B.A. occupation.

The distribution then of the S.-W. M.B.A. culture province extends from the lower Maeander valley to Beyșehir and from the Burdur region to the plain of Tavşanlı and Kütahya. The Eskişehir Plain was probably also included, but the amount of material so far discovered is small and its inclusion in this province is therefore still somewhat uncertain.

Another province, that of the Konya Plain now extends over the Çarşamba valley between Beyşehir and Seydişehir and over the hill country which lies between it and the western edge of the Konya Plain proper.

North of this area, the cultural affinities of the region extending from Akşehir eastward and northward are still undefined.

## Middle Bronze Age wares and fabric

With the exception of some coarse or archaic vessels, the Middle Bronze Age pottery of Beycesultan and that of the south-west of Anatolia in general is fashioned on the fast potter's wheel.

Clays are predominantly buff or light pinkish red in colour and contain an admixture of small grits. Straw is unusual except in very coarse fabrics and the pottery is on the whole thin and well fired. Nevertheless, grey cores are still not uncommon, but much less so than in the previous periods. Surface treatment varies according to class of which five varieties may be distinguished throughout the period:
(1) burnished fine wares, usually with a bone-burnished slip of black, grey, deep red, orange, buff or cream colour. This is a hang-over from the E.B. 3b period (Level VI) and gradually disappears after Level V, although it is still found as late as Level IVb. Other burnished slip wares occur, but are less obvious and difficult to distinguish from the finer polished wash class.
(2) Buff wares with a red, buff, brown or purplish wash. This is the most common fabric of the M.B.A. and again derives from the fabrics of the E.B. period. A polish is perhaps more common than in that period, but by no means universal. In the last phase of the M.B.A. (IVa) this wash tends to be lustrous and frequently is pattern-burnished with lines going up and down or radially arranged on both the exterior and interior of bowls and plates, or as horizontal streaks on the outside of bowls. More often than not, the wash is smoothed and presents a rather dull surface. Grooved or incised ornament, when found, is applied before the vessel was slipped. The process
of applying this slip is either by dipping, so that the whole vessel is coated, or it is applied by brush, usually to the exterior and as a band round the mouth of the vessel.
(3) Plain buff wares are very frequent and their surface is smoothed. Bases are frequently cut off the wheel by means of a string, leaving a spiral or asymmetrical shape. Often these wares are very thin, our "eggshell" class, which is frequently provided with a wash.
(4) Coarse wares are another prominent feature of the Middle Bronze Age, appearing in greater number than before. Most of these are of a gritty red, buff or brown ware, with no surface treatment except a faint smoothing.
(5) Cooking pot wares, though belonging to the same class, are frequently distinguished by a strong micaceous element in the clay, which may have helped to make the pot fire-resisting. Their colour is normally blackish brown.

These five wares are found throughout the Middle Bronze Age and only the first shows signs of diminished popularity as the period proceeds. Technically these M.B.A. wares form a link between the extremely similar wares of the E.B. 3 period and the finer lustrous wares of the L.B.A., where technical superiority is achieved by the application of a lustrous wash of micaceous origin. Ceramically speaking the period from E.B. 3 to the end of the L.B.A. (i.e. from about $2300-1000$ в.c.) presents an unbroken development in southwestern Anatolia, which differs essentially both from the Late ChalcolithicE.B. 2 tradition of slipped and burnished wares with straw temper and heavy walls and from the painted wares of the succeeding Iron Age.

## CHAPTER 7

## BEYCESULTAN V POTTERY

Figs. P.1-11 and Pottery Sheet 1 in folder at end of volume
The pottery of Level V shows so many connections with that of Level VIa, the last of the E.B.A., and so few innovations, that it is quite evident that we have here a normal and uninterrupted development.

Characteristic for this earliest phase of the Middle Bronze Age are boneburnished wares, red or brown wash wares, thin plain buff wares so frequent in the Palace that it became known as "Palace Ware" and of course the now rather ubiquitous coarse wares.

As in the previous volume, the pottery will be described by shapes. A list of shapes of the main phases of the M.B.A., and a table of their occurrence throughout the period, showing their relation to E.B. 3 and L.B.A. wares, are provided separately in a folder at the end of this volume.

Shapes

## Bowls

1. Bead rim bowl (old E.B. 3 shape 36, Trojan shape A.23) on flat or ring base. Now without the groove below the rim. Occurs both with a sharply metallic and carinated profile or with a more rounded one. The "bead" rim varies from a round one, as in the E.B.A., to a more flattened form. This shape occurs with or without handle, horizontally or obliquely set to the rim and is frequently ornamented with an "imitation handle" in relief or with vertical bars, knobs or ridges.

It is by far the most common bowl shape at the beginning of the M.B.A.

> Examples: Fig. P.1:1-15

Fig. P.2:1-21.
The rich variety in shape should be noted, as well as the presence of a rare spouted variety (Fig. P.2:18) and the complete absence of the red-cross bowl, common in the previous phase on shapes like Fig. P.2:7-10. The incised crescent (Fig. P.2:17) is rare in the south-west, but occurs more frequently at Kara Hüyük in the Konya Plain, though in earlier (E.B. 3) layers.

Excavations at Kültepe (Kanesh) near Kayseri in Central Anatolia have now revealed the actual metal (copper or bronze) vessels from which this common shape was copied. In the karum Ib Level, dating approximately 1850-1800 в.c., were found vessels of this type both with the metallic sharp carination (Belleten, XIX, 1955, 73, p. 68 and Fig. 58) and with the rounded convex one (ibid., Figs. 60, 64) and the deep shape (ibid., Fig. 61), reminiscent of our Fig. P.2:18-19.

The metallic prototype, long suspected, has now actually been found, and not
only at Kültepe, but also in roughly contemporary levels at Kara Hüyük-Konya (unpublished). The "imitation handle" so frequent on this type of bowl, since Level VIII, may be compared to actual metal handles of very similar shape from the Kültepe karum Ib (ibid., Fig. 67-68).
2. Bowl with inverted rim. Old E.B. 3 shape 45; Trojan A. 12 shape (Troy V variant). This shape seems to have a flat base and occasionally lugs (Fig. P.3:8, 19) or handles (Fig. P.3:10). More frequently it is plain but for "imitation handles", bars, crescents and knobs in relief. Very common shape.

Examples: Fig. P.3:8-16, 18-20.
3. Shallow bowl. E.B. 3 shape 46 . This shape is nearly always made in the boneburnished ware and often has two handles of triangular section. Occasionally shallow incised dashes are found as in Level VIa (e.g. Fig. P.3:2). Common shape.

Examples: Fig. P.2:22-28.
Fig. P.3:1-7.
4. Shallow carinated bowl with broad flat-topped rim. This is a new shape that first appears in Level V. With its flat rim which frequently projects a little inward to prevent splashing it would have been a useful container for liquids. None of these bowls has handles. The shape is common in the first half of the M.B.A.

Examples: Fig. P.3:21-27.
5. Simple bowl with curving side and one handle. E.B. 3 shape 4-4a; Trojan shape A.16. This E.B.A. shape is now rarely found.

Example: Fig. P.3:17.
6. Bowl with vertical rim. E.B. 3 shape 6; Trojan shape A.18. This E.B.A. shape is now very rare. No examples illustrated.
7. Bowl with concave rim and two strap handles rising above the rim. Cf. E.B. 3 shape 49 (cup); Trojan shape A.94. This is essentially a new version of an old metallic shape, and not very common at Beycesultan.

Examples: Fig. P.4:1-3.
8. Shallow dishes. E.B. 3 shape 39. Dishes or small bowls of this type are exceedingly common and obviously formed a great percentage of the normal kitchen ware of the period.

Examples: Fig. P.4:4-8.
9. Plain wheelmade buffware, "Palace Ware". E.B. 3 shapes 39, 48. These bowls are a hallmark of the M.B.A. period. String-cut bases are prominent, but ring bases also occur. Ordinary kitchen products.

Examples: Fig. P.4:9-24.
10. Eggshell bowls. Common in this period, this class is a finer version in diminutive size of the previous class, with a better finish.

Examples: Fig. P.5:1-17.


Fig. P. 1 Beycesultan V. Carinated bead-rim bowls

## Cups

Like the bowls, the cups and goblets of the M.B.A. in south-western Anatolia continue the local E.B. 3 tradition. The metallic origin of these forms is evident and indisputable. Some of these M.B.A. examples with high strap handles, carinated bodies and a small ring-base are eminently graceful.
11. One-handled cups. E.B. 3 shape 9. This shape has lost in popularity since the E.B. 3 period and two-handled cups are more common. It varies in shape and like its predecessor it has a loop handle of round section. One coarse and abnormal cup (Fig. P.5:22) had a pinched lip for pouring sideways, a feature we have observed in certain jugs of Level IX (E.B. 3 shape 33).

Examples: Fig. P.5:18-22 (small cups) and Fig. P.6:3 (large version).
12. Two-handled cups. E.B. 3 shape 37 , cf. 23. This is by far the most typical cup shape at the beginning of the M.B.A. in south-western Anatolia. Some of the examples still have the E.B.A. loop handles, but metallic strap handles prevail. Ribbed ornament, like that of E.B. 3 shape 23 is still occasionally found, e.g. Fig. P.5:30 and P.6:4, 5. Once again both small and large forms occur side by side. Knobs on the highest point of the strap handles are not infrequent (Fig. P.5:28 and P.6:2), and it is not difficult to see how more adventurous potters, both at Kültepe and Troy, turned these handles into the likeness of animal heads biting into the rim of the vessel. Nowhere in the south-west of Anatolia, however, have such forms been found.

Examples: Fig. P.5:23-28, 30-31; P.6:1-2, 4-6.
13. Goblet or two-handled cup on pedestal base. Although only one example could be reconstructed (Fig. P.5:29), the presence of pedestals (Fig. P.6:7-11) is widespread enough to suggest that the shape was not unpopular.
14. Shallow Cup. E.B. 2 shape 6 (rare in E.B. 3).

Example: Fig. P.3:10.

## Jugs

The three varieties of E.B. 3 jug-beak-spouted, bifoil and trefoil mouthedcontinue into the M.B.A. without much change. The evidence from Level V is not rich nor of very good quality. That better vessels were once present is attested by numerous burnished spouts.
15. Beak-spouted jugs. E.B. 3 shape 15. The few more or less complete beakspouted jugs from Level V are shown in Figs. P.6:12-17 and P.7:1-2. Biconical

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\text { FIG. P.1. Beycesultan V. Carinated bead-rim bowls }
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All pottery is wheel-made, unless stated otherwise


Fig. P.2. Beycesultan V. Bowls of various types
bodies (type a) and short spouts (type b) are notable without reaching the metallic proportions of the Level VIa or the IVc ones. One coarse example (Fig. P.6:12) bears a form of decoration normally confined to metal vessels and is ornamented with an incised cross on the base, a practice reminiscent of E.B. 3b.

The beautifully proportioned spouts (Fig. P.7:3-7) would have belonged to similar vessels of better quality than to the ordinary domestic ware here illustrated.

Compared to the magnificent beak-spouted vessels of Central Anatolia (Kültepe karum II and Ib) or the Konya Plain (Kara Hüyük II and I), Beycesultan makes a poor impression, but it is not impossible that metal vessels took the place of these poor ceramic products in the palace.

The absence of the beak-spouted jug among the pottery of Troy VI has been noted, but as pottery vessels of this shape are known from surrounding areas (e.g. Hanay Tepe in the Troad), not too much importance should be attached to this. Once again metal vessels may have taken its place. It is noteworthy that the pottery of Beycesultan V is poor, whereas that of Levels IVc-a is well developed. This is extremely suspicious, as Level V is that of Beycesultan's greatest prosperity, whereas the following phases are, strictly speaking, less important, though not as povertystricken as has been maintained. I suggest that the wealth of metal objects was responsible for the role which pottery played during Beycesultan V. Only with the destruction of the city did pottery regain its proper place in the economy of the settlement. If parallels are needed for such a phenomenon, I should refer the readers to the pottery made at Alaca at the period of the famous Royal Tombs. Once again, the discrepancy is most striking. In the Bronze Age, the quality of the pottery is not necessarily the only standard by which civilization should be judged.
16. Bifoil-mouthed jugs. E.B. 3 shape 28. This metallic shape, common in Level V , calls for little comment.

Examples: Fig. P.7:8 and 14 (?).
17. Trefoil-mouthed jugs. E.B. 3 shape 29. Like the previous shape, this one is of metallic origin and probably even more common. One often wonders whether the

Fig. P.2. Beycesultan V. Bowls of various types
All pottery is wheel-made, unless stated otherwise

1. Buff ware, red wash
2. Buff ware, black core. Red wash
3. Hand-made, buff ware, red wash
4. Buff ware with red wash on interior and brown on exterior
5. Buff ware, red wash
6. Buff ware, red wash
7. Buff ware, grey core. Polished buff wash
8. Buff ware, grey core. Polished red slip
9. Buff ware, red burnished slip (bone-burnish)
10. Buff ware, cream bone-burnished slip
11. Buff ware, deep red burnished slip.
12. Buff ware, red wash
13. Buff ware, brown wash
14. Buff ware with orange bone-burnished slip
15. Buff ware, buff polished
16. Buff ware, brown wash
17. Buff ware, polished red wash. Incised crescent
18. Plain greenish buff ware
19. Buff ware, red wash
20. Buff ware, horizontally polished red wash
21. Buff ware, polished brown wash
22. Buff ware, polished red wash
23. Buff ware, red wash on interior, brown on exterior
24. Black bone-burnished ware
25. Deep red slipped and bone burnished ware
26. Black bone-burnished ware
27. Deep red bone-burnished slipped ware
28. Buff ware, brown wash

Nos. 9, 10, 14, 24-27 are of the bone-burnished class, as in Beycesultan Level VIa


Fig. P.3. Beycesultan V. Bowls of various types
potter deliberately distinguished between bifoil and trefoil mouthed vessels at this period.

Examples: Fig. P.7:9-13.

## Spouted vessels

These fall into two groups: the "teapot" and the spouted bowl with basket handles. Whereas the first has an open spout the second is distinguished by having a strainer in the spout.

The use of a strainer has often been assumed to indicate beer drinking, but the small size of these vessels rather suggests that they served for brews made of herbaceous herbs (mint, thyme ada çay, fruit juices with a flavouring, etc.) just as are found in Turkey to this day.
18. "Tea-pot". E.B. 3 shape 41. No complete example was found and the spouts show the existence of more than one type.

Examples: Fig. P.8:1-3.
19. Basket-handled jar with strainer spout. This is a new type which now makes its first appearance and which will remain in use throughout the Second Millennium b.c.

Examples: Fig. P.8:4-6.

## Jars

Storage jars of all forms and shapes are a great feature of the Middle Bronze Age period. All are provided with lugs or handles to tie on a cover without which no storage jar is of any use. Lids are as rare as in the E.B.A. and only small vessels of a distinctive type are provided with this ceramic refinement.
20. Small jars with offset neck and lid. Rare shape.

Examples: Fig. P.8:9, 10; P.9:1.
21. Two-handled jars. Very common shape throughout the M.B.A.

Examples: Fig. P.8:13-16.

## Fig. P.3. Beycesultan V. Bowls of various types

All pottery is wheel-made, unless stated otherwise

1. Black bone-burnished ware
2. Black bone-burnished ware
3. Buff ware, red wash
4. Buff ware, buff wash
5. Buff ware, red wash
6. Light grey bone-burnished ware. Black core
7. Pink bone-burnished ware
8. Black bone-burnished ware
9. Red bone-burnished ware
10. Plain buff ware
11. Plum red bone-burnished and slipped ware
12. Hand-made coarse red ware
13. Hand-made buff ware, red wash
14. Buff ware, red wash
15. Red slipped bone-burnished ware
16. Fine deep red slipped and bone-burnished ware
17. Buff ware, red wash
18. Hand-made buff ware, red wash
19. Black bone-burnished ware
20. Buff ware, red wash. Four or five ribs. From BB. V. 1, 2
21. Buff burnished ware
22. Brown wash ware
23. Buff ware, red wash
24. Buff ware, red wash
25. Buff ware, red wash on interior and exterior
26. Buff ware, grey core. Rather coarse red burnished slip. R. V. 6, 9
27. Black burnished ware


Fig. P.4. Beycesultan V. Two-handled bowls and "Palace-ware" (4-24)
22. Small jars with or without lid. With or without lugs. Essentially a small version of shape 21. Not common.

Examples: Fig. P.8:11-12.
23. Globular jar with two handles and short neck. Large and rather coarse.

Example: Fig. P.9:3.
24. Tall ovoid jars with short neck and everted rim. A quite common shape in Beycesultan V, but nevertheless suspected to be possibly of foreign origin. Never with handles.

