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UTNUR EXCAVATIONS

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1. INTRODUCTION

The excavation which forms the subject of this report was done while my wife and I were on a field trip to India and I was on study leave from the School of Oriental and African Studies, University of London. The summer months of 1957 were spent in exploration in Raichur, Bellary, Kurnool, Mahbubnagar and neighbouring districts and indicated to us that the ash mound at Utnur was the most promising site of that class for excavation. At this stage I should like to acknowledge my gratitude to the former Director of Archaeology of Andhra Pradesh, Dr. P. Srinivasachar, who generously suggested that his Department should undertake an excavation at the site under my technical direction. This arrangement was similar to that which we had made for our excavations at Piklihal in 1952. I proposed that the excavation should be of modest scale and an expenditure of about Rs. 1,500 was agreed upon. Accordingly the work was undertaken in the months of August and September, 1957. The peculiar nature of the site had made it all along probable that its interest would not lie in the quantity or quality of finds and our expectation was fully justified. Accordingly the entire study of the materials, drawing and photography was done, at least in preliminary form, while we were in Hyderabad during the autumn and winter of 1957-58.

After my return to England, when I came to write the report of the excavation I realised that the problem of the ash mounds was notably nearer solution as a result of our work. I found also that my research divided itself into two parts : the archaeological account of the excavation, and the more general account of our other field work, the study of modern place-name evidence, ethnographic and traditional evidence, etc. Rather than burden this report with such material I decided to publish a separate volume upon this aspect including therein a summary of the excavation report, and to publish here the excavation report in full. Readers who are interested in the wider aspects of the ash mounds should consult also my Deccan Ash mounds (in press).

Terminology

The terminology used in this report follows closely that of the *Piklihal Excavations* (Vol. 1 of the Andhra Pradesh Acrhaeological Series, Hyderabad, 1961). Particularly in analysing the pottery from the site, I have followed the same system of nomenclature which I used in the earlier report. The following table appears adequate as a classification of the varieties of pottery at present known in the Raichur Doab :—

Ware	*Culture Sequence*	*Varieties*	*Short description*
A 1	Lower-Upper Neolithic	Grey, black, buff	Hand-made, without burnish
..	..	Incised	..
..	..	Perforated	..
..	Upper Neolithic	Rusticated	With roughened surface
A 2	Lower-Upper Neolithic	Grey, black, buff	Hand-made, burnished
..	..	Ochre painted	A post-firing wash of red ochre, generally in bands
A 3	Lower Neolithic	Red, black, brown, Ochre Chocolate	These colours are those of distinctive burnished dressings applied before firing
..	..	Painted	Purple ochre paint applied before firing
A 4	Upper Neolithic	Grey, buff, mottled	Burnished, often turn-table made, with surface fusion.
A 5	..	Grey-, buff-, Olive-, green-and-black	Similar to A 4, suggestive of black-and-red ware
AB	Late Neolithic	Painted	Buff or red, unburnished matt slip, wheel-thrown with purple ochre paint
B 1	Iron Age	Black-and-red, Black, Red	Burnished, often hand made, sometimes wheel-thrown, 'Megalithic'
B 2	Early Historic	Black-and-red	Painted with white pigment under russet dressing,'Andhra'
B 3	Iron Age, Early Historic, Early Medieval	Black, Red, Black-and-red	Wheel-thrown, not burnished
B 4	Early Historic-Early Medieval	Red	Without slip or burnish
C 1	Early Historic	Rouletted ware	Only as an import, rare
C 2	..	Red gloss, Red Polished ware	Only as an import, rare
D 1	Medieval-Modern	Brown, Black, grey,buff	Unburnished, wheel and beater made, existing potting tradition

Acknowledgements

Once again I must express my deep gratitude to all members of the staff of the Andhra Pradesh Archaeological Department for their kind and continuing assistance. I must in particular mention Syed Ahmed, the Excavation Assistant, upon whom a great part of the administration and field work fell. Without his help the excavation could not have been so successful. Also I wish to mention the work of Aminuddin who was responsible for the preservation and lifting of the cattle hoof-impressions from the floor of the earliest level of the site. I should also like to express my gratitude to Sri N. Ramesan M.A. I.A.S., the present Director of Archaeology in Andhra Pradesh for the help he has given me in preparing this report for the press. I must also acknowledge the help of the British Museum Laboratory in testing a charcoal sample. Finally I must thank my wife for her continuing help in both field and publication.

2. THE PROBLEM OF THE ASH MOUNDS

The first discovery of the ash mounds was made by Col. Colin Mackenzie at the opening of the 19th Century. Some decades later they were noticed by the geologist Newbold who published two papers on them and attracted the attention of Prinsep and others[1]. Newbold made a number of pertinent observations. He demonstrated that the mounds were in some ways the result of human activity and were not natural phenomena. He also enquired what that activity could have been, and ruled out most of the industrial processes to be found in the Deccan. Another 30 years passed before Bruce Foote, another geologist, visited an ash mound. Foote's interest was at once aroused. His keen observations quickly confirmed Newbold's view and his field work in Bellary district also revealed a number of other mounds. After much thought Foote concluded that the mounds were composed of burnt cow-dung, accidentally fired, and that they represented some sort of connection with the Neolithic people of the Deccan[2]. His views were confirmed by the analysis of an ash sample from the Gaudur mound collected by the mining engineer Bosworth Smith. He also noticed fragments of stone implements and pottery in several of the mounds.

But other archaeologists were not quick to accept Foote's hypothesis. Sewell grudgingly accepted it in part but sought to explain the other mounds by a theory that they were the sites of vast funerary holocausts, massed *satis*, etc. And others followed him in ignoring Foote's views. Among them we may specially note Captain Leonard Munn and his assistants in the Hyderabad Geological Survey who reported many new sites in Raichur and Gulbarga districts. Munn was as unable to explain the mounds as others, but his explorations resulted in the discovery of many new sites including the Utnur mound itself.

A new chapter in S. Indian pre-history opened with Sir Mortimer Wheeler's excavation at Brahmagiri in 1947. This provided for the first time stratigraphical proof of many of Foote's ideas, including his view that the S. Indian Neolithic was succeeded directly by the Iron Age, with which the Megalithic graves were associated. Further proof of Foote's genius came from Professor Subbarao's excavation at Sangankal. In 1952 the excavations at Piklihal provided for the first time a quantity of animal bones from Neolithic living sites, together with fragments of terracotta figurines of humped cattle. The excavations at Maski in 1954 confirmed this prominence of cattle, and thus these excavations also appeared to confirm Foote's hypothesis regarding the ash mounds. Another more direct piece of evidence came from the analysis of an ash sample from Kudatini mound collected in 1949 by Professor Zeuner. This showed that its constituent parts were remarkably similar

1. T. J. Newbold, 'Note on the 'occurrence' of volcanic scoria in the Southern Peninsula', JASB. V, 1836, pp. 670-1; 'On some ancient mounds of scorious ashes in Southern India', JRAS. VII, 1843, 129–36

2. R. B. Foote, especially in *JASB* LVI, pt. 2, 1887, pp 259-82 and *Indian Prehistoric and Protohistoric Antiquities*, Madras 1916, pp. 79-96.

to those of modern burnt cow-dung, while microscopic analysis revealed the skeletal remains of grass[3].

Armed with this new evidence I determined to use my next study leave in India for an examination and if possible excavation of an ashmound. This report is one of the fruits of that plan. Foote's hypothesis, which I have been able to support on only circumstantial evidence in my thesis (1954), is now seen to be fully vindicated and one can only repeat the admiration which Professor Subbarao and others have felt for Foote's work. Here was a geologist who without ever setting spade in soil succeeded in observing the vital surface indications and in collecting significant surface material. Armed only with these tools and with his keen inductive mind he tells us that his thoughts were greatly occupied with the problem. How far he was correct the following pages report.