Examples: Fig. P.9:2.
25. Large storage jars with short everted neck and two handles. Common type. Arrangement of handles varies.

Examples: Fig. P.9:6 and 8.
26. Large storage-jars entirely ornamented with knobs. Same shape as 25, but differs in ornamentation. Infrequent.

Examples: Fig. P.9:4, 7.

## Pithoi

27. Large pithos with grooved or rope decoration. With or without two small handles.

Examples: Fig. P.10:6, 7 (ornamented with bands of paint), 12, 11 (plain).
28. Plain pithos without handles. Frequent in palace (Lustral room etc.).

Example: Fig. P.10:10, 13.
29. Bag-shaped pithoi with wide mouth. E.B. 3 shape 44 . Frequently with two small handles, crescents, etc. in relief.

Examples: Fig. P.10:4, 5, 8.
30. Short wide-mouthed pithos. One or two pairs of handles. Fig. P.10:9.

## Cooking pots

These are of two main types (shapes 31 and 32) of which the second is ingeniously provided with a horseshoe-shaped potstand.
31. Cooking-pot. Two crescent-shaped ledge handles, knobs and ribs below rim, imitating a metal vessel.

Examples: Fig. P.10:2.

Fig. P.4. Beycesultan V. Two-handled bowls and "Palace-ware" (4-24) Wheel-made

1. Red bone-burnished ware
2. Buff ware, buff wash
3. Bone-burnished red slipped ware. BB. V. 1, 2
4. Fine red-brown polished wash
5. Buff ware, red wash
6. Orange-red polished wash
7. Buff ware, red wash
8. Buff ware, red wash on exterior and rim
9. Reddish-buff polished wash. From lustral room in Palace
10. Buff ware, red wash
11. Plain buff ware
12. Plain buff ware Nos. 11-24 are
13. Buff ware, brown wash
14-24. Plain buff ware "Palace ware"


Fig. P5. Beycesultan V. Bowls and saucers in "Eggshell ware" (1-9);
"Palace ware" (10-17) ; and cups and goblets (18-31)
32. Cooking pot with stand. Each with two handles and two decorative crescents in relief.

Examples: Fig. P.10:1 and 3.

## Miscellaneous

33. Drum. The remarkable object, Fig. P.8:17 was found in the ruins of the abandoned Burnt Palace, in such a position that it was evident that it had fallen from the roof. It was intact and thus enabled us to understand and reconstruct the shape of a number of varied forms from later building levels of the M.B.A. (Figs. P.23:2-4, 29:3).

A skin was evidently stretched across the mouth of the drum and fastened round the numerous "horns". The presence of two handles at the lower end of the vessel is unexplained. The vessel will not stand by itself and must have been played by a seated person holding it on his lap.

## Painted sherd (Fig. P.9:5)

A single painted sherd was found with decoration in mauve-black paint on a buff ware, hardly smoothed. As painted pottery is not found in Second Millennium S.-W. Anatolia, the sherd or rather the closed vessel to which it belonged, may be regarded as an import from an as yet unidentified source (Cyclades?).

## Two rhytons from " $U$ " $V$ (Pl. XXXII)

The fantastic pots shown in Fig. P.11:1-2 are unique, not only at Beycesultan, but in the whole of Western Anatolia, where ceramic abnormalities are by no means lacking. One should only remember the "bird vessels" of the Yortan culture or their relations from Beycesultan VIa (Vol. I, Fig. P.67:12, 13) and similar vessels recently found at Kara Hüyük-Konya (unpublished), which may be of about the same period.

However, these two vessels are different in that the libation is poured out through an exaggeratedly long tail, and not through the mouth of the animal. An opening in the back below the handle allowed them to be filled. It is unknown in what rite such vessels were used.

The bird rhyton (Fig. P.11:Ia-c) is complete and shows a bird with two outstretched wings, in which the feathers are indicated by shallow grooves. It stood on two feet with three toes, but its balance was so precarious that the potter added a third.

Fig. P.5. Beycèsultan V. Bowls and saucers in "Eggshell ware" (1-9) ; "Palace ware" (10-17) ; and cups and goblets (18-31)

1. Buff ware, buff wash inside and out
2. Buff ware, red wash inside and out
3. Buff ware, red wash
4. Buff ware, reddish-buff wash
5. Buff ware, red wash
6. Buff ware, polished orange red wash
7. Buff ware, red wash
8. Buff ware, buff wash
9. Buff ware, orange buff wash
$10-15$. Plain buff ware
10. Buff ware, red wash
11. Buff ware, brownish buff wash
12. Buff ware
13. Buff ware, red wash

[^20]

Fig. P. 6 Beycesultan V. Handled cups, pedestals and beak-spouted jugs

Evidently familiar with the elementary fact that birds have but two legs, he "solved" the dilemma by adding a boot with upturned toe, a well known Anatolian feature, but somewhat incongruous in this case. Head and toes are well modelled, nevertheless it would be difficult to identify the species of this bird, and the result is frankly Mesozoic.

Judging by the surviving fragments, an anatomically more up-to-date creature was depicted in the second rhyton (Fig. P.11:2). With the head unfortunately missing, the sex of the animal portrayed is abundantly clear, though not the species. The legs support the idea that it was a bull. Unhampered by anatomical difficulties the potter here achieved a vessel which stood firmly on the ground.

These two vessels are the only ones from the M.B.A. at Beycesultan which evidently were used in some rite. It is unfortunate that both were found in a pit (in Trench " U ") and out of context.

Fig. P.6. Beycesultan V. Handled cups, pedestals and beak-spouted jugs

1. Buff ware with gold mica. Highly polished buff wash. H. V.
2. Hand-made buff ware, brown wash
3. Buff ware, red wash
4. Smoothed pale pink ware. R. V.
5. Burnished brown ware. BB. V.
6. Plain buff ware. BB. V.
7. Buff ware, red wash
8. Grey ware, black core
9. Buff ware, red wash
10. Red ware, red wash
11. Buff ware. Palace, Room 15
12. Coarse buff ware, incised. Courtyard of Palace
13. Gritty buff ware. Palace, Room 10. BS. 54, 198
14. Coarse buff ware. Palace, Room 16. BS. 55, 267
15. Burnished red slip ware. R. V. 2, 25
16. Smoothed red ware. R. V. 6,18
17. Coarse gritty buff ware. Palace, Room 10. BS. 54, 199


Fig. P.7. Beycesultan V. Beak-spouted jugs, spouts and jugs with bifoil or trefoil mouths

1. Red ware. R. V. 4, 18
2. Bright red burnished slip. S. V. BS. 56, 621
3. Hand-made, red wash. From upper floor in S. V.
4. Buff ware, buff burnished slip. Palace
5. Buff ware, fine red burnished slip. Palace
6. Buff ware, brown wash. Palace
7. Coarse red ware.
8. Burnished red wash ware. BB. V.
9. Coarse reddish ware, black-brown slip. BB. V.
10. Red burnished ware. BB. V. 1, 2
11. Red wash ware
12. Burnished red ware. Palace, Room 14
13. Buff ware, grey core. Smoothed red surface.
R. V. 4, 16
14. Buff ware, grey core, red smoothed surface.
R. V. 4,8


Fig. P.8. Beycesultan V. Fragments of "teapots", small jars, larger two-handled jars and a drum (17)

1. Red burnished slip, buff ware
2. Buff ware, red burnished slip
3. Plain buff ware
4. Buff ware, brown wash
5. Buff ware, red wash
6. Gritty buff ware, smoothed surface
7. Plain buff ware
8. Buff ware, buff wash
9. Coarse grey ware
10. Orange buff ware, grooved line
11. Plain buff ware
12. Buff ware, red wash
13. Hand-made buff ware, red wash
14. Buff ware, orange wash
15. Red ware, black core, red smoothed surface
16. Buff ware, polished red wash. R. V. 6, 3
17. Buff gritty ware, smoothed. BS. 54, 195


Fig. P.9. Beycesultan V. Storage jars and a unique painted sherd Scale as shown ( $\frac{1}{8}$ ) except No. 5 ( $\frac{1}{4}$ )

1. Red ware. R. V. 3
2. Pale pink ware. Pale pinkish yellow scraped surface. R. V.1, cf. R. V. 4, 7
3. Coarse red ware. R. V. 15
4. Coarse buff ware. R. V. 4, 3
5. Painted sherd. Matt black paint on buff surface
6. Buff ware, red wash. R. V. 4, 4-5
7. Coarse buff ware. R. V. 6, 5
8. Red ware. R. V.


Fig. P.10. Beycesultan V. Cooking-pots (1-3, $\frac{1}{4}$ scale), storage jars and pithoi (4-9 and 10-13, $\frac{1}{20}$ scale)

1. Cooking pot. Micaceous reddish clay. Red to black surface. R. V. 6, 4
2. Cooking pot. Smoothed buff ware. R. V. 4, 6
3. Cooking pot. Micaceous reddish clay. Red to black surface. R. V. 4, 1
4. Coarse red ware. R. V. 12
5. Cooking pot. Brown ware. R. V. 4, 12
6. Buff ware, red to brown polished wash.
7. Orange-red ware, smoothed. Bands of red paint. Palace, Room 9
8. Coarse red ware. R. V. 20
9. Red ware
10. Coarse red ware. R. V. 6,10
11. Red ware
12. Pale red ware, smoothed. Palace
13. Smoothed red ware. Palace, Lustral Room R. V. 4, 2


Fig. P.11. Beycesultan V. Rhytons in the shape of fantastic animals Buff ware with a fine red burnished slip

## CHAPTER 8

## BEYCESULTAN IVc POTTERY

Figs. P.12-23; Pottery Sheet 2 at end of volume in folder.
The pottery of Level IVc comes from the immediate reoccupation after the disaster that overwhelmed the prosperous city of Level V. The basis for our stratification is the great stratigraphic deposit in Trench " S ", amply supplemented by the important buildings in Area " R " and two deposits in houses built over the burnt Palace (over Room E V/16) and in area "CC" IVc.

In general, its character is very much like that of the Level V pottery, but the evidence is richer and less fragmentary. It would appear that the pottery of IVc, added to the less voluminous remains from Level V, together give one a fairly good idea of early Middle Bronze Age pottery in south-west Anatolia. There is no appreciable change in the different fabrics.

Out of the 33 shapes recorded for Level V, 25 continue into Level IVc and only 6 new shapes (34-39) were noted. Most of the shapes that did not survive into Level IVc (3, 4, 6, 11-14, 26, 30) were shapes of E.B. 3 type. (See table of occurrence, in folder).

It is clear that whatever the cause of the destruction of the city of Level V may have been, it had no perceptible influence on the pottery development, which pursued its normal course.

## Shapes

## Bowls

1. Bead rim bowl. This is still the most common form of bowl. It would appear that the sharply carinated type is far more common than the rounded profile. Also, the bead rims have a tendency to be flattened out like those of shape 3. Handles, where present, are still mostly obliquely set to the rim, but a new feature is the handle set vertically (Fig. P.12:12). Knobs, bars and "imitation handles" in relief are still a feature, which will only disappear in the next ceramic phase.

The slit in handles where they are attached to the bowl should be noted, for this is a feature that is found in north-west Anatolia also.

Examples: Fig. P.13:1-12 (sharply carinated); Fig. P.2:6-12 (rounded).
2. Bowl with inverted rim. This shape is getting less frequent than before, but is still quite common.

Examples: Fig. P.12:1-5. "Imitation handles" still occur.


Fig. P.12. Beycesultan IVc. Carinated bowls
4. Shallow carinated bowl with flat-topped rim. This has a very frequent occurrence in Level IVc.

Examples: Fig. P.13:13-27, and 28-3D, transitional to a new shape (35).
*7. Bowl with concave rim. Several varieties occur in Level IVc (Fig. P.14:1, 2, 4); forms with one or two handles, set at different angles to the rim.

One specimen (Fig. P.14:3) is provided with a short pedestal; others (e.g. Fig. P.14:6) show different forms of handles.
*34. Pedestal bowls. In view of its earlier popularity in Western Anatolia, the reappearance of the pedestal bowl after the ceramic eclipse of the E.B. 3 period, was not unexpected and one doubts whether the metal prototype of this vessel had ever really gone out of use. The Middle Bronze Age form under which it here appears owes much to metal and from now onwards we shall witness a great development of this shapeespecially during the Late Bronze Age. Its non-appearance in Level V is probably sheer coincidence. Two main types may be distinguished on the basis of the pedestal: (a) Bowls with short, plain and unperforated pedestal (Fig. P.14:3, 5, 7) and (b) those with high, profiled and ornamented pedestals. These are provided with several openings (Fig. P.15) in two rows. Most of the bowls of this shape would appear to have two handles rising above the rim, vertically or at an oblique angle. The alternate ribs and grooves on the specimen illustrated in Fig. P. 14:5 are unusual at Beycesultan, but are characteristic of the Middle Bronze Age of north-western Anatolia. The splendid vessel, Fig. P.15:2, has a bowl with bead rim (shape 1: Trojan shape A.56). The rivets on the handle are unusual and otherwise only found on the straphandles of cups of shape 12 in Level V.
8. Shallow dishes. This shape continues in red wash ware and red burnished slip ware. It is still very common.

Examples: Fig. P.16:1-9.
9. Plain wheelmade bowls. "Palace ware". Still very common.

Examples: Fig. P.16:10-21.
10. Eggshell ware. Common and identical in shape with that of Level V (Fig. P.5:1-17). Not illustrated.
*35. Shallow bowls with bevelled rims. This is a new and still rare shape, evidently developed from shape 4.

Examples: Fig. P.13:31 and cf. transitional types ibid., 28-30; cf. also the atypical specimens, Fig. P.16:8, 10.

Fig. P.12. Beycesultan IVc. Carinated bowls
Wheel-made buff ware with various surface treatments

1. Polished red slip
2. Buff bone-burnished
3. Red burnished
4. Red wash
5. Red burnished
6. Buff wash
7. Buff burnished
8. Red wash
9. Red burnished
10. Brown burnished slip
11. Brown burnished wash
12. Grey core and deep red burnished slip


Fig. P. 13 Beycesultan IVc. Bowls of various types
*36. Bowl with strainer spout. Although perhaps already present in Level V, the spouted bowl, usually with strainer spout, appears in full force in this building-level.

Examples: Fig. P.13:33-34. The bowl is of the bead rim type with two handles.

## Cups

From the absence of cups (shapes 11-14) in Level IVc-a, one must assume that these essentially E.B. 3 shapes had gone out of fashion. In Level IVb we shall see that a new form of cup appears with a quatrefoil mouth (shape 40).

However, the presence of several pedestals, such as occurred in the previous building level on shape 13, Fig. P.16:22-25, 29, may show that this shape still continued during this period. On the other hand, these pedestals may have belonged to a different sort of cup or chalice of which no rim pieces have been preserved. This is a small problem that cannot yet be solved with the evidence at our disposal.

## Jugs

15. Beak-spouted jugs. (a) biconical; (b) pear-shaped; (c) tall. Of these three varieties found in Level V the pear-shaped one in coarse ware has compeletely disappeared, but both other forms flourish New is the appearance of a small foot (e.g. Fig. P.17:3, 7), but a faint ring base is most frequent. Biconical forms predominate, but size and profiles vary considerably as a glance at Fig. P. 17 shows. Ribbed necks and rivets betray metal origins. In comparison to Central Anatolia or the Konya Plain spouts are of moderate size and the same is the case throughout north-western Anatolia. Exceptions are Fig. P.17:3 and P.18:4. Hardly two vessels are the same and the little group, Fig. P.18:1-3, from the same room is unusual. With only one example of each shape further subdivision is unprofitable. All can be classified under shape 15a, except Fig. P.17:4, 7 and 8, which on account of their size fall in category 15c.
16. Bifoil-mouthed jug. This common shape has now adopted the biconical shape of the beak-spouted jug of the full M.B.A.

Example: Fig. P.20:7.