3. F. Zeuner, 'On the origin of the cinder mounds ot the Bellary district, India', *Bull. Inst. of Archaeology*, "2, 1959. 37-44".

3. EXPLORATIONS AROUND UTNUR

The village of Utnur lies in the eastern part of the Raichur Doab, some twenty-three miles south-east of Raichur itself and about seven miles north of the river Tungabhadra. (Fig. 1). Since 1956 it is in the Mahbubnagar district of Andhra Pradesh. It lies south of the old track from Raichur to Macharla and Ij and of the newly aligned road from Yergara to Alampur, via. Macharla, Ij and Bommakuru. It is about two and a half miles west-south-west of the market-village of Ij, which is itself a place of some historic interest. The Utnur ash mound is north-west of the village, near the track to Idguanpalli. It is in the centre of a small outlier of Dharwar rocks which is alsmost entirely masked by soil cover. The rocks here are horneblende schists overlapped by the neighbouring pegmatoid gneisses. The topography of the area is remarkably open. The nearest hills of any size are the granite outcrops around Alur, some ten miles to the north, and the small quartz reefs which form distinctive landmarks both to the East, and nearer at hand, to the west beyond the village of Anthampalli. The site is about 1,100ft. above sea level and there is a fall of a hundred feet between it and the valley of the Tungabhadra at its nearest point. The soil covering varies, not apparently in strict relation to the underlying rock formations : south of the mound it tends to become fine and loamy of orange or reddish-brown colour ; around the mound and thence northwards to the stream at a distance of about 250 yards it is markedly sandy ; while beyond the stream it is darker and approaches the typical black cotton soil of the region. The whole vicinity is today known for its *tadi* and *saindhi* palm trees, which grow profusely along the water courses (Pl. 1). Whether these are recent importations, or were already present in Neolithic times we have not established. The stream to which we have referred is a tributary of the Ij stream and drains away south-eastwards towards the Tungabhadra. Though it flows only after the rains, its bed provides a more or less perennial source of water.

Before our excavations in 1957 no Neolithic sites had been reported in the Raichur Doab east of Raichur. Nonetheless there are various other later sites as well as several ash mounds in the neighbourhood. Further, south of the Tungabhadra there are in Bellary and Kurnool many other Neolithic sites. Munn recorded no less than three ash mounds, besides that which is the subject of this report[1] : just south of Manchanpalli, some four miles northwest of Utnur there are two small mounds which have both been all but destroyed by villagers ; a third and larger mound is to be found west of the village of Kutuknuru, about ten miles south-west of Utnur and near the banks of the Tungabhadra. On the south bank of the river, Professor Subbarao recorded a number of factory sites for the manufacture of

1. Munn, L. *JHGS*, III, pt. i. 79.

Neolithic stone blades, at Nagaldinne, Gurjala and Raychoti[2]. To the northeast, some ten miles away, there are several groups of stone circle graves near Madnakal and Idulpalli, but these appear to be outliers of the concentration of such sites around Gadwal, and none are known nearer Utnur. There is one other site of some interest at Ij itself. The modern Ij (variously pronounced Aij, Aiji, Awaj, Awaji and even Auji, is a large market village with police station. It is on the banks of a small nallah, which flows during the monsoon rains. In the southeastern part of the village is a considerable mound, roughly square and about 200 yards long. Its height in the centre is about 25 feet. There are two temples on the top, the more modern structure having in the *garbha-griha*, a pit some 15 feet deep at the bottom of which the main icon is placed. The other temple is a shrine of *Martandeswara*, probably of 12th-13th century construction ; it contains several Surya icons of similar date(Pl. 2 b). The lower parts of the temple are of stone, but the *sikhara* and remains of the gable projecting in front of it are vaulted and of burnt brick (Pl. 2 a). This temple is on the southern edge of the mound and beside it is an abrupt cliff of about 15 ft. cut into by villagers to obtain soil. Here there are visible traces of occupation strata and building levels. Indeed, below the temple itself, at a depth of about four feet, well cut masonry slabs of considerable size appear which must belong to some earlier temple ; and there are traces of the foundations of an even earlier masonry structure several feet below this. It may be expected that the first temple on this site goes back at least to early Chalukyan times, if not before. Still lower at the very foot of the exposed section I noticed some walls of sun-dried bricks : an architectural material which is unusual in this area. The section also produced quantities of pottery, but it was predominantly grey D ware in the upper levels and red B ware in the lower. None of the pottery which I saw need necessarily have been as early as the Satavahana period, but it must be emphasised that the base of the mound was at no point visible. On the banks of the nallah, about 600 yards south of Ij, there is another low mound, probably not more than three feet in depth. This produced B 1 and B 3 red and black-and-red ware, and also two sherds of B 2 painted ware, and it may be assigned with some confidence to an occupation of the first centuries of the Christian era. There remains for notice the village of Utnur itself, with its imposing temple of the fifteenth or sixteenth centuries. Two gold coins of that period were recently discovered in the neighbourhood of the temple.

The first report of the Utnur ash mound is in the *Journal of the Hyderabad Geological Survey* (vol. III, pt. 1, p. 77) where it is named after the village of Idguanpalli and fairly accurately described. However, the mound is situated on the lands of Utnur village and thus we have seen fit to rename it. It lies on the north side of the track from Ij to Idguanpalli at a place where the track has cut down to a depth

2. B. Subbarao, Prehistoric and Early Historic Cultures of Bellary, Ph. D. Thesis for Bombay University, (1949) 92-8, quoted with authority.

of six feet below the surrounding land. This cutting was made, or at least enlarged, within living memory and there is a tradition that whole vessels of red pottery were discovered at the time. To this day copious sherds of red B 3 type pottery may be found in the upper portions of the banks on either side of the track. The mound itself is roughly square and about 200 feet along each side (Fig. 2). To the west it terminates in a modern boundary bank, while to the south, between the mound and the track, is a shallow depression. The greater part of the mound is only two to three feet higher than the surrounding field, but in the southwest corner it rises to a height of ten feet (Pl 1b). The whole mound excluding this higher portion is under cultivation. It is remembered in Utnur that it lay as waste land until some sixty years ago when the owner of the adjoining fields sought permission from the Hyderabad Government to bring it under cultivation. It is evident that when this permission was granted it resulted in considerable damage to the mound. There are also slight traces of a depression in the centre and a corresponding banking up around the outer perimeter. It may be fairly confidently stated that an outer bank or ' wall ' was formerly more prominent, for the owner of the land states that each year he removes ash from the edge of the mound and that when cultivation first began the ' walls ' were some three feet higher than at present. Our excavation strikingly supported this suggestion. Heaps of ash, evidently removed from these ' walls ' are to be seen on the higher part of the mound and on the adjoining field boundaries. When I first visited the site in July 1957 ploughing was in progress and from the surface of the field, and particularly of the lower part of the mound, a fair number of sherds of B3 red, B2 painted and B4 ware sherds were to be obtained. These suggested that at least in its final stages, it should belong to the early centuries of the Christian era. No Neolithic pottery was discovered on that occasion, and the only find which could be ascribed to such a date was a small much worn, ground stone axe which I picked up by the side of the track about a mile east of the site. This stray find could be regarded as a favourable omen, for no remains of Neolithic age had hitherto been reported in this part of the Raichur Doab.

4. THE EXCAVATIONS

There were several reasons for selecting the Utnur mound for excavation. The chief was that although lower than those at Kudatini, Gaudur, etc., and of comparatively small dimensions, it was outwardly better protected from the depradations of village diggers, and it was largely covered by a mantle of soil. Furthermore, if the Neolithic hypothesis was to be tested, this mound which had upon its surface only later pottery was of obvious interest. In planning the work therefore the following aims were foremost : to investigate the age of the ash accumulation ; to investigate Foote's hypothesis as modified by our excavation at Piklihal ; to discover if possible the nature of the accumulations ; to study the duration and frequency of repetition of cycles of accumulation and burning ; and lastly to search for the *raison d'etre* of the ash accumulations.