Fig. P.13. Beycesultan IVc. Bowls of various types Wheel-made buff wares

1. Red burnished. BS. 55
2. Buff wash
3. Bone-burnished red slip
4. Bone-burnished red slip
5. Red burnished slip
6. Red burnished slip
7. Red wash
8. Red-brown wash
9. Brown wash
10. Orange wash
11. Red bone-burnished slip
12. Deep red bone-burnished slip
13. Dark brown wash
14. Buff ware, plain
15. Brown wash.
16. Dark brown wash
17. Red wash
18. Dark brown wash
19. Red burnished slip
20. Buff wash
21. Red wash
22. Brown wash
23. Dark brown wash
24. Blackish brown wash
25. Plain buff ware
26. Brown wash
27. Red wash
28. Red-brown wash
29. Burnished buff ware
30. Plain buff ware
31. Fine brown burnished slip. BS. 54, 29
32. Reddish wash. CC. IVc. Room 1
33. Coarse red ware
34. Red polished ware


Fig. P.14. Beycesultan IVc. Bowls with handles and pedestals Wheel-made buff wares

1. Brownish buff wash. BS. 54, 266. Room over Palace Room 16
2. Red burnished slip. CC. IVc. Room 4
3. Buff wash
4. Blackish brown wash. BS. 54, 265. Room over Palace Room 16
5. Buff wash
6. Brown wash
7. Buff wash

Fig. P.15. Beycesultan IVc. Pedestalled bowls
Wheel-made ( $\begin{aligned} & \text { 2. Buff ware, grey core, brownish buff surface, } \\ & \text { 1. Buff ware, orange wash. From CC. IVc. }\end{aligned}$
BS. 54, 303


Fig. P.16. Beycesultan IVc. "Palace-ware", pedestals, funnel, etc.

## Wheel-made buff wares

$1-3$. Red burnished slip
4-9. Red wash
10-21, 26, 29. Plain buff wares
22. Light grey ware
23. Red polished wash

24, 25. Red wash
27. Coarse ware sieve
28. Typical string cut base. Cf. no. 16


Fig. P.17. Beycesultan IVc. Beak-spouted jugs Wheel-made buff wares

1. Polished red-brown wash. From deposit above E. V. 17. BS. 54, 300
2. Orange reddish wash. From deposit above E. V. 17. BS. 54, 291
3. Red burnished slip. BS. 54, 294
4. Deep red wash
5. Buff burnished ware
6. Red wash. B.S. 54, 292
7. Fine red-brown burnished slip. BS. 54, 368
8. Red-brown wash


Fig. P.18. Beycesultan IVc. Beak-spouted jugs
17. Trefoil-mouthed jugs. This shape, always more common than the previous one, is well illustrated by deposits from this level. Evidently it has become the rival of the beak-spouted jugs in popularity. It greatly varies in size, and in profile we again find the marked biconical or the more rounded form, which we have already observed in shape 15. Metallic features are again clear.

Examples: Fig. P.19:1-8, P. $20: 1-4,6$.
*37. Oval-mouthedjugs. A rare shape. Fig P.20:5 and 8.

## Spouted vessels

18. Teapot. A small handleless teapot is shown in Fig. P.20:10. Far more interesting is a teapot (Fig. P.20:11) of Central Anatolian shape in local ware, unfortunately not complete. The cut-away spout (Fig. P.20:12) also betrays C. Anatolian influence.
*38. Feeding bottle. This is a variant on the previous shape (Fig. P.20:9).

## Jars

The most common jar by far is now shape 21. Shape 20 with lid, a survival from the E.B.A., has disappeared and shape 22 can only with difficulty be distinguished from that of 21 (cf. Fig. P.21:1 and 2). Jars of shapes 23-25 continue, but the knobbed jars, shape 26 , have disappeared.
21. Two-handled jars, small to large size. Very common, and frequently with a distinct biconical profile, characteristic for this ceramic phase. Ribs, cable pattern, knobs and bars look metallic.

Examples: Fig. P.21:1, 3-11.
22. Small jars. Difficult to distinguish from shape 21.

Examples: Fig. P.21:2 with lugs, rather than handles, as in Level V. Fig. P.22:1, an abnormal shape.
23. Globular jar with two handles and short neck. Only represented by rim fragments: Fig. P.22:2.
24. Tall ovoid jars with short neck and everted rim. Represented by numerous rim fragments; Fig. P.22:3-6.
25. Large storage jars with short everted neck and two handles. Possibly represented by rim fragments: Fig. P.22:7.

## Pithoi

27. Large pithos with grooved or rope decoration. A very fine specimen with plastic bands, grooved crescents and wavy lines, is illustrated in Fig. P.23:6.
28. Plain pithos without handles, and

## Fig. P.18. Beycesultan IVc. Beak-spouted jugs <br> Wheel-made buff wares

| 1. Red-brown polished wash. CC. IVc. | 3. Reddish brown polished wash. CC. IVc. |  |
| :--- | :--- | :--- |
| Room 4. | 4. Buff burnished slip. Deposit over E. V. 16. |  |
| 2. Orange-red polished wash. | CC. IVc. | BS. 54,263 |
| Room 4. |  |  |



Fig. P.19. Beycesultan IVc. Jugs with trefoil mouths Wheel-made buff wares

1. Brown wash, burnished. CC. IVc. Room 1
2. Pink wash. CC. IVc.
3. Red-brown wash. CC. IVc. Room 4
4. Reddish brown wash. CC. IVc. Room 4
5. Red wash. CC. IVc.
6. Polished red wash. R. IVc. 5, no. 1
7. Red-brown wash. CC. IVc, Room 1
8. Buff wash. S. IVc. BS. 56, 615


Fig. P.20. Beycesultan IVc. Jugs with trefoil or bifoil mouths, "teapots" and funnels Wheel-made buff wares

1. Red wash. Deposit over E. V. 17. BS. 54, 296
2. Red wash. BS. 54, 295
3. Burnt buff ware. Deposit over E. V. 16. BS. 54, 241
4. Red-brown wash. BS. 54,155
5. Micaceous grey ware, buff surface. BS. 54, 257
6. Buff wash. BS. 54, 235
7. Brown, mottled buff, black wash. Deposit over E. V. 16. BS. 54, 301
8. Red wash. Deposit over E. V. 16
9. Polished red wash. R.V. 6, 12
10. Plain buff ware
11. Polished purplish-brown wash. CC. IVc.
12. Buff burnished ware
13. Red wash. CC. IVc. Room 4
14. Buff burnished wash. BS. 54, 237


Fig. P.21. Beycesultan IVc. Two-handled jars Wheel-made buff wares

1. Black burnished wash. BS. 54, 238. Deposit over E. V. 17, no. 11
2. Red to buff wash. BS. 54, 239. Deposit over E. V. 17, no. 6
3. Red-brown wash. Deposit over E. V.
4. Poor red wash. R. IVc.
5. Red ware. R. IVc.
6. Red wash. R. IVc. 6
7. Vile brownish yellow wash
8. Coarse ware with greyish-red surface.

BS. 54, 236. Dep. over E. V. 17, no. 5
9. Red-brown wash. One-fifth nat. size. Deposit over E. V. 17, no. 12
10. Brown wash. Deposit over E. V. 17, no. 9
11. Brownish buff wash. Deposit over E. V. 17


Fig. P.22. Beycesultan IVc. Jars and cooking pots

1. Buff ware. Asymmetrically placed handles.
CC. IVc.

2-4. Plain buff ware jars
5-6. Buff ware, red brown wash
7. Plain buff ware
8. Cooking pot. Micaceous clay. R. IVc, no. 3
9. Cooking pot. Gritty micaceous clay. Deposit over E. V. 16, no. 15. BS. 54, 242
10. Blackish brown micaceous ware


Fig. P.23. Beycesultan IVc. Drums and decorated pithoi
29. Wide-mouthed pithos are represented by numerous fragments, not here illustrated.
30. Short wide-mouthed pithos with one or two pairs of handles. A fine specimen with incised decoration is shown in Fig. P. $23: 5$.

## Cooking pots

31. Cooking pot. Two specimens from Level IVc are remarkable for their elaborate decoration: Fig. P.22:10 and P.23:1, the sort of barbotine which distinguished jar shape 26 in Level V.
32. Cooking pot with stand. Fig. P.22:9 shows the kind of cooking pot already familiar from the previous level and ibid., 8 shows a variant with tubular spout.

## Miscellaneous

33. Drum. Numerous fragments of drum were recovered from Level IVc, Fig. P.23:2-4. Fig. 23:3 once again has the slashed cable pattern which appears to be a feature of the pottery of this building-level.
*39. Funnel. This useful vessel makes its first appearance in this level.
Examples: Fig. P.16:26 and P.20:13, 14.
A metal one of very similar shape, but provided with a strainer, occurs in Kültepe karum Ib (Belleten XIX, No. 73 (1955), Fig. 65).

Sieve. A sieve or colander of coarse ware is illustrated in Fig. P.16:27.

Fig. P.23. Beycesultan IVc. Drums and decorated pithoi

1. Micaceous brown burnished ware.
J. IVc.
2. Buff ware with polished surface. E. IVc.
3. Buff ware with orange-pink wash. K. IVc.

Two different vessels
4. Buff ware, burnished pinkish buff wash. CC. IVc.
5. Buff ware, orangy red polished surface. Incised decoration K. IVc.
6. Buff ware, reddish buff smoothed surface Shallow grooved decoration S. IVc.

## CHAPTER 9

## BEYCESULTAN IVb POTTERY

Figs. P.24-30; and Pottery Sheet 3 at end of volume in folder.
With Beycesultan Level IVb we reach the second half of the M.B.A. In wares and fabrics there is little change and we still find red and brown wash wares, plenty of plain wheelmade buffs, but an increase in burnished red, brown and buff ware. The features that distinguish Level IVa, transitional to the L.B.A., are not yet apparent and the development from Level IVc is gradual. More and more old-fashioned shapes $(2,3)$ become rare and the ubiquitous bead-rim bowl (shape 1) shows signs of degeneration.

Out of 31 shapes recorded for this period, 22 continue from the previous period, and 9 (40-48) are new (see table of occurrence, in folder).

A characteristic feature of Level IVb is the "rim lug", Fig. P.24:5-15, which is confined to this building-level and therefore a highly distinctive chronological feature. A comparison of Fig. P.24:1 and 2 with ibid., 6 and 11 shows clearly that the "rim lug" is in reality a degenerate crescent in relief. With the overwhelming appearance of the "rim lug", the older forms of decoration (Fig. P.24:1-4) fall into disuse.

## Shapes

## Bowls

1. Bead-rim bowl. This remains the most common bowl shape, even though degeneration is apparent in the badly finished rims (e.g. Fig. P.24:18-23) but side by side with these examples we find classical ones (e.g. Fig. P.24:15). This bowl still occurs with or without handles and the obliquely placed handle was never ousted by the vertical one, as was the case in N.W. Anatolia (Fig. P.24:36-38; P.25:22 and 26:4).

Examples: Fig. P.24:1, 2, 5-8, 10-14, 15-24, 25-27, 29 without handles.
2. Inverted rim bowl. This shape is now very rare.

Examples: Fig. P.24:3, 31-35.
4. Shallow carinated bowl with flat-topped rim. This shape also is now most infrequent.

Examples: Fig. P.24:4, 14 (?), 28, 30.
7. Bowl with concave rim. Fairly common.

Examples: Fig. P.25:11-21.
8. Shallow dishes. This red burnished shape is now less often found.

Examples: Fig. P.25:7-10.
9. Plain wheel-made ware. There is a notable decrease in the popularity of this once ubiquitous class.

Examples: Fig. P.25:2-6.
10. Eggshell ware. This continues, though it cannot be said to be common.

Example: Fig. P.25:1.
34. Pedestal bowls. These are definitely present, though not well documented, for both high and low pedestals were found.

Examples: Fig. P.26:2 and 3.
35. Plates. Very rare indeed and none absolutely certain from this level.
36. Deep-spouted bowl. A few examples only: Fig. P.26:1 and 5.

## Cups

*40. Quatrefoil cup. One specimen of this new cup shape was found in Level IVb Fig. P.28:1.

## Jugs

15. Beak-spouted jugs. Judging by the examples found there is an increase in size. Both the biconical (Fig. P.17:2, 3) and the large type (Fig. P.27:1, 4-6) continue from the previous level. Ribs or cable patterns round the neck are noticeable and the size of the spouts has increased. The shape is as popular as before and will remain so throughout the rest of the Second Millennium b.c.
16. Bifoil-mouthed jugs. These are of exactly the same shape as in Level IVc (Fig. P.28:3, 4).
17. Trefoil-mouthed jugs. The rarity of this shape (Fig. P.28:2) in this level is probably incidental.
*41. Round-mouthed jug. Rare example: Fig. P.28:13.

## Spouted vessels

18. Teapot. Only known from spout fragments; not illustrated.
19. Basket-handled jar. With or without strainer spout. Only fragments; not illustrated.
*42. Spouted jar. New shape with two handles and well marked neck. Fig. P.26:6.

Jars
21. Medium-sized jars. Less common in this phase than before. Fig. P.28:9.
22. Small jars. (Note difficulty of distinguishing them from previous shape).

Examples: Fig. P.28:5-8, 11. Miniatures with lugs are common in this building-level.

Unusual jar: Fig. P.28:12.
9-о.р. 8


Fig. P.24. Beycesultan IVb. Bowls of various types
*43. Four-handled jar with offset neck. Unique. Fig. P.29:1.
*44. Small jar with ram's head in relief Unique. Coarse ware. Fig. P.28:10.
*45. Large storage jar with two handles and ribbed neck. This is a new and metalliclooking shape. Fig. P.29:2 and 6. The first example has two horns (decorative?).
*46. Large jar with ribbed neck. Unique. Not illustrated.
*47. Large two-handled jar with wide mouth. Fragments only.
23. Globular jar with two handles and short mouth. Although far from globular we have classified Fig. P.30:2 under this heading.

## Pithoi

28. Plain pithos. With two handles. Fig. P.30:3.

Four-handled pithos. One example: Fig. P.30:1.
29. Wide-mouthed bag-shaped pithos. Common shape, but one complete example; Fig. P. $30: 4$.

## Cooking pots

31. Cooking pot. With spout. Fig. P.29:5.
32. Cooking pot on three feet. This may be a development from the cooking pot on a stand.

Example: Fig. P.29:4.

## Miscellaneous

33. Drum. Upper part of a drum with cable pattern. Fig. P.29:3.
*48. Pinched lamp of Syro-Palestinian type. Fragment; like Fig. P.36:3. This shape looks very strange in south-western Anatolia and even though it is unlikely that anyone would like to import such an ordinary object, we may assume that it was brought home by some traveller or merchant from the Levant.

Fig. P.24. Beycesultan IVb. Bowls of various types
Bowls, all wheel-made, of buff ware with various surface treatments

1-2. Plain buff ware
3. Plumred bone-burnished slip
4. Yellow, mottled red bone-burnished slip
5. Brown wash

6-7. Red wash
8. Polished brown wash
9. Buff ware

10, 11. Red wash
12-15. Buff or brown wash
16. Red wash
17. Red-brown mottled wash
18. Plain red ware

19, 20. Red wash
21. Brown wash
22. Red-brown wash
23. Brown wash

24-26. Red wash
27. Plain buff ware
28. Dark red wash
29. Darkbrown to black wash
30. Black wash

31, 32. Brown wash
33. Red wash
34. Red polished slip
35. Buff polished slip
36. Buff polished slip
37. Red wash
38. Red wash


FIG. P.25. Beycesultan IVb. Bowls of various types
Wheel-made buff wares with red and brown washes

1. Red-brown wash
2. Dark brown wash
3. Brown wash
4. Brown wash
5. Red polished wash
6. Red wash
7. Brown wash

8-10. Red wash
11. Red-brown wash

12-14. Red polished slip
15. Micaceous red wash

16-17. Red wash
18. Brown wash
19. Red wash
20. Red-brown wash
21. Buff wash
22. Red wash
23. Fine red burnished slip. BS. 58, 872.
R. IVb

Fig. P.26. Beycesultan IVb. Spouted bowls and pedestalled bowls
4. Polished red wash. S. IVb.

CC. IVb.


Fig. P.27. Beycesultan IVb. Beak-spouted jugs Wheel-made buff ware

1. Red wash
2. Burnished red wash. R. IVb.
3. Polished red wash. R. IVb magazine
4. Black core. Reddish buff surface. R. IVb.
5. Red wash. S. IVb.
6. Buff ware. S. IVb.


Fig. P.28. Beycesultan IVb. Kantharos, jugs with plain round or bifoil or trefoil mouths and jars Wheel-made buff ware

1. Polished buff ware. R. IVb.
2. Brown wash. R. IVb.
3. Reddish buff wash. S. IVb.
4. Coarse brown ware. R. IVb. B.S. 57, 731
5. Red wash
6. Pink wash. CC. IVb
7. Plain buff ware. S. IVb.
8. Plain buff ware. R. IVb.
5, 6, 7. Brown wash. R. IVb.
9. Coarse ware. R. IVb.


Fig. P.29. Beycesultan IVb. Storage jars, drum and cooking pots

1. Buff ware, polished orange wash. CC. IVb.
2. Pale buff plain ware. R. IVb.
3. Pink ware, polished pink surface. CC. IVb.