The following cuttings were made :—

Site I. (*UTN I*). A grid of 9 ft. squares was laid down in the north-east corner of the mound (Fig. 2) and ultimately extended by three smaller trenches (UTN I L, N and P). The main digging was in all 45 ft. square, and the three extensions were 9 ft. square, 32 ft. by 5 ft. and 12 ft. by 5 ft., respectively. UTN I L was located near the slight depression in the centre of the mound.

Site 2. (*UTN* II). A trench 70 ft. by 9 ft. was cut in the south side of the mound. Its chief purpose was to demonstrate the relationship of the higher part of the mound to the main body, and to show whether the sequence obtained in Site I was also in evidence in this side.

Site 3. (*UTN* III). A small trench 12 ft. in length was excavated on the north side of the higher part of the mound, when it was discovered that it did not contain a normal ash accumulation, to examine the nature of the surface of the ash mound under the later deposit.

Site I (UTN I).

The 9 ft. squares were each given a letter (see Fig. 3) and excavated separately. It soon became apparent that the layers could be traced over the whole extent of the site and therefore in presenting the final account they have been systematised. A chart showing the original and final layer numbers is given later. The layer numbers mentioned hereafter in this report are in all cases the final ones. (Pl. 3a and Fig. 4).

Layer 1, humus, extended over the whole of site I. It was mixed with a small quantity of powdered ash, and produced a characteristic scatter of B1, 2 and 3

ware sherds, particularly in the neighbourhood of the pit in squares B and C. There was an almost complete absence of Neolithic sherds, except for odd rolled and weathered specimens. Surprisingly there were also very few medieval or modern sherds. Under the humus certain pits and trenches appeared which represented the latest occupational activities in this area. They did not however represent the latest activities on the site as a whole for, as will be seen below, there were continuous robber activities down to the time when it was finally taken over for cultivation within the last century. All this means that *layer* 2 was subjected to repeated disturbance and it is very difficult to sort out the several phases of activity which it contains. First is the pottery pit in squares B and C. This was a shallow pit which produced a large quantity of pottery (in fact nearly all the examples of B were illustrated in Figs. 9 and 10). The ware included B1, B2 painted, B3 together with a B3 imitation of rouletted ware (Pl. 10b) and plain B4 ware. The assemblage leaves no doubt that it is to be dated to the early historic period, corresponding to the 'Andhra' of Chandravalli and Brahmagiri. Comparable pottery was found in the small Trench I which ran through squares H and G and disappeared with the fall in the surface level. Slightly harder to date, but probably considerably earlier is Trench 2 which runs through squares J, K and M following roughly the contour of the mound. This apparently contained only Neolithic pottery, but in its sealing there was also B 3 ware, suggesting that while its excavation must have been earlier than that of Trench 1, its final filling and sealing dates from the early historic period. Both these trenches and the pottery pit cut through *layer* 2 and thus must be later than its accumulation. A deep post-hole (2) was cut in the northeast face of square B. This post-hole also contained B3 ware fragments.

Layer 2, is a mixed layer of ash and soil. Basically it contains two separate constituents, the ash which when *in situ* represents the remains of the last burning on the site and a loose loamy soil which must have accumulated after that time, but before the period of the pottery pit, etc. It is in this layer, also, that the differentiation begins, which will be traced in most subsequent layers, between the strata *outside* the mound (particularly in squares A, J, K and M), and those *inside* (particularly squares D, F and H). The ash is present both *in situ* and in derived form. The derived ash may be inferred to have become mixed with the soil either during the periodical robber activities or during more recent attempts to improve the mound for cultivation. It occurs in varying sizes from small particles to large sums and almost disappears in the north-eastern end of squares A and J ; in squares B it thickens up towards the south-eastern end, and the size of the lumps becomes larger; finally in square C it grades into *in situ* ash. In Squares D, F and H the ash appears both *in situ* and in derived form, and can fairly be inferred to have been removed, in large quantities and probably in recent times, from a deposit which for various reasons to be discussed below we shall call the 'ash wall.' The thickest deposits of ash, often in near vitrified condition, are to be found in squares F and H. The ash itself produced no other finds, but the loamy soil contained a small number of sherds.

In some squares, these included medieval D and early historic B wares, but in nearly all there was a mixture of Neolithic A wares. *Layer* 2 thus contains three separate elements :—(*a*) the *in situ* ' ash wall ' representing the final burning at the site ; (*b*) thereafter a period of soil accumulation and abandonment when the mound was probably covered with vegetation, with this phase Trench 2 is associated ; and (*c*) the period of early historic occupation when trench 1 and the pottery pit were cut. A final phase is represented by the continued robber activity, culminating in the whole destruction of the ash wall in recent years.

Layer 3, (clay bank) is a compact brown clayey soil. It is least clearly differentiated from layer 2 in the strata outside the mound (in squares A, J, K andM) where it was also less compact than inside. As the edge of the mound is approached it gradually becomes consolidated, the surface being particularly hard and pitted with many shallow depressions which were recognised as the impressions of cattle hoofs ; it also shows manifest evidence of burning, and has turned to a deep black alternating with a brown colour. On the surface of the layer there are still *in situ* pockets of residual ash. In squares C, D and F the layer reaches its maximum thickness, raising steeply to form a broad bank. On the outer side of this bank were a number of irregular holes which appeared to be the relics of small sticks, irregularly placed so as to augment a long vanished thorn hedge. The highest parts of the bank were further scarred by the marks of digging, which must have gone on during the clearance of the ash which once crowned it and formed the ' ash wall ' which we shall again encounter in Site III. Inside the bank the layer is thinner, being in places less than 6 in. but it retains its highly puddled compacted nature and its burnt coloration. The layer produced very few finds : from its surface, and thus of later date, came numbers of sherds of B ware, but in the clay itself there were only A ware sherds. In several places small pockets were noticed at the lower junction of the layer. These could be recognised as the long deserted nests or burrows of rodents. In two cases they contained sherds of B 1 or B3 ware. This phenomenon, which was observed all over the site, and which compares with the upheaval of strata caused by human diggers must be taken into account if we are to explain the small number of B ware sherds encountered in this and the subsequent layer. The layer was of uneven thickness and particularly outside the mound the distinctive brown clay became patchy. Under it a new series of trenches and remains were revealed. These however were, sequentially separated from Layer 3 by a residual deposit of ash.

Layer 4 is a thin deposit of ash *in situ*. It occurred only inside the mound in squares F and H, and was not traced outside. However, the surface of the underlying layer 5 was burnt over a far larger area than that in which the ash was found, and it may be inferred that it was originally rather more widespread, and that it was removed at the time when the clay bank (Layer 3) was put down. This layer produced no finds.