Fig. P.30. Beycesultan IVb. Pithoi

1. Coarse buff ware, black core, red wash. S. IVb. (child burial)
2. Buff ware, dark brown wash. S. IVb.
3. Buff ware, red wash. S. IVb.
4. Coarse red ware, R. IVb.

## CHAPTER 10

## BEYCESULTAN IVa POTTERY

## The transition to the Late Bronze Age

Figs. P.31-37 and Pottery Sheet 4 at end of volume in folder.
With Level IVa we reach the last phase of the M.B.A. and the approach of the L.B.A. is well reflected in the ceramic repertoire. The transitional character of the pottery of this level is marked not only in the shapes, many of which forestall L.B.A. types, but also in the ware and fabric. At the same time, most of the features which characterized the early and middle phases of the M.B.A., have now either gone or have been transformed to such an extent as to be hardly recognizable.

Among the fabrics such typical M.B.A. wares as red and brown washed and plain wares are still common, but the bone-burnished ware is virtually gone. Washes now have a faint tendency to become lustrous through the admixture of micaceous particles, a technique which does not become common until the L.B.A. A streaky red wash is characteristic, and so is the beginning of radial and pattern burnish.

In shapes also, the really typical ones of the period are those which continue and develop during the L.B.A., not those that had been common before. Among these we may cite shapes $7,35,40,49,50,51,52$, as very representative. It must be emphasized, however, that the development is gradual and local, without any foreign interference or influence whatsoever.

Out of the 25 shapes recorded for Level IVa, seventeen were found in the previous phase and only eight (shapes 49-56) are new. Of these 25 shapes, all but three or four continue into the L.B.A. (Level III). When, on the other hand one compares the shapes of Level IVa with those of Level V, one finds that not more than a dozen shapes (out of 56 for the whole M.B.A.) are common to both.

## Shapes

## Bowls

1. Bead-rim bowl. This still remains the most common bowl (Fig. P.31). It occurs in every size and with a variety of bases, including short pedestals (Fig. P.31:9). These latter types must almost certainly be considered the ancestors of the chalices and fruit-stands of the L.B.A. Rims of bead-rim bowls in Level IVa defy definition; almost anything is now possible (see various profiles Fig. P.31:1). New in this level are forms ibid., 1 F-I, N and Q-R and Fig. P.32:12. Very common is a softening of
the old crisp profile to forms like Fig. P. $31: 2$ and Fig. P.32:5, 6, 7, 14 (new shape 50) a development from the bead-rim bowl.

The study of the development of the carinated bead-rim bowl in all its chronological phases is an essential pre-requisite for the field archaeologist working in Western Anatolia, for it is the shape most commonly found and most widely spread during the end of the Early and the entire length of the M.B.A. period. No other shape by itself provides such a reliable "guide fossil". The following three new shapes are developments from shape 1.
*49. Large grooved carinated bowls. A new shape and a large variant of shape 1, with distinct ornament. Continues into the L.B.A. (Level III).

Examples: Fig. P.34:1-3 (unless 3 is really a large jar).
*50. Bowls with overhanging rim. This is a new development from shape 1. Continues into L.B.A. Rivet-like knobs on rim are not infrequent. Pattern or streaky burnish and occasionally a lustrous wash are mostly associated with this shape, which is very common.

Examples: Fig. P.32:1-4 (A-J).
*51. Basins with two handles. Essentially a larger form of the previous shape. Not infrequent in this building-level.

Examples: Fig. P.34:5, 6.
Shapes 2 and 4, already rare in Level IVb, are now extinct.
7. Bowl with concave rim. This shape also becomes much modified in Level IVa and the rim is now mostly vertical and often hard to distinguish from shape 1 in its latest guise.

Examples: Fig. P.32:9 with concave rim; 8 and 10 in modified form; 5-7 in an intermediate form resembling shape 1 .

This shape continues into the L.B.A. and radial burnish is frequent.
8. Shallow dishes. This shape is now comparatively rare (e.g. Fig. P.32:10) and tends to resemble the previous one. These bowls, often with radial burnish, strongly resemble the chalice bowls of the beginning of the L.B.A. which may have developed out of this shape through the addition of a stem.
9. Plain wheel-made ware. Although the shapes of this class have not changed, the appearance has been altered by the now common application of a red wash.

Examples: Fig. P.33:10-26.
10. Eggshell ware. This is still common and preserves its high quality.

Examples: Fig. P. 33:1-9. Continues into Level III of L.B.A.
35. Plates. This is a very characteristic shape of Level IVa and one of those that reaches its greatest popularity in the L.B.A. Pattern burnish is very common.

Examples: Fig. P.32: 13, P.33:27-36.
36. Spouted bowl. Fragments only. Not illustrated. Cup
40. Quatrefoil cup. This shape, rare in the previous phase, has greatly gained in popularity. It continues into the L.B.A.

Examples: Fig. P.36:7, 8, 10.


Fig. P.31. Beycesultan IVa. Carinated bowls

## Jugs

15. Beak-spouted jug. The "new look", so pronounced in the bowl shapes of this period, is equally notable among the jugs. Unfortunately our evidence is confined to fragments. Of these only two (Fig. P.35:1,2) are comparable to M.B.A. jugs of this type.
*52. Bearded beak-spouted jug (Fig. P.35:3-5). They show the bold bearded spouts which are a feature of Levels III and II of the Late Bronze Age. The incised and grooved ornament and the use of knobs, rivets, bars etc. points to the same new tradition. It is interesting to observe the gradual increase in the size of spouts through the M.B.A.
16. Bifoil-mouthed jug. No examples. It would seem that this shape has gone out of use.
17. Trefoil-mouthed jug. This shape, as common as before, has now reached its L.B.A. form. One small jug (Fig. P.35:6) is ornamented with stripes of red paint, another (Fig. P.35:11) with pattern burnish.

Other examples: ibid., 9, 12, 13.

## Spouted vessels

18. Teapot. No extant examples, but probably present, for teapots continue into the L.B.A.
19. Basket-handled spouted jar. Examples: Fig. P.36:9, 11, both with open spouts. Jars
20. Medium-sized jar. Atypical examples: Fig. P.36:1-2, 4.
21. Small jars with lugs. Examples: Fig. P.36:5, 6.
*53. Ribbed jar. A new shape and unique. Fig. P.36:7.

Fig. P.31. Beycesultan IVa. Carinated bowls
Wheel-made buff ware bowls

| 1. a-r (A. IVa.) | o. Pink wash |
| :--- | :--- |
| a. Dark brown wash | p. Dark brown wash |
| b. Polished buff ware | q. Fine red burnished |
| c. Plain buff ware | r. Smeary red wash |
| d. Plain buff ware | 2. Fine polished buff ware |
| e. Red wash | 3. Redbrown wash |
| f. Dark brown wash | 4. Red wash |
| g. Polished red wash | 5. Brown wash |
| h. Coarse brown ware | 6, 7. Red wash |
| i. Brown wash | 8. Buff ware with red rim |
| j. Coarse brown ware | 9. Red wash. AA. IVa. |
| k., l. Red wash | 10. Red wash. S. IVa. |
| m. Buff ware | 11. Plain buff ware. AA. IVa. |
| n. Red wash |  |



Fig. P.32. Beycesultan IVa. Bowls of various types
46. Large jar with ribbed neck. If not really a large bowl, Fig. P.34:3 may belong to a biconical jar of this type, which is better known from the L.B.A. deposits. Fig. P.36: 10 may have belonged to a similar jar or to a jug. The decoration is already very L.B.A. in character.

## Pithoi

29. Wide-mouthed bag-shaped pithos. Decreases in popularity. One example: Fig. P.37:3.
30. Cooking pots. One or two examples, not illustrated.

## Miscellaneous

48. Lamp. Fragment of a lamp of Syro-Palestinian type, Fig. P.36:3. Evidently not of local manufacture.
*54. Basket-handled sieve. One example, but not rare judging by body fragments. Fig. P.36:8.
*55. Cylindrical potstand. This fine specimen is decorated with two rows of openings and grooved patterns. Probably derived from the large pedestalled bowls (shape 24), these stands are also a feature of Levels III and II of the L.B.A. at Beycesultan. Fig. P.37:4.
*56. Painted animal vase (rhyton?) The lower part of an animal vase of unknown species painted in red or buff surface was found in Trench "K". Fig. P.37:1. An animal vase of smaller size, again painted, but with a side handle was found in Level III (see next volume).

Vase in the form of a ̧̧ark (moccasin). The sole and lower part of a fine red burnished ̧̧ark is shown in Fig. P.37:2. Such vases are not uncommon in the M.B.A. pottery of Kültepe, where both the boot with upturned toe and the çark are found. Both are still commonly worn in Anatolia and it would appear that M.B.A. footwear was not much different. For a boot with upturned toe, see Fig. P.11:1.

Fig. P.32. Beycesultan IVa. Bowls of various types Wheel-made buff ware

1. Red slip
2. Brown wash
3. Horizontally streaky red wash
4. a. Red polished
b. Red wash
c. Buff polished
d. Red polished
e. Red burnished
f. Buff burnished
g. Buff polished
h. Red ware
i. Red polished
j. Reddish buff polished
5. Buff polished
6. Pinkish buff polished
7. Orange polished
8. a. Red wash
b. Red wash
c. Polished buff ware
d. Fine brown wash
e. Polished buff
f. Orange polished wash
9. Buff polished
10. Buff burnished with radial pattern
11. a. Red wash
d. Buff burnished ware
e. Fine buff burnished
12. Pink wash. K. IVa
13. Orange pattern burnish
14. Orange burnished slip. BB. IVa.


Fig. P.33. Beycesultan IVa. Small bowls and saucers, 1-9 "Eggshell ware", 10-26 "Palace plain buff ware"; 27-36 plates

1. Plain buff

2-6. Red wash
7. Buff wash
8. Red wash
9. Buff wash

10-26. Plain buff ware
27. Buff ware, red wash streaky zigzag pattern.

AA. IVa.
28. Buff ware, red lustrous wash
29. Buff ware, red slip with interior pattern burnish. K. IVa.
30-31. Buff burnished
32,33 . Buff ware, red burnished slip
34. Buff ware, red-brown pattern burnished slip
$35-36$. Buff ware, red polished slip


Fig. P.34. Beycesultan IVa. Large ribbed bowls and two-handled basins Wheel-made buff ware
1, 2, 3. Pink burnished wash. K. IVa.
5, 6. Polished red wash. M. IVa.
4. Red wash. M. IVa.


Fig. P.35. Beycesultan IVa. Beak-spouted jugs, quatrefoil kantharoi and jugs with trefoil mouths Wheel-made buff wares

| 1. Fine deep red burnished slip | 8. Fine creamy buff burnished slip. BS. 54,461 |
| :--- | :--- |
| 2. Grooved. Red burnished wash | 9. Plain buff ware |
| 3. Fine lustrous red wash. Grooved | 10. Buff ware. S. IV. A. |
| 4. Buff burnished slip. Grooved ornament | 11. Pattern burnished red slip. BS. 54,194 |
| 5. Buff wash | 12. Red gritty ware, black core. Cream polished |
| 6. Matt red paint on buff surface | surface. BS. 54, 191 |
| 7. Plain buff ware | 13. Red wash. AA. IVa. |



Fig. P.36. Beycesultan IVa. Jars, "teapots", sieve and lamp

1. Red-wash
2. Brown wash
3. Lamp. Gritty buff ware, burnt edges. M. IVa.
4. Brown wash. BS. 55,474
5. Red wash. BS. 55,525
6. Buff wash. BS. 55, 526
7. Burnished red wash
8. Smoothed reddish ware. AA. IVa.
9. Red wash
10. Red wash. Grooved and incised. BB. IVa.
11. Smoothed creamy surface


Fig. P.37. Beycesultan IVa. Miscellanea: painted animal vase, pot in form of a moccasin, potstand and cooking pot

1. Animal vase on four feet. Buff ware, washy mat red paint. K. IVa.
2. Sole of vase in form of a şarik (moccasin). Buff ware, fine polished orange red slip. Raised and incised decoration. S. IVa.
3. Cooking pot. Brown coarse ware. S. IVa.
4. Potstand. Buff ware, plain smoothed surface with grooved ornament. K. IVa.

## APPENDIX

# LA FAUNE DE BEYCESULTAN 

par Pierre Ducos

Parmi l'ensemble des ossements d'animaux mis au jour à Beycesultan, 288 étaient déterminables. Leur état était généralement assez fragmentaire; néanmoins la collection comptait plusieurs os longs entiers et quelques crânes en bon état. La presque totalité des vestiges osseux provient des niveaux supérieurs (niveaux VIII à III); un seul ossement avait été trouvé dans les niveaux inférieurs (niveau XIV).

## Description des Espèces

## CANIS FAmiliaris

En vue de profil, le crâne entier n ${ }^{\circ} 304$ (niveau III Bronze récent) montre un front plat, assez oblique, et une ligne sagittale rectiligne. En vue supérieure, la boîte crânienne est longue et le resserrement en arrière des processus post-orbitaires est peu marqué. Le museau est assez long et pointu.

La longueur de ce crâne, mesurée du basion au point alvéolaire, est de 166.6 mm . C'est celle d'un animal de forte taille, plus grand que Canis familiaris palustris (133 à 137 mm . d'après Studer, 1901), comparable à C.f. matris-optimae ( 155 à 176 mm .) et à C. f. intermedius ( 164 mm .). Le front est large. Sa largeur, mesurée au niveau des processus post-orbitaires, est, en valeur relative (la longueur basale du crâne étant réduite à 100), de 30.4. Chez C.f. palustris, le front est plus étroit (29.9 à 30.1), et pour C.f. matris-optimae, Studer donne les valeurs de $26.5,26.7$, et 30.7. Les formes inostranzewi, intermedius et leineri ont le front plus large avec respectivement 33.1, 31.1 et 31.3 en valeur relative. La boîte crânienne a une largeur moyenne. Le diamètre transverse maximun entre les bosses pariétales est en valeur relative de 35.8, comme chez C.f. matris-optimae ( 30.7 à 37.6) et C. f. intermedius (35.4). La boîte crânienne est plus large chez $C$.f. palustris ( 37.9 à 39.1 ), et plus étroite chez les autres formes décrites par Studer. Le museau est particulièrement long. Sa longueur relative, mesurée du nasion au point alvéolaire, est de 57.9 alors qu'elle ne dépasse pas 55.5 chez $C . f$. palustris et 54.0 chez C. f. matris-optimae, et atteint 58.7 chez C.f. leineri.

La grande variabilité de la forme du crâne chez le chien rend hasardeux tout rapprochement avec les formes décrites dans la littérature, surtout quand ce rapprochement tend à établir des filiations. Dechambre (1941) remarquait qu'il est toujours possible de rapprocher le crâne d'un chien préhistorique avec celui d'un type décrit antérieurement, mais qu'il est aussi toujours possible de trouver des différences avec toutes les formes décrites. Par sa taille, l'étroitesse de sa boîte crânienne, le chien de Beycesultan rappelle C.f. matris-optimae. Il diffère de celui-ci par la largeur du front, le faible resserrement de la boîte crânienne en arrière des processus post-orbitaires, et son museau plus long. Son profil ressemble à celui du crâne d'Alishar-Hüyük (Patterson, 1937). Ses proportions sont également proches de celles du Chien Pariah.

TABLEAU I. Mensurations des restes crâniens de Canis familiaris


## EQUUS

Deux dents jugales supérieures, une arrière molaire inférieure et une extrémité distale d'un radius s'offrent à l'étude.

Pour les dents jugales supérieures, on note l'aplatissement des murailles externes
des paracône et métacône. Les styles sont simples, sans tendance au dédoublement. Le protocône est court, avec un bord lingual creusé. Il n'y a pas de repli dit "caballin".

A la molaire inférieure, le sillon qui sépare le métaconide du métastylide est en V assez ouvert. Les deux boucles de l'émail séparées par ce sillon sont symétriques, et leur dessin est arrondi. Le repli de l'émail qui sépare le protoconide et l'hypoconide est court, et n'atteint pas le niveau des murailles internes de ces deux cônes.

Ces caractères sont plus asiniens que caballins. L'attribution de l'Equidé de Beycesultan à un animal du sous-genre Asinus est confirmé par la très petite taille de l'extrémité distale du radius ( $59.8 \times 34.2 \mathrm{~mm}$.). Ses dimensions sont bien inférieures à celles des petits chevaux ( $68.5 \times 42.7 \mathrm{~mm}$. pour le Tarpan, $70.5 \times 43.4 \mathrm{~mm}$. en moyenne pour le Cheval de Przewalski, d'après Gromova, 1949).

## sus scrofa

Les restes de Suidés sont surtout des vestiges crâniens et des dents. La pièce la plus intéressante est un crâne presque entier qui provient du niveau III (Bronze récent). Il a appartenu à un animal d'un âge avancé, car les deux premières molaires sont pratiquement réduites à des chicots, et toutes les cuspides de M3 sont abrasées.

Ce crâne est court. Sa longueur basale (basion-opisthocrânion) est, avec 203 mm , plus petite que celle d'un crâne de Sus scrofa palustris de Lattringen (d'après Otto, 1901). D'une façon générale, les dimensions absolues du crâne de Beycesultan sont inférieures à celles de S. s. palustris et se rapprochent de celles des porcs du Chalcolithique de Palestine. Le massif occipital est haut. Le diamètre opisthocrânion-basion a une valeur relative (la longueur basale du crâne étant ramenée à 100) de 41.3, alors que pour le crâne de Lattringen, cette même valeur est de 35.5 seulement. Chez S. s. libycus, le Sanglier du Proche-Orient, la hauteur de l'occipital est en valeur relative de 36.5 (sur un crâne de mâle provenant de la région du lac Houlé), et de 37.6 chez $S$. vittatus (d'après Belic, 1939).

Le crâne de Beycesultan est également remarquable par sa largeur. Le diamètre transverse maximum des arcades zygomatiques a une valeur relative de 60.6 , pour 44.4 chez $S$. s. libycus et 58.4 chez un Porc domestique de Chine du groupe vittatus (Collection de l'Institut d'Anatomie de Francfort). La largeur du massif facial au niveau de la première molaire est de 29.6 (valeur relative) contre 18.2 chez le Sanglier et 27.7 chez le Porc domestique de Chine.

Le développement de la boîte crânienne mérite de retenir l'attention. On a vu plus haut qu'elle était particulièrement haute. En vue de profil, le front paraît très bombé. Le diamètre opisthocrânion-bregma est en valeur relative très supérieur à celui du crâne de Lattringen (19.5 contre 11.4). Chez le Sanglier du Proche-Orient, ce diamètre a 16.6 pour le crâne cité plus haut. Le diamètre bregma-nasion est lui aussi plus grand que chez S. s. palustris ( 42.7 contre 37.3 ). La boîte crânienne a donc un développement relativement important par rapport à l'ensemble du crâne.

On peut relever la forme du lacrymal sur un fragment de crâne provenant du niveau IV ( $\mathrm{n}^{\circ} 15$ ). On sait que la forme de cet os est caractéristique des deux groupes occidental et oriental de Sangliers. Selon Belic, il est trapézoïdal dans le groupe occidental, avec les angles antéro-supérieur aigu et antéro-inférieur obtus, alors que chez les formes du groupe asiatique, ces deux angles sont presque droits et le contour général sub-rectangulaire. Le lacrymal du crâne n ${ }^{\circ} 15$ est relativement long (bord inférieur de 24.8 mm .), subrectangulaire, avec des angles antérieurs presque droits. L'indice longueur du bord inférieur/longueur du bord orbital est de 1.3 , valeur qui est plutôt dans
l'ordre de celles des Sangliers du groupe occidental que de ceux du groupe oriental (d’après Kelm, 1931).

En résumé, les caractères les plus remarquables de ce crâne sont les suivants:
-taille petite;
-développement en largeur;
-boîte crânienne haute et relativement longue;
-front bombé.
Les dimensions des dents et des os des membres sont celles d'une race de petite taille, comparable à $S$. s. palustris. Cependant, les particularités du crâne nous font hésiter à identifier tout à fait la race de Beycesultan à la sous-espèce palustris, car il semble qu'il s'agisse d'une race plus évoluée apparemment plus moderne que le petit porc des tourbières.

TABLEAU II. Sus scrofa, mensurations du crâne n ${ }^{\circ} 306$

| Mensurations | No306, niveau III |
| :---: | :---: |
| Opisthocrânion-prosthion | 233.8 |
| ,, -nasion | 123.0 |
| ," -bregma | 39.6 |
| " -opisthion | 60.2 |
| ", -basion | 83.8 |
| Basion-prosthion | 203.0 |
| Bregma-prosthion | 198.4 |
| Bregma-nasion | 87.0 |
| Bregma-opisthion | 70.2 |
| Bregma-basion | 88.4 |
| DT du foramen magnum | 21.8 |
| Hauteur de id. | 24.0 |
| DT minimum entre les crêtes pariétales | 22.2 |
| DT entre les prolongements postérieurs de id. | 55.2 |
| Longueur $\mathrm{PM}+\mathrm{M}$ | 99.4 |
| DT des arcades zygomatiques | 123.0 |
| Largeur du massif facial au niveau de Ml | 60.0 |

## OVIS et CAPRA

Les deux genres Ovis et Capra sont représentés à Beycesultan ainsi que l'atteste une série de chevilles osseuses. Mais la distinction de la Chèvre et du Mouton dans la collection des restes des os des membres présente de grandes difficultés car il n'y a pas de caractère nettement distinctif des deux espèces, et les recherches de divers auteurs sur ce point ne paraissent pas encore décisives. Le problème se trouve simplifié lorsqu'il est possible d'établir que les moutons et les chèvres d'un même site sont d'une taille suffisamment différente pour que les dimensions des os soient des indices d'attribution suffisamment sûrs. Or, à Beycesultan, il semble bien que la différence de taille ne soit pas très importante. Nous décrirons en premier lieu les fragments crâniens carac-
téristiques, puis, passant en revue les différentes catégories d'os longs, nous essaierons d'y distinguer les deux genres dans la mesure où cela sera possible.

## I. Examen du Matériel

## 1. Les restes crâniens de Mouton

La collection comprend deux chevilles osseuses très différentes l'une de l'autre:

- $\mathrm{n}^{\circ} 266$ (niveau VIII) : forte cheville osseuse dont la partie proximale manque.

Le fragment représenté a une longueur de 13 cm . La face externe est bombée, l'interne est plate, de sorte que les bords antérieurs et postérieurs sont bien marqués. La courbure du bord postérieur a un rayon d'environ 6 cm . La surface est finement striée longitudinalement, et les stries deviennent transverses le long du bord antérieur. La structure interne est spongieuse. Une très faible torsion est visible.

- $\mathrm{n}^{\circ} 155$ (niveau III-IV) : cheville osseuse de petite taille et grêle, dont manque également la partie proximale. L'aplatissement transversal est bien marqué, l'arête antérieure est très vive, la postérieure plus arrondie. La face externe est légèrement bombée, l'interne plane. La courbure est faible, sauf dans la partie distale où elle s'accuse très nettement. L'extrémité distale est pointue. La surface est striée longitudinalement.


## 2. Les restes crâniens de Chèvre

Ils sont au nombre de 10. Ils consistent en chevilles osseuses souvent complètes, avec pour quelques unes une partie de la boîte crânienne. Toutes les chevilles ont comme caractère commun une carène antérieure plus ou moins tranchante et un sinus interne long. La taille et la torsion permettent la distinction de deux types:

Type 1: taille relativement élevée. La torsion est très marquée et est homonyme. De la base à la pointe, la cheville se tord de $90^{\circ}$ environ, si l'on prend comme repère la carène antérieure. Le bord postérieur est arrondi, la face externe bombée, la face interne tend vers l'aplatissement.

Type 2: taille plus petite. La torsion n'est pas visible le plus souvent. Lorsqu'elle est décelable, elle est beaucoup moins marquée que dans le type l, et de même sens (homonyme). La carène antérieure est moins tranchante et la face interne est plus bombée que dans le type précédent.

TABLEAU III. Mensurations des chevilles osseuses de Chèvres

| Mensurations | Type 1 |  |  | Type 2 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1. D. maximum à la base | 52.0 | 46.4 | 48.0 | 37.0 | 26.6 | 28.4 | 27.0 | 36.0 |
| 2. D. minimum à la base | 30.4 | 31.0 | 34.0 | 22.6 | 17.8 | 19.8 | 16.6 | 25.0 |
| 3. L. du bord antérieur | 250.0 | - | - | - | 120.0 | - | - | - |
| 4. Distance base-pointe | 212.0 | - | - | - | 107.0 | - | - | - |
| 5. D. maximum au milieu | 35.0 | - | - | - | 20.5 | - | - | - |
| 6. D. minimum au milieu | 14.6 | - | - | - | 10.6 | - | - |  |

## 3. Les os des membres

Des quatre omoplates, deux sont comparables à ceux des chèvres ou des moutons domestiques préhistoriques d'Europe et du Proche-Orient (DAP de l'épiphyse 27.8 et 28.8 mm ). Les deux autres sont de taille plus élevée.

Un humérus est de taille plutôt élevée avec un diamètre transverse de la poulie distale de 32.6 mm .

Deux des radius sont de forte taille, avec 35 et 36 mm pour le diamètre transverse de l'épiphyse proximale. Les autres sont de la taille des moutons et des chèvres domestiques.

Trois métacarpiens courts et à la diaphyse épaisse sont ceux de chèvres. Les dimensions de leurs épiphyses sont faibles. Un autre métacarpien entier a appartenu à un animal de plus grande taille. Son indice de robusticité (11.3) est un peu faible pour être celui d'une chèvre, mais dépasse ce que l'on rencontre généralement chez le Mouton.

Une extrémité distale de tibia mesurable est de la taille d'un mouton ou d'une chèvre domestique.

Dans le série des métatarsiens, dont 7 sont entiers, deux ont des indices de robusticité nettement caprins ( 9.7 et 10.7). Ils ont aussi les dimensions des épiphyses les plus réduites de la série. Les autres ont des indices ovins, et sont de taille supérieure sans dépasser celle des moutons domestiques préhistoriques. L'un d'eux ( $n^{\circ} 52$ ), est anormalement mince (indice 7.8).

## 4. Conclusions

Les restes de moutons et de chèvres de Beycesultan correspondent au moins à trois espèces: une Chèvre de petite taille, un Mouton de la taille des moutons domestiques préhistoriques, et une espèce de taille plus élevée, qu'il convient de comparer aux formes sauvages. Les comparaisons qui suivent permettront de préciser les attributions spécifiques.

## II. Comparaisons

## 1. La Chèure

Au Proche-Orient, des ossements de chèvres ont été mis au jour dans plusieurs sites. En Turquie même, Patterson (1937) attribue à Capra prisca des chevilles osseuses petites et droites provenant du niveau chalcolithique que d'Alishar Hüyük. Le site de Fikirtepe (Néolithique ancien) a fourni les restes d'une chèvre aux cornes en sabre et à carène antérieure vive qui ressemble beaucoup à une chèvre sauvage du groupe aegagrus (Röhrs \& Herre 1961). En Palestine Zeuner (1955) décrit deux types de chèvres, l'une aux cornes en sabre présente dans les niveaux prépoterie de Jéricho, l'autre aux cornes tordues provenant des niveaux de l'Age du Bronze de ce même gisement. Dans le Mésolithique du Proche-Orient, quelques auteurs ont signalé des chèvres: à Wadi-al-Mughara (Bate, 1937), en position statigraphique douteuse il est vrai, et à El Khiam (Vaufrey, 1951), il y avait des chevilles osseuses attribuables à Capra hircus. Coon (1949) trouve à Belt Cave (Iran) d'assez nombreux restes pour lesquels il ne donne malheureusement aucune description ostéologique détaillée. Il convient aussi de signaler $C$. hircus rütimeyeri, petite Chèvre à cornes courtes et droites des niveaux supérieurs d'Anau (Dürst, 1908), Hircus mambricus du Néolithique de Toukh, en Egypte (Gaillard, 1934), la série de 29 crânes de l'ancienne Egypte décrite par Pia (1942) où l'espèce C. prisca a été reconnue, et enfin C. aegagrus var. indicus d'Harappa (Prashad 1936). En Europe, une Chèvre aux cornes tordues est connue depuis la découverte, en 1914, en Pologne, d'un crâne pour lequel Adametz créa l'espèce $C$. prisca. L'âge paléolithique de cette pièce est douteux, et d'après Thenius (1962) les tests radiologiques montrent qu'une autre pièce semblable du "paléolithique" d'Autriche ne peut en fait être plus ancienne que l'âge du bronze. C. prisca a été retrouvée dans plusieurs sites d'Europe centrale par Adametz, Hilzheimer et Teodoreanu.

Les chevilles osseuses tordues (type 1) de Beycesultan sont plus fortes que celles de l'âge du Bronze de Jéricho. De plus la torsion est de l'ordre de $90^{\circ}$ pour l'exemplaire Turc, et seulement de $70^{\circ}$ pour la pièce palestinienne. Plus grêles également sont les chevilles osseuses du Chalcolithique de Palestine (Tel-Aviv). A Chypre, celles d'Enkomi atteignent une taille comparable à celles de Beycesultan. C. prisca d'Europe centrale semble avoir des chevilles osseuses plus fortes et plus rapprochées que celles de Beycesultan, au contraire de celles d'Egypte, chez lesquelles l'écartement est plus considérable.

Les chevilles osseuses en sabre de Beycesultan (Type 2) sont de la taille de celle d'Alishar Hüyük et d'Anau en ce qui concerne la section à la base. A Jéricho, si l'on excepte la première décrite par Zeuner, qui est très robuste, les deux autres sont de taille comparable à celles de Beycesultan. Il en est de même pour les restes d'El Khiam. Les pièces de Beycesultan sont équivalentes par la section aux plus petites des chevilles osseuses de Fikirtepe, mais celles-ci semblent un peu plus longues. A Khirokitia (Chypre, prépoterie), nous avons pu constater la présence de chevilles osseuses d'une taille de l'ordre de celles de Beycesultan, et chez lesquelles une torsion très faible peut être observée comme pour les chèvres du site turc.

Les dimensions des os canons, métacarpiens et métatarsiens, paraissent être celles d'une Chèvre dont la taille est aussi petite que C. h. rütimeyeri d'Anau: la Chèvre d'Alishar Hüyük est aussi très comparable à cet égard. Les restes de Fikirtepe semblent avoir appartenu à un animal de taille plus grande-de même que la Chèvre du Chalcolithique de Palestine. A Enkomi, sur 2 métatarsiens entiers, l'un est presque identique dans ses mensurations au n ${ }^{\circ} 76$ de Beycesultan (niveau III-IV).

La présence de chevilles osseuses de deux types signifie-t-elle qu'il y a dans la collection de Beycesultan deux espèces du genre Capra?

Les dimensions des os canons n'indiquent pas deux espèces, mais une seule, de taille réduite. Les 5 canons ont des dimensions très voisines, et si deux espèces étaient présentes, il serait étonnant que leurs tailles soient aussi voisines. Mais deux types de cornes sont-ils concevables dans une population de chèvres de même race? Les différences entre les deux types de Beycesultan, rappelons-le, sont surtout relatives à la taille et à l'enroulement, qui est prononcé chez les plus grandes, nul ou très faible chez les plus petites. Or ces différences peuvent très bien correspondre à des différences sexuelles. Chez la Chèvre de race mambrine qui est élevée dans la région de l'Euphrate, en Turquie, et qui correspond à un type assez largement répandu dans tout le Moyen Orient, les mâles ont des cornes fortes, très écartées, et à torsion très prononcée, alors que celles des femelles dirigées vers l'arrière, sont très peu tordues sur elles-mêmes (Pl. XXXIV). Il n'y a aucune raison de ne pas admettre une telle situation chez la Chèvre préhistorique de Beycesultan, dont les caractères les plus marquants sont les suivants:
-cornes bien développées, à torsion prononcée chez le mâle, torsion faible ou nulle chez la femelle;
-cornes peu écartées;
-taille très réduite.
L'existence de deux types de chèvres, l'une à cornes en sabre, l'autre à cornes tordues homonymement est attestée depuis les temps préhistoriques. Dans le cas des cornes tordues (on l'a vu pour la Chèvre de Beycesultan), la torsion peut être beaucoup plus faible chez les jeunes et chez les femelles que chez les mâles. Capra prisca est une espèce qui a été créée pour une chèvre que l'on a cru d'âge paléolithique et, par voie de conséquence, sauvage. Dans l'esprit du classificateur (Adametz), il est probable
que l'ancienneté de la trouvaille justifiait pour une grande part la création d'une nouvelle espèce. Mais que cette ancienneté soit maintenant improbable et qu'il ne s'agisse que d'une forme qui n'apparaît qu'aux époques où s'est faite la domestication ne semble pas devoir entraîner l'élimination du taxon, étant donné l'ancienneté des deux types de chèvres. Nous proposerons de désigner par C. hircus hircus les chèvres domestiques à cornes en sabre et par C. hircus prisca celles dont les cornes sont tordues et homonymes comme à Beycesultan, tout en notant les particularités de la Chèvre de ce site qui représente probablement une race particulière.

## 2. Le Mouton

La cheville osseuse n ${ }^{\circ} 66$ est celle d'un mâle. Bien qu'il ne s'agisse que d'un fragment distal, on peut la tenir pour trop petite pour qu'elle ait pu appartenir à un mouton sauvage du groupe orientalis, qui vit dans tout le Proche-Orient. On peut la comparer, par la taille, la courbure et la.section, aux chevilles osseuses du Mouton domestique du Chalcolithique de Palestine. Cependant, notons que l'allure des stries sur le bord antérieur est assez particulière.

Les métatarsiens sont d'avantage comparables à ceux du Mouton domestique du Néolithique d'Europe ( $O$. a. palustris) qu'à ceux du Mouton du Chalcolithique de Palestine, qui est d'une taille sensiblement plus petite. Le métatarsien $n^{\circ} 73$ a une taille sensiblement plus élevée que celle des trois autres et a probablement appartenu à un mâle, les trois autres étant sans doute ceux de femelles.

C'est certainement à $O$. orientalis qu'il faut attribuer la cheville osseuse $n^{0} 155$, qui est tout à fait comparable à celles des femelles du Mouflon d'Asie du Sud-Ouest. On doit également rapporter à cette espèce un omoplate ( $\mathrm{n}^{\circ} 113$ ) particulièrement grand, et deux radius ( $\mathrm{n}^{\circ} 288$ et 211) qui ont respectivement un DT de l'épiphyse proximale de 35 et 36 mm . Il s'agit sans doute d'Ovis orientalis anatolica qui vit encore actuellement dans le Taurus.

TABLEAU IV. Mensurations des Métatarsiens d'Ovis a. palustris de Beycesultan.

| Métatarsiens | Beycesultan |  |  | O. a. palustris ${ }^{2}$ |  | (Chalcolithique Palestinien) Ovis aries |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $m$ | $w$ | $m$ | $w$ |
| $\mathrm{n}^{0}$ | 80 | 18 | 55 |  |  |  |  |
| 1. Longueur totale | 121.8 | 124.0 | 127.8 | 148.2 | - | - | - |
| 2. DT proximal | 20.6 | 18.4 | 20.4 | 18.6 | 17.2-19.4 | 19.3 | 18.4-20.2 |
| 3. DAP ${ }^{1}$ proximal | 18.8 | 18.8 | 20.6 | 20.1 | - | 18.1 | 17.8-19.0 |
| 4. DT minimum de la diaphyse | 11.0 | 10.0 | 11.6 | 10.7 | $9.1-11.2$ | 10.4 | - |
| 5. DT distal | - | 22.4 | 24.0 | 22.2 | - | - | - |
| 6. indice $100 \times 4: 1$ | 9.0 | 8.1 | 9.1 | - | - | - | - |

[^21]TABLEAU V. Mensurations des Métacarpiens et des Métatarsiens de Capra hircus prisca, race de Beycesultan.

| Métacarpiens | Beycesultan |  |  | Chalcolithique de Palestine |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | ( $\mathrm{n}^{\circ} 59$ | 78 | 60) | $n$ | $m$ | $w$ |
| 1. Longueur totale | 97.2 | 93.8 | 99.8 | - | - | - |
| 2. DT proximal | 21.6 | 21.8 | 22.0 | 6 | $25.0 \pm 0.7$ | 24.0-26.2 |
| 3. DAP proximal | 14.8 | 15.0 | 15.0 | 6 | $17.8 \pm 0.8$ | 16.8-18.8 |
| 4. DT minimum de la diaphyse | 13.8 | 15.4 | 13.6 | 3 | 15.8 | 13.0-17.0 |
| 5. DT distal | 25.0 | 25.0 | 25.4 | 4 | 26.1 | 25.2-27.0 |
| 6 . indice $100 \times 4: 1$ | 14.0 | 16.4 | 13.6 | - | - | - |


| Métacarpiens |  | Enkomi (Chypre) |  |  | Alishar <br> Hüyük | Fikirtepe |  | C. h. rütemeyeri |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1. Longueur totale |  | 96.4 | 96.6 | 103.2 | 10222 | 99 |  | 10298 |  |
| 2. DT proximal |  | 21.8 | 21.8 | 23.0 |  | 22.5-24.0 |  | 2320 |  |
| 3. DAP proximal |  | 15.4 | 15.2 | 15.8 | - | - |  | 16 |  |
| 4. DT minimum de la diaphyse |  | 13.4 | 13.4 | 15.0 | - 15. | 15.5-17.0 |  | 15 |  |
| 5. DT distal |  | 25.2 | - | 25.2 | 26 | 29.0-31. |  | 27 23 |  |
| 6. indice $100 \times 4: 1$ |  | 13.9 | 13.8 | 14.5 | - | - |  | $16 \quad 13$ |  |
| Métatarsiens | Beycesultan |  | Chalcolithique de Palestine |  |  | Enkomi |  | Fikirtepe |  |
|  | $\left(\mathrm{n}^{\circ} 84 \mathrm{76}\right)$ | 109.0104 .8 |  |  |  | 102.4116 .0 |  | 111 |  |
| 2. DT proximal | 17.8 | 18.8 |  | $21.2 \pm 0$ | 4 20.4-22.0 | $\begin{array}{llll}0 & 18.0 & 20.4\end{array}$ |  | 19.7-24.0 |  |
| 3. DAP proximal | 16.8 | 17.2 | 7 | $20.7 \pm 0.7$ | 19.8-22.2 | $2 \quad 17.0 \quad 21.2$ |  | - |  |
| 4. DT minimum de la diaphyse | 10.6 | 11.2 |  | 12.5 | 11.0-13.0 | $0 \quad 11.0$ | 13.4 |  | -15.2 |
| 5. DT distal | 22.6 | 23.0 |  | 26.8 | - | 22.8 | 25.4 |  | -32.3 |
| 6 . indice $100 \times 4: 1$ | 9.7 | 10.7 |  | 13.7 | - | 10.7 | 11.9 |  | - |

(1) $\varepsilon=$ erreur type de la moyenne, $\lambda \sqrt{ } \frac{s}{n}$

BOS TAURUS
Les ossements mesurables de Bœuf sont assez peu nombreux à Beycesultan. L'espèce est de grande taille, plus grande que le petit Bœuf à cornes courtes d'Europe, que l'on retrouve également en Palestine (Bos taurus brachyceros), sans atteindre les dimensions du Grand Bœuf Primitif (Bost. primigenius).

Pour les comparaisons, la série la plus utile est celle des 8 astragales mesurables. La longueur moyenne est de 69.5 mm . Chez Bost. brachyceros, la moyenne est de 61 mm pour une série de 29 astragales de Palestine (Chalcolithique). La longueur moyenne des astragales de Beycesultan est en dehors de l'intervalle de confiance de cette série
palestinienne ( 54.4 à 67.6 mm .). Comparée à une série de Bos $t$. primigenius ( 23 astragales de Roucadour, Néolithique français), on constate que la moyenne est, à Beycesultan, au dessous de l'intervalle de confiance de cette autre série ( 70.5 a à 91.5 mm .). Le Bœuf de Beycesultan se distingue sans aucune ambiguité de Bos $t$. brachyceros et de Bos $t$. primigenius. Sa taille est intermédiaire entre celle de ces deux espèces. Il est possible d'estimer la hauteur au garrot d'un individu qui a laissé un métacarpien entier dont la longueur totale est de 218.2 mm . D'après Calkin (1960), la rapport entre la hauteur au garrot et la longueur du métacarpien est en moyenne de 5.98 pour les femelles, de 6.24 pour les taureaux et de 6.13 pour les bœufs. Les données de Calkin sont établies sur une importante série (plus de 50 individus). Sur une collection de 8 taureaux, 5 bœufs et 7 vaches de race N'Dama (provenance: Guinée), nous n'avons trouvé aucune différence entre les sexes en ce qui concerne ce rapport. La valeur moyenne pour cette série est de $6.0 \pm 0.12 \quad(r=0.8184)$. En prenant 6 comme valeur moyenne du rapport, le métacarpien de Beycesultan ( $\mathrm{n}^{\circ}$ 285, niveau VIII) correspondrait à une hauteur au garrot comprise entre 128.3 et 133.5 cm . Chez Bos $t$. brachyceros de Palestine, la taille est comprise entre 105.3 et 109.5 cm , et chez le Grand Bœuf primitif, elle est au moins égale à 150 cm (Requate, 1957).

La collection de Beycesultan comprenait quelques fragments crâniens intéressants. Sur un fragment de frontal d'un individu jeune, dont la base de la cheville osseuse laisse pressentir un cornage assez fort ( $\mathrm{n}^{\circ} 249$, niveau III), la ligne du chignon est visible sur la moitié droite. Le chignon est large et saillant vers l'arrière, est déprimé dans la région sagittale. Chez le Grand Bœuf Primitif, il est plus rectiligne; chez Bos $t$. brachyceros, on rencontre un dessin analogue. Enfin, un certain nombre de chevilles osseuses ont une taille variable; quelques unes indiquent un cornage beaucoup plus fort que celui de Bos $t$. brachyceros. Sur certains exemplaires, on note une tendance au relèvement des pointes.

Il semble donc qu'à Beycesultan, à l'âge du Bronze, vivait une race bovine particulière, pour laquelle des études ultérieures diront s'il convient de créer une sousespèce nouvelle.

TABLEAU VI. Mensurations de Bos taurus.


TABLEAU-(contd.)

| Mensuration | (a) moins de 6 pièces: série des mesures |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $n$ | $m$ | $\varepsilon$ | $s^{2}$ |  | $s$ | $w$ | $(-2 s,+2 s)$ |
| Maxillaire inférieur |  |  |  |  |  |  |  |  |
| H en arrière de $\mathrm{M}_{3}$ |  | 69.0 | - | - | - | - | - |  |
| H entre $\mathrm{M}_{2}$ et $\mathrm{M}_{3}$ |  | 61.4 | - | - | - | - | - |  |
| H minimum au diastème |  | - | 22.4 | 29.0 | 28.4 | - | - |  |
| L du diastème |  | - | 79.5 | - | - | - | - |  |
| L séries des pm |  | - | - | - | - | 56.0 | - |  |
| L. série des M |  | - | - | - | - | - | 93.6 |  |
| M \{ L | 10 | 22.3 | $\pm 1.1$ | 1.56 |  | 1.25 | 20.0-24.8 | 19.8-24.8 |
| $\mathrm{M}_{1}$ \{ DT | 10 | 15.8 | $\pm 0.4$ | 0.59 |  | 0.77 | 14.8-17.2 | 14.3-17.3 |
| $\mathrm{M}_{2} \leqslant \mathrm{~L}$ |  | 26.4 | 26.0 |  |  |  |  |  |
| $\mathrm{M}_{2}$ \{ DT |  | 17.2 | 15.0 |  |  |  |  |  |
| $\mathrm{M}_{3}\{\mathrm{~L}$ |  | 33.0 | 39.0 | 33.6 | 35.4 | 39.4 |  |  |
| $\mathrm{M}_{3}$ ( DT |  | 15.2 | 17.8 | 15.4 | 15.0 | 18.0 |  |  |

## Omoplate

DAP épiphyse proximale
DAP surface articulaire
DT minimum du col
DT de la surf. articulaire

| 72.0 | 74.8 | - |
| :--- | :--- | :--- |
| 64.4 | 63.0 | - |
| 62.6 | 54.6 | 64.2 |
| 56.6 | 54.8 | - |

## Humérus

DT de la poulie distale H de $i d$. sur bord interne H de $i d$. au milieu

| 81.0 | 86.4 | 76.5 | 77.4 | 90.8 |
| ---: | ---: | ---: | ---: | ---: |
| 46.6 | 52.0 | 48.0 | 42.0 | 52.2 |
| 34.6 | 37.6 | 34.2 | 31.6 | 39.8 |

Radius
DT distal 64.8

DAP distal 38.8

Fémur
DT dista

$$
97.0
$$

Tibia

Longueur totale
DT proximal
DT minimum
DT distal
DAP distal

Calcanéum
Longueur totale
135.6

Astragale
$\begin{array}{lllrlll}\text { Longueur totale } & 7 & 69.5 \pm 3.8 & 16.45 & 4.06 & 65.2-75.8 & 61.4-77.6 \\ \text { DT poulie distale } & 8 & 45.0 \pm 2.9 & 3.48 & 1.87 & 42.8-48.8 & 41.3-48.7\end{array}$

342
93.2 - -
39.0 - -
$\begin{array}{lll}66.4 & 57.2 & 66.4\end{array}$
$\begin{array}{lll}46.8 & 44.0 & 49.2\end{array}$

## TABLEAU-(contd.)

| Mensuration | $(a)$ | moins de 6 pièces: série des mesures |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $(b)$ | $n$ | $m \pm \varepsilon$ | $s^{2}$ | $s$ | $w$ |

Cubonaviculaire
DAP 52.2

DT
58.6

## Métacarpien

Longueur totale
218.2 -

DAP proximal
$40.4 \quad 37.2$
DT proximal
$62.0 \quad 63.8$
DT minimum
38.0 -

DT distal
69.2 -

Métatarsien
DAP proximal $47.4 \quad 49.8$
DT proximal
$50.6 \quad 53.4$

Première phalange
Longueur totale
$\begin{array}{lll}58.8 & 67.2 \quad 65.0\end{array}$
DAP proximal

- $\quad 35.6 \quad 26.4$

DT proximal

- $\quad 29.621 .6$

DT minimum
$\begin{array}{lll}21.8 & 25.8 & 25.2\end{array}$

Deuxième phalange
Longueur totale
$36.8 \quad 44.8$
DAP proximal
$\begin{array}{ll}27.2 & 33.2\end{array}$
DT proximal
$27.8 \quad 32.4$
DT minimum
$21.0 \quad 27.0$

Troisième phalange
Longueur totale
72.4

Hauteur
36.0

## Étude Statistique

Les statistiques établies sur la collection de Beycesultan devront être interprétées avec une relative prudence étant donné le nombre assez faible de pièces sur lesquelles elles peuvent être calculées. Aucune différence notable ne peut être constatée entre les statistiques établies pour chacun des niveaux, lors même que l'on groupe ceux-ci en considérant le Bronze Moyen d'une part et le Bronze Récent d'autre part. On peut donc sans inconvénient étudier la collection globalement.

Les petits Ruminants sont en grande majorité représentés par Ovis aries cf. palustris et par Capra hircus prisca (respectivement 11.4 et $17.2 \%$ de l'ensemble). Ovis orientalis (anatolica?) n'atteint que $5.7 \%$, soit le $1 / 7^{\text {ème }}$ de l'ensemble des Petits Ruminants. Toutes les parties du squelette sont représentées. Les restes osseux sont en majorité ceux d'individus adultes ( 30 adultes pour 8 jeunes). Les fréquences des classes d'âge établies d'après les dents sont les suivantes:

TABLEAU VII. Frèquences des classes d'âge des Petits Ruminants.

| Classe | Observées |  | Théoriques |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $n$ | \% |  | $n$ |  |
| $0-1$ ans | 4 | 15.4 | 38.3 | 9.4 |  |
| 1-2 ans | 9 | 34.6 | 24.5 | 6.3 |  |
| 2-3 ans | 7 | 26.9 | 15.6 | 4.1 | $\chi^{2}=7.9$ |
| 3-4 ans | 5 | 19.2 | 9.9 | 2.6 | significatif ( $\mathrm{P}=0.05$ ) |
| 4 ans | 1 | 1.3 | 3.9 | 1.0 | au dessus de 5.99 |

On constate un déficit de jeunes de 0 à 1 an et un fort pourcentage des individus d'âge moyen. Par rapport aux fréquences théoriques qu'aurait données une population naturelle exploîtée au hasard, on voit que les différences sont assez importantes. Le test $\chi^{2}$ est significatif (Fig. F.1).

On peut conclure qu'il s'agit d'une exploitation du troupeau orientée vers l'abbattage des adultes de 1 à 4 ans. Le déficit en individus très âgés semble indiquer un faible intérêt pour les produits de l'animal vivant: laine, lait. Le troupeau de moutons et de chèvres était surtout exploité pour la production de viande.

Le Cochon (Sus scrofacf. palustris) est représenté dans le même pourcentage que le Mouton et la Chèvre $(11.9 \%)$. On ne peut estimer les fréquences des différentes classes d'âge étant donné le petit nombre de dents. On remarque que les os des membres ne sont représentés que par trois pièces et que la presque totalité des restes consiste en fragments de crânes et dents. Il ne fait aucun doute que cet animal soit domestique étant donné les caractères plus modernes qu'archaïques du crâne.

Le Bœuf est de loin l'espèce la plus abondante. Il constitue à lui seul $48 \%$ des restes osseux de Beycesultan. Toutes les parties du squelette sont représentées, sans qu'aucune ne se distingue par une fréquence particulièrement grande. Comme pour les Petits Ruminants, les restes crâniens (y compris les dents) sont les plus nombreux, sans que cela soit anormal, car d'un crâne brisé il reste naturellement davantage de fragments déterminables que d'un os long brisé. La courbe de fréquence est établie sur 40 restes dentaires. Comparée à la courbe de référence théorique (celle d'une population naturelle exploitée au hasard) on constate que la fréquence des jeunes est normale, qu'il y a un déficit marqué des jeunes de 2 à 4 ans, et un excédent des individus âgés de 9 à 11 ans. $\quad \chi^{2}=23.1$ est largement significatif.

TABLEAU VIII. Fréquences des classes d'âges du Bœuf.

| Classe | Observées <br>  <br>  <br> $n$ |  | Théoriques <br> $\%$ |  |  |
| :--- | ---: | ---: | ---: | ---: | :--- |
|  | 8 | 20.0 | 26.8 | 10.7 |  |
| $2-4$ | 3 | 7.5 | 19.9 | 8.0 |  |
| $4-6.5$ | 8 | 16.0 | 14.2 | 5.7 | $\chi^{2}=23.1$, significatif |
| $6.5-9$ | 6 | 12.0 | 9.9 | 4.0 | $(\mathrm{P}=0.05)$ au dessus de |
| $9-11.5$ | 11 | 22.0 | 6.8 | 2.7 | 7.81. |
| 11.5 ans | 4 | 2.5 | 3.7 | 1.8 |  |



Fig. F.1. Fréquences des classes d'âge et des restes osseux de Bouf (en haut) et de Petits Ruminants (en bas) :

A: niveaux III à IV, B: Niveaux III à VIII, R: courbe de référence théorique (population naturelle exploitée au hasard) Double trait: niveaux III à IV, trait plein, niveaux III à VIII; 1. omoplate, 2. humérus, partie proximale, 3. id. distale, 4. cubitus, 5. radius, partie proximale, 6. id. distale, 7. métacarpien, partie proximale, 8. id. distale, 9. phalange I, 10. phalange II, 11. phalange III, 12. métatarsien partie distale, 13. id. proximale, 14. cubonaviculaire, 15. calcanéum, 16. astragale, 17. tibia partie distale, 18. id. proximale, 19. fémur partie distale, 20. id. proximale, 21. pelvien, 22. crâne et dents, 23. vertèbres cervicales et thoraciques, 24. vertèbres lombaires et sacrées.

L'allure de la courbe, avec ses deux sommets pour les jeunes et les adultes d'âge avancé, évoque une distribution qui correspondrait à une mortalité naturelle. Cela indiquerait alors que le troupeau de Bœuf, qui devait se développer assez librement, était davantage exploité pour les productions des animaux vivants (lait, peut-être travail) que pour l'abattage à des fins alimentaires (Fig. F.1).

Les fréquences des différentes espèces représentées à Beycesultan sont résumées dans le tableau qui suit.

La figure F. 2 les exprime sous forme d'une courbe cumulative qui montre l'importance de l'élevage et la prédominance des animaux de consommation. Le Bœuf est en nombre aussi grand que le Mouton, la Chèvre et le Cochon ensemble.


Fig. F.2. Fréquences des espèces, en courbe cumulative:

1. Carnivores: a, Canidés, b, Félidés, c, divers; 2. Equidés et Camélidés sauvages: a, Cheval, b. Anes et Hémiones, c, Chameau; 3. Suidés sauvages; 4. Petits Ruminants sauvages: a, Antilopes et Gazelles, b, Chevreuil et Daim, c, Mouflon et Bouquetin; 5. Grands Ruminants sauvages: a, Grandes antilopes, b, Cerf, c, divers, d, Bœuf; 6. Carnivores domestiques: a, Chien, b, Chat, c, divers; 7. Equidés et Camélidés domestiques: a, Cheval, b, Ane, c, Chameau; 8. Suidés domestiques; 9. Petits Ruminants domestiques: a, Ovins, b, Caprins, c, divers; 10. Grands Ruminants domestiques: Bovins.

Cette liste comprend toutes les espèces ou groupes d'espèces susceptibles d'être rencontrés dans les sites du Proche-Orient. Le point 0 marque la séparation entre les espèces domestiques (à gauche) et les espèces sauvages (à droite).

TABLEAU IX. Fréquences des espèces.

| Groupe | Fréquence du groupe |  | Espèce (détermination ostéométrique) |  |  | F <br> \% |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $n$ | \% |  |
| Canidés | 5 | 1.8 | C. familiaris | 5 | (100) | 1.8 |
| Equidés | 5 | 1.8 | E. (Asinus) sp | 5 | (100) | 1.8 |
| Suidés | 33 | 11.9 | S. Scrofa cf. palustris | 33 | (100) | 11.9 |
|  |  |  | O. orientalis (anatolica?) | 5 | 16.7 | 5.7 |
| Petits Ruminants | 95 | 34.32 | $O$. aries cf. palustris | 10 | 33.3 | 11.4 |
|  |  |  | C. hircus prisca | 15 | 50.0 | 17.2 |
| Grands | 139 | 50.2 \} | Cervus elaphus | 6 | 4.3 | 2.1 |
| Ruminants |  |  | Bos taurus | 133 | 95.7 | 48.0 |

Résumé
Aussi bien au Bronze Moyen qu'au Bronze Récent, il s'agit d'une population d'éleveurs chez lesquels la chasse n'est qu'un appoint mineur à l'alimentation. Le Bœuf, d'une race de haute taille, était le principal animal domestique; il semble avoir été utilisé surtout pour les produits de l'animal vivant, et une certaine liberté était sans doute laissée au troupeau. Par contre, le petit bétail (un Mouton comparable au Mouton des palafittes et une Chèvre de petite taille aux cornes tordues surtout chez le mâle) était élevé surtout pour l'abattage à des fins alimentaires. Le Porc, assez abondant, était d'une petite race sensiblement plus évoluée que Sus scrofa palustris. Les autres animaux domestiques étaient l'Ane, et un Chien qui présente certaines affinités avec C.f. matris-optimae.

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## INDEX TO APPENDIX

(Excluding list of references)

Adametz, 144, 145.
Alishar Hüyük, 139, 144, 145, 147.
Anau, 144, 145.
Asinus, 141, 153.

Bate, D. M. A., 144.
Belic, J., 141.
Belt Cave, 144.
Bos taurus, 147 f., 151, 152, 153.

Calkin, V. I., 148.
Canis familiaris, 139, 140, 154.
Capra, 142, 144, 145, 146.
Cheval de Przewalski, 141.
Chèvre, 142, 143, 144, 145.
Chien Pariah, 139.
Coon, C., 144.

Dechambre, E., 139.
Dürst, J. U., 144.

Egypt, 144.
El Khiam, 144, 145.
Enkomi, 145, 147.
Equus, 140, 141.
Europe, 144.
Euphrates, 145.

Fikirtepe, 144, 145, 147.

Gromova, V., 141.

Harappa, 144.
Hilzheimer, 144.
Houlé, lac, 141.

Iran, 144.

Jéricho, 144, 145.

Kelm, H., 142.
Khirokitia, 145.

Lattringen, 141.

Mouton, 142, 143, 146 ff.

Ovis, 142, 143, 146 ff .

Palestine, 141, 144, 145, 146, 147.
Patterson, B., 139, 144.
Petits Ruminants, 150, 151, 152.
Pia, J., 144.
Prashad, B., 144.

Roucadour, 148.

Studer, T., 139.
Sus scrofa, 141 ff, 151, 153.

Tarpan, 141.
Taurus, 146.
Teodoreanu, 144.
Tel-Aviv, 145.
Toukh, 144.

Vaufrey, R., 144.

Wadi-al-Mughara, 144

Zeuner, 144, 145

## INDEX

(Mainly proper names, including map index)

Ablak, 76.
Abya, 76.
Aegean, 74, 75, 76.
Afșar, 76.
Agzıkara, 76.
air ducts, 7 and passim; description, 9.
Akçasar, 76.
Akharim, 76.
Akkeçili, 76.
Akköpru, 76.
Akok, M., 64 n. 3.
Akșehir, 80.
Alaca Hüyük, 65, 87.
Alișar, 71.
Alp, S., 72.
Alpaslan, 76.
altar, 39.
Alyamak, 76.
Anayurt, 76.
approach road to Palace, $7-8,31,61$.
Armutlu West, 76.
Arzawa, 73.

Bademlı, 76.
Bayraklı, 71, 75, 76, 78.
Bekirli I and II, 76.
Beyköy, 76.
Beyșehir, 76, 80.
Bittel, K., 71.
"blood altars", 40, 42, 43, 45.
Boehlau and Schefold, 78 n. 1.
Boǧazköy, 6, 65, 70, 71, 75.
bone burnish, 80, 82, Figs. P.2, P.12, P.13, P. 24.

Bolvadin, 76.
Bozüyük, 76.
Bözhüyük, 76 (bis).
"Burnt Palace", Ch. 1 passim, 39, 42, 61-2, 65, 66, 72, 73.
reoccupation, Ch. 4 passim, 101, Fig. A. 13.
Burun Hüyük, 76.
Büyükpınarı Burǧaz, 76.

Cappadocia, 61.
ceiling material, 12.
"Central Court", 5, 30, 32, 62, Fig. A.13.
Central Anatolia, 70, 71, 72, 74, 82, 87, 105, 111.
chronology, 3, 73-5.
cisterns, 14, 15, 26, 31.
Cretan palaces, 18, 33, 62.
Cretan shrines, 45.
"cult post", 45, 55, 56, 62.
Cyclades, 93.

Çakir North and East, 76.
Çapak, 76.
Çarșamba valley, 80.
Çatal Hüyük, 60.
Çavundur, 76.
Çerkes Çukurhisar, 76.
Çivril, 76.
Çobanlar Kadıyerı, 76.
Çobanlar Kadıyük, 76.
Çukurhisar, 76.
decorative pegs, $24,34,65$.
Demirköy, 76.
Dinar, 76.
Dișli, 76.
drum, 12, 93, 117, 121, Figs. P.8, P.23, P.29; Pl. $6 a$.
door socket in copper, 23, 66.
door in situ, 24, 66.
earthquakes, 64.
Eflatun Pınar, 76.
"egg-shell ware", 81, 83, 103, 119, 129, Figs. P.5, P.25, P.33.
Eǧret, 76.
Eğridir, 76.
Ekinova, 76.
Elmacık, 76.
Elmalı West, 76.
Emirhisar, 76.
entrances to Palace, 5, 7, 31, 61.
Eskişehir, 80.
Evans, A., 33.

Feleli, 76.
felt, 25, 61.
figurine, 44 .
fortification walls, $5,35,38,45,47,61$.
French, D. H., 75.
Fuğlar (Kızlar), 76.
funnels, 52, 117, Figs. P.16, P. 20.
furniture, 25.

Gazligöl, 76.
Geberen, 76.
Geçek, 76.
Gelendost, 76.
Gencalı, 76.
Geyzen, 76.
Gordion, 64, 65, 66.
Göndürler, 76.
"Great Hall", 23, 26, 27, 31, 32, 50, 65.
Greek Temple, 45, 62.

Hacıkebir, 76.
Hacılar, 60.
Halys, 79.
Hamidiye, 76.
Hanay Tepe, 87.
Hattusilis I, 73.
hand axe, 51.
Helbaek, H., 35.
Hermus, 75, 76.
Hittite Old Kingdom, 73, 74.
Huzai Hammam, 76.

Karaçayir, 76.
Karahisar, 76.
Kara Hüyük Eskișehir, 76.
Kara Hüyük Konya, 70, 72, 73, 79, 83, 87 ; bird vessels, 93.
Karakurt, 76.
Karamusa, 76.
Katırkulesi, 76.
Kavakli Kahve, 75.
Kayacik, 76.
Kayseri, 79, 82.
Keramik, 76.
Kesilmiş, 76.
Kınnık Mezar, 76.
Kızılhisar, 76.
Kızılviran, 76.
kiln, 53, 54.
Koca Hüyük, 76.
Kolossai, 76.
Konya Plain, 70, 71, 72, 76, 79, 80, 82, 87, 105.
Kozluca, 76.
Köprüören, 76.
Kusura, 71.

Labarnas, 73.
Lamb, W., 71.
Larisa, 76, 78.
Lemnos, 61.
Lesbos, 61.
"Little Palace", 74.
Liz Hüyük, 76.
"Lustral Chamber", 8, 10, 30, 31, 91.
lustration sinks, 10, 37.
Luvians, 61.
"imitation handles", 76, 79, 80, 83, Figs. P.12, P.13, P.24.

Incetepe, 76.
Indo-Europeans, 61.
İney, 76.
infant burials, 58.
İshakli-Elmalı, 76.
İskele Hüyük, 76.
İsmailköy, 76.
İzmir museum, 76.
juniper, 66.
kantharoi (quatrefoil cups), 105, 119, Figs. P.28, P.35.

Karaali Ciftliǧi, 76.
Karaca, 76.
Karacaahmet, 76.

Maeander valley, 74, 75, 76, 78, 80.
Mahmutköy, 76.
Malatya, 65.
Manahoz, 76.
Mancarlı, 76.
Manisa, 76, 78.
matting, 45, 57, 61.
Medet, 76.
megaron, 39, 40, 54-6, 60-1, 64, 66.
Mellaart, J., 57, 60.
metal vessels, $70,71,82,87,91,103,111,117$.
Midas City, 76.
Miletus, 74, 75.
Minoan palaces, of. Cretan Palaces.
Minoan pottery, 74.
"Minyan Ware", 76.
Mirtaz, 76.
Mycenaean Greece, 61.
Mycenaean pottery, 74.

Naumann, R., 64, 65.
Nazili, 75.
newels, 13.
North West Anatolia, 76, 78, 101, 105, 118.
Nuhköy Akpınar, 76.
offering table, 29.
Orontes valley, 6, 65.
Ortaca, 76.
Ördeki, 76.
Özgüç, T., 42, 62, 64, 65.
"Painted Hall", 14, 16, 17, 27, 30, 66, Fig. A. 13.
"painted room", 11, 30, 31, Figs. A.6, A.13.
painted pottery, 91, 93, 131, 133, Figs. P.9, P.10, P. 35.
"Palace ware", 75, 80, 82, 83, 91, 103, Figs. P.4, P.5, P.16, P.33.
pattern burnish, 69, 80, 129, 131, Figs. P.15, P.32, P.33, P.35.
pavements, 7 and passim.
Phrygians, 64, 66.
Pinar II, 76.
Pınarbașı Gölü, 76.
piano nobile, 33.
Poliochni, 61.
"Portico", 21, 22, 30, 31, 32, 33, 42.
"Public buildings", 3, Ch. 2 passim, 49, 61, 62.

Radiocarbon date, 73-4.
ramps, 5, 7, 17, 23, 24, 27, 28, 32, 33.
red cross bowl, 73, 82.
Religious shrines: Early Bronze Age, 39, 45, 72, 73; Middle Bronze Age, 3, Ch. 3 passim, 49, 54-6.
rushes, 7,16 n.l, 20, 21, 24, 26, 32.

Sadıkbey, 76.
Salar, 76.
Salur, 76.
Sandiklı, 76.
Sarayköy Uzerlik, 76.
Sarıbayir, 76.
Seller, 76.

Seydișehir, 80.
Sizma, 76.
"sleeping platforms", 61.
Sorkun, 76.
South West Anatolia, 75, 76, 85, 93, 101, 121.
spindle whorls, 43, 51.
stairways, 12, 13, 14, 15, 18, 31, 33.
stamp seal, 37.
stelae, 28, 29.
stone foundations, 9 and passim. Fig. A.5.
stone-carving, 34.
straw, 25.
Stubbings, F. H., 74.
Syro-Hittite architecture, 65.
Syro-Palestinian lamp, 121, 133, Fig. P.36.

Tarsus, 73, 75.
Tatarl, 76.
Tatarmuhat, 76.
Tavșanlı, 76, 80.
Tayinat, 6, 65.
Tefenni Hüyük, 76.
textiles, 7.
Tez, 76.
Theriomorphic vases, 47, 48, 93, 95, Figs. A.21, P.11, P. 37.

Thermi, 61, 76.
timber foundations, 21, 23, Figs. A.10, A. 11.
timber reinforcement, 8 and passim. Figs. A.5, A. 11.

Tolca, 76.
Troy, 61, 65, 73, 75, 76, 78, 83, 85, 87.
Tudor buildings, 64 .
Tulutepe, 76.

Upper floor, 7, 16 n.1, 20, 24, 25, 26, 33, 45, 50, 64-5.
Uzunpinar, 76.
verandah, 15, 27.
wattle and daub, 57.
Weickert, C., 74.
Western Anatolia, 70, 71, 79, 129.
wheat, 25.

(a) First clearances in the south-east wing

(b) South-east wing: excavation in progress

(a) South-east wing; after excavation

(b) South-east wing with Room 16 in foreground

(a) Room 10: the "Painted Loggia"

(b) Hearth (1) and fallen timber (3) in Room 10

(a) Room 9 with Rooms 14, 4 and 2 in background

(b) Fragments of fallen ceiling from Room 14

(a) Room 9 with cistern emplacements of Court 1 in background

(b) Screened vestibule north of Court 1 with impressions of floor-beams

(a) Terracotta drum in ceiling debris of Room 9

(b) Court 1: chase in beam-end for tongued foot of wooden post

(c) Rooms 7 and 13. In foreground, secondary silo on fallen upper floor

(a) Water-cooler found in Courtyard 8

(b) Timbers bedded in stone outside southern enclosure wall

(a) Painted plaster on south wall of Room 20 ("Painted Hall")

(b) South-west corner of Room 20 with impressions left by fallen column

(a) Remnants of stonework in Rooms 22 and 23

(b) Heavy deposit of partly calcined stone in Room 23; assumed remains of main stairway

(a) Carbonized joists over air-passage in south-east corner of Room 45

(b) Unidentified structure in the north-east corner of Room 45

(a) South wall of Room 17, showing (1) plastered face, (2) unburnt paving of air-passage, and (3) joist-end embedded in earthen floor


[^22]
(a) West Wing in the process of excavation

(b) Room 31: foundations of east wall

(a) Room 32: brickwork and foundations in north-east corner

(b) Room 28: timber foundations of south wall

(a) Well-preserved wall between Rooms 28 and 29 with charred threshold of doorway

(b) Charred fragment of door-lining (?) with wooden bosses

(c) Fragment of door to Room 28 showing framed or two-ply construction

(a) Fallen upper floor of Room 28 with (rt.) secondary structure

(b) South doorway of Room 34 with door preserved

(a) Fallen upper floor of Room 33 with deposit of straw bedding

(b) West Wing after excavation, seen from the north-west

(a) Fragment of wooden column lying in Room 36

(b) Carbonized rushes from fallen upper floor in Room 40

(a) Straw bedding from fallen balcony (?)

(b) Straw bedding covering fallen balcony (?) in south-east corner of central courtyard

(a) Three upright stelae and stone structure at the base of ramp leading to west entrance of palace (foreground).

(b) Paved room at base of ramp in Trench " D "

(a) Public buildings in Trench " S ", from the east

(b) Early Bronze Age pottery emerging from beneath the foundations of Level V public building

(c) Western corner of Room I, showing, (1) foundation beam bedded in stone, (2) runnerbeams in stone substructure of outer wall, (3) and (4) brickwork of partition wall

(a) Find-spot of stamp-seal beneath Level VI pavement in Room 4 (arrow)

(b) Sink for lustration in Room 5, rebuilt at secondary occupation

(a) Two religious buildings of Level V in Area " R ", from the west

(b) Smaller Level V shrine after excavation

(a) Central pedestal and "blood-altar" in smaller shrine, from the north-east

(b) Level V "temple" building, from the east


(c) Room 6, showing doorway to Room 7 partly blocked

(a) "Blood-altar" and fallen beams in Room 4

(b) Trench "W". Stone foundations of Level V enclosure wall

(a) House at Level IVb in Area " CC'", from the north-east

(b) Room 10 at Level IVb

(a) House at Level IVa in Area "CC'", from the north-east

(b) Area " R ". Clay pedestal for upright pillar and stone pavement approaching smaller shrine in Level IVb

(a) Deposit of Level IVb pottery over north wall of Room 16 in Palace

(b) Same deposit with vessels numbered

(a) Level IVb. Wood-framed hearth and clay pedestal containing charred stump of wooden pillar

(b) Area " R ". Megaron and lustral chamber in Level IVa


Surviving pottery from the Burnt Palace, Level V. Above: Reg.
No. 195. Below: Reg. Nos. 196-199


Selected pottery from Level V
No. 1. Reg. No. 621. From "'S
2. Reg. No. 128. From Temple in "R". Rm. 6., No. 12

From
Rm. 5
Rm. 2
5. Reg. No. 548. From "A"
6. Reg. No. 546. From "C"


Two theriomorphic vases. From " U ", Reg. Nos. 623-624


Selected pottery from Level IV
No. 1. Reg. Nos. listed in group inventory. (Group in "E ")
No. 2. Reg. No. 539. From " M'
No. 3. Reg. No. 482. From "K"
No. 4. Reg. No. 539. From " M'
No. 5. Reg. No. 872. From "R"


Race de Chèvre de type mambrin du Proche Orient; (a) mâle, (b) femelle (Région de Gaziantep) (Photo P. Ducos)
M.B.A. (4-5 phases)

|  | $>$ | 足 | $\sum$ | $\sum_{i}^{\text {a }}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 36 | $\times$ | $\times$ | $\times$ | $\times$ | $\rightarrow$ | 1 |
| 45 | $\times$ | $\times$ | R |  |  | 2 |
| 46 | $\times$ |  |  |  |  | 3 |
|  | $\times$ | $\times$ | R |  |  | 4 |
| 4 | $\times$ |  |  |  |  | 5 |
| 6 | $\times$ |  |  |  |  | 6 |
| 49 | $\times$ | $\times$ | $\times$ | $\times$ | $\rightarrow$ | 7 |
| 39 | $\times$ | $\times$ | $\times$ | $\times$ | $\rightarrow$ | 8 |
| $4^{8}$ | $\times$ | $\times$ | $\times$ | $\times$ |  | 9 |
|  | $\times$ | $\times$ | $\times$ | $\times$ | $\rightarrow$ | 10 |
| 9 | $\times$ |  |  |  |  | II |
| 37 | $\times$ |  |  |  |  | 12 |
| $\rightarrow$ | $\times$ | $\times$ |  |  |  | 13 |
| $\rightarrow$ | $\times$ |  |  |  |  | 14 |
| (15) | $\times$ | $\times$ | $\times$ | $\times$ | $\rightarrow$ | 15 a |
|  | $\times$ |  |  |  |  | 15b |
|  | $\times$ | $\times$ | $\times$ |  |  | 15 c |
| 28 | $\times$ | $\times$ | $\times$ |  |  | 16 |
| 29 | $\times$ | $\times$ | $\times$ | $\times$ | $\rightarrow$ | 17 a |
|  | $\times$ |  |  |  |  | 17 b |
| 4 I | $\times$ | $\times$ | $\times$ |  | $\rightarrow$ | 18 |
|  | $\times$ | $\times$ | $\times$ | $\times$ | $\rightarrow$ | 19 |
| $\rightarrow$ | $\times$ |  |  |  |  | 20 |
|  | $\times$ | $\times$ | $\times$ | $\times$ |  | 21 |
|  | $\times$ | $\times$ |  | $\times$ |  | 22 |
|  | $\times$ | $\times$ |  |  |  | 23 |
|  | $\times$ | $\times$ |  |  |  | 24 |
| $\rightarrow$ | $\times$ | $\times$ |  |  |  | 25 |
|  | $\times$ |  |  |  |  | 26 |
|  | $\times$ | $\times$ |  |  |  | 27 |
|  | $\times$ | $\times$ | $\times$ |  |  | 28 |
| $\rightarrow$ | $\times$ | $\times$ | $\times$ | $\times$ |  | 29 |
| $\rightarrow$ | $\times$ | $\times$ |  |  |  | 30 |
|  | $\times$ | $\times$ | $\times$ | $\times$ | $\rightarrow$ | 3 I |
|  | $\times$ | $\times$ |  |  | $\rightarrow$ | 32 |
|  | $\times$ | $\times$ | $\times$ | R |  | 33 |
| $\rightarrow$ |  | $\times$ | $\times$ | $\times$ | $\rightarrow$ | 34 |
|  |  | $\times$ | R | $\times$ | $\rightarrow$ | 35 |
|  |  | $\times$ | $\times$ | $\times$ |  | $3^{6}$ |

(continued)

| $\underset{Z}{0}$ | $E$ | Z |  |  |
| :---: | :---: | :---: | :---: | :---: |
| $\times$ |  |  |  | 37 |
| $\times$ |  |  | $\rightarrow$ | $3^{8}$ |
| $\times$ | $\times$ |  | $\rightarrow$ | 39 |
|  | R | R | $\rightarrow$ | $4^{0}$ |
|  | $\times$ |  |  | 41 |
|  | $\times$ |  | $\rightarrow$ | $4^{2}$ |
|  | $\times$ |  |  | 43 |
|  | $\times$ |  | $\rightarrow$ | 44 |
|  | $\times$ |  |  | 45 |
|  | $\times$ | $\times$ | $\rightarrow$ | $4^{6}$ |
|  | $\times$ |  |  | 47 |
|  | $\times$ | $\times$ |  | $4^{8}$ |
|  |  | $\times$ | $\rightarrow$ | 49 |
|  |  | $\times$ | $\rightarrow$ | 50 |
|  |  | $\times$ |  | 51 |
|  |  | $\times$ | $\rightarrow$ | 52 |
|  |  | $\times$ |  | 53 |
|  |  | $\times$ |  | 54 |
|  |  | $\times$ | $\rightarrow$ | 55 |
|  |  | $\times$ | $\rightarrow$ | 56 |


| $\underset{\substack{\infty \\ \infty\\}}{\circ}$ | Distribution of Decorative Features |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | > | 兄 | B |  | $\Xi$ |  |
| $\rightarrow$ | $\times$ | $\times$ | R |  |  | Relief "w " handle |
|  |  |  | $\times$ |  |  | Rim Lugs |
|  |  | $\times$ | $\times$ | $\times$ |  | Slit in Handle |
|  |  |  |  | $\times$ |  | Dimple in Handle |
|  |  | R |  | $\times$ | $\rightarrow$ | Grooved Wavy Line |
|  |  | R |  | $\times$ | $\rightarrow$ | Pattern Burnish |
|  |  |  |  | $\times$ | $\rightarrow$ | Horizontal Grooves |
|  |  |  |  | $\times$ | $\rightarrow$ | Painted Wares (Rare) |

Legend:
$\rightarrow$ Continuity from Earlier or into Next Period R = Rare
$x=$ Present


Scale as shown, except no. $17\left(\frac{1}{3}\right)$, no. $33\left(\frac{2}{3}\right)$, nos. 27-29 ( $\frac{1}{5}$ ).


Scale as shown, except nos. 27, 30, $33\left(\frac{1}{2}\right) ; 28,29\left(\frac{1}{5}\right)$.

* Marks first appearance of a new shape.


3. Beycesultan IVb pottery shapes

Scale as shown, except nos. 32 and $33\left(\frac{1}{2}\right)$.

* Marks first appearance of a new shape


4. Beycesultan IVa pottery shapes

Scale as shown, except no. 29 ( $\frac{1}{2}$ ).

* Marks first appearance of a new shape.


[^0]:    ${ }^{1}$ For a discussion of the mound's stratigraphic anatomy, compare Beycesultan I, pp. 17 ff .
    ${ }^{2}$ Beycesultan I, pp. 9 ff . and site-plan, Fig. 1.

[^1]:    ${ }^{1}$ It will be understood from the key-plan in Fig. A.3, where the lines of the hundred-metre grid are oriented north and south, that the walls of the palace on the river side actually face approximately south-south-east. For convenience however, we have taken this to be the "south" side of the building and shall describe the rooms accordingly.

    2-O.P. 8

[^2]:    ${ }^{1}$ See also $A S$, IV, Fig. 6, p. 114.

[^3]:    ${ }^{1}$ Approaching the south-west corner of this room from the direction of Court 1 in 1954, we had encountered a small square vestibule, whose floor was supported on wooden beams. Further clearances in 1956 revealed a detached pier of brickwork, enclosing this vestibule on the north side, and beyond it the lower part of a huge wooden column, which appeared to have subsided into an air-duct. An attempt was then made ( $A S$, Vol. VI, 1956, Fig. 4, p. 110), to restore the plan of the "Painted Hall" with piers and columns symmetrically arranged to form a portico. When finally in 1959 an extended area was opened to the west, this reconstruction proved to have been erroneous. Also, in our perspective sketch made at that time, (loc. cit., Fig. 5, p. 112), the wide area of rush-strewn pavement to the north-west of the vestibule proved afterwards to be the remains of a fallen upper floor.

[^4]:    ${ }^{1}$ In our reconstruction (Fig. A.13) we have suggested that in such cases a bulwark of timber was built up to serve the purpose.

[^5]:    ${ }^{1}$ At the risk of confusing our description of the west wing as finally revealed, it is necessary to mention this preliminary operation, because an attempted restoration of these walls was made in our second interim report ( $A S$, Vol. VI, 1956, Fig. 8, p. 117). This sketch afterwards proved to have been substantially correct, save that here, as in other reconstructions made at the time, vertical posts occurring at the intersections of the walls were wrongly placed (cf. Fig. A.10). A picture of this wall during the subsequent examination of its foundations appears in Pl. XIIb.

[^6]:    ${ }^{1}$ It may be remembered that almost unmistakable traces of such a floor covering were found in an Early Bronze Age setting in Trench "SX", just inside the doorway leading from the "Priest's Room" into Shrine XVa. Cf. Beycesultan I, p. 45.
    ${ }_{2} A S$. XI (1961), p. 77 ff. "Late Bronze Age and Byzantine Crops at Beycesultan in Anatolia."

[^7]:    ${ }^{1} A S, \mathrm{X}$, p. 40.

[^8]:    ${ }^{1}$ T. Özgüç, Kültepe-Kaniş, Ankara 1959, Fig. 21, p. 22.
    ${ }^{2}$ The pottery in these rooms, numbered in Fig. A.17, is listed in the inventory on pp. 43-45.

[^9]:    ${ }^{1}$ The level VI retaining wall may be seen in Section B-B of Fig. A.18.

[^10]:    ${ }^{1}$ T. Özgüş, Kültepe-Kaniş (Ankara 1959), p. 72.

[^11]:    ${ }^{1}$ op. cit., p. $22 . \quad{ }^{2}$ op. cit., p. 83.
    ${ }^{3}$ T. Özgüç and M. Akok, Kültepe 1948, Pl. II.
    4 Architektur Kleinasiens, p. 332.
    ${ }^{5}$ Cf. R. Young in A.J.A. 64 (1960), pp. 238 and 239.

[^12]:    ${ }^{1}$ op. cit., p. 238.
    ${ }^{3} \mathrm{op}$. cit., Figs. 80 and 83.

[^13]:    ${ }^{2}$ Naumann, op. cit., p. 93, Fig. 78.

    - T. Özgüç, op. cit., Fig. 40, p. 31.

[^14]:    ${ }^{1}$ R. Young, op. cit., p. 241.

[^15]:    ${ }^{1}$ See tables of occurrences in folder at end of volume.

[^16]:    ${ }^{1}$ K. Bittel, Kleinasiatische Studien (Istanbul, 1942), p. 185.
    ${ }^{2}$ E. Akurgal in DTCD, VIII (2), 1950, pp. 57-8 and note 25.
    ${ }^{3}$ K. Bittel, Die hethitischen Grabfunde von Osmankayast (Berlin, 1958), pp. 26-27.
    6-о.Р. 8

[^17]:    ${ }^{1}$ Letter dated 3 April 1956.
    ${ }^{2}$ C. Weickert in Istanbuler Mitteilungen, 7 (1957), pp. 117-8.

[^18]:    ${ }^{1}$ Bayraklı: DTCD, VIII (2), 1950, Pl. VIIIa. Boehlau and Schefold, Larisa am Hermos, III (1941), p. 5, Pl. 3:15.

[^19]:    ${ }^{1} A S$, XIII (1963), p. 236.

[^20]:    20. Plain red ware
    21. Buff ware, brown wash
    22. Coarse brown ware
    23. Buff ware, red wash. Palace, Room 10. BS. 54, 196
    24. Buff ware, red-burnished wash. Palace, Room 10. BS. 54, 197
    25. Hand-made plain buff ware
    26. Buff ware, brown wash
    27. Plain buff ware
    28. Hand-made buff ware, red-burnished surface
    29. Buff ware, orangy polished wash
    30. Buff ware, dark brown burnished wash
    31. Hand-made buff ware, red wash
[^21]:    ${ }^{1}$ DAP $=$ Diamètre antéro-postérieur.
    ${ }^{2}$ Chateauneuf-lez-Martigues, France.

[^22]:    (b) Cross-section of Room 18, showing, (1) earthern floor, (2) subsided bridging of air-passage, and (3) brickwork of