Layer 5 (white flecked make-up) has a hard trampled surface, irregularly pitted so as to suggest the hoofs of cattle. The surface showed burning in places but by no means in every part. Under it the layer consisted of a fine, compact, grey-brown soil with a characteristic admixture of small flecks of white, apparently carbonate of lime. The soil was largely sterile, but produced a small number of sherds of A ware, fragments of worked stone, chert and basalt, and other occupation debris. On the surface of the layer, and sealed by the clay (layer 3) which in most places directly overlay it, a number of structural remains were revealed. Roughly following the contour of the mound in squares A, J, K and M was Trench 3. This cut right down into the underlying natural moorum, and patches of moorum, evidently the spoil from the trench, were noticed still lying on the surface of the layer on the south side of the trench. The loose filling of the trench contained quantities of charcoal, cattle bones, A ware sherds, and in the lowest levels numbers of lumps of gnesis which probably represent the packing for upright members of which no trace survived. The trench measured about 18 ins. in width and three feet in depth. About 15 ft. south of Trench 3 and running parallel to it was another trench (4) which followed a generally west-east line through squares H and E, and then turned sharply towards the south (Pl. 3b and Pl. 5a). Trench 4 was in part shallower than trench 3, but it contained a regular series of post-holes. These were spaced at intervals of four feet, but shallower holes sometimes were to be observed between them (Pl. 4a). The surface of the layer between the two trenches produced numbers of potsherds of A ware and other occupation debris including many fragments of cattle bones. The inference is that trench 4 represents a fairly solid stockade. The principal uprights must have been of 9 in. average diameter and were set in the post-holes to a depth of about 2 ft. from the surface of the layer. Inside the stockade the occupation debris is almost entirely absent, while outside it no trace of the ash layer (4) is found. A third structural group associated with the surface of layer 5 was a line of post holes which ran in a southerly direction some 18 ft. west of the line of the outer stockade, across the squares some D and F (post-hole line 5). There was in general an alternation of larger posts of about 9 in. diameter with lighter ones of 3-4 in. The posts were set at intervals of 18 in. or less (Pl. 6a). Two separate post-holes set 5 ft. from the line and some 7 ft. from each other may have served as ties or as some internal sub-divisions of the pen. The post-hole line 5 butted up against the outer stockade (trench 4) and terminated in a great triple post.

It now becomes apparent that layer 5 is a make up or levelling of the site in preparation for the structural activities which we have just described.

Layer 5A. In only one part of two squares (B and C) a small sub-division of the layer was noticed under a burnt surface. The soil was otherwise similar to that of layer 5 and must have been derived from a similar source.

When these layers had been removed a variety of layers were revealed in different parts of the site. Before describing them we must notice a shallow cut,

some 6 ft. in width and one foot in depth which exactly anticipates the line of the post-hole trench 4. The significance of this trench is not immediately apparent, as although it would seem to have been a marking out trench, it must have been subsequently masked by the deposition of layer 5 which certainly preceded the erection of the several structures we have described. A somewhat similar problem will be encountered lower in the mound.

Layer 6 consisted of soft friable white, grey and cream coloured ash which evidently lay *in situ* above a burnt surface. The ash was at its thickest inside the mound in square D, and thickened up again in square B. It did not appear outside the shallow cut referred to above, and it may be inferred that whatever ash was in this area was removed at the time when the cut was made. If this was so then it would follow that originally the ash extended considerably farther to the north and west than now appears, for residual pockets survive in the upper filling of trench 7, even in its northernmost extensions. This would indicate that at the time of making the cut the ash was cleared away revealing the hard burnt and previously trampled floor below, and that originally its extent may have been roughly similar to the area bounded by trench 7. In common with nearly all the unmixed ash layers this one produced no finds of any description.

Layer 7 (speckled make-up) was a thin layer of compact soil with a characteristic yellow speckling. Its surface, lying under the ash layer (6), was deeply burnt to a dark black-brown and was extremely hard. It had every appearance of being a floor which had been continually trampled upon by cattle and its uneven surface offered many indications of hoof impressions. Another curious feature of the surface was the negative impression of a shaft of wood of triangular section and about 4 ft. in length. This shaft had evidently been deeply pressed into the surface of the layer while it was soft, and it had rotted away so that only its imprint remained. A short distance away was another positive impression of a half cylinder, presumably of bamboo, which was also preserved on the surface of the layer. Layer 7 is never more than a few inches in thickness. It contained a number of Neolithic A ware sherds, fragments of charcoal and animal bones. It is evident that this was a levelling as was layer 5 above, and it is therefore necessary to consider what evidence there is for the structures to which it relates. Post-hole line 6 is a line of large, somewhat irregularly placed, post-holes running on a different alignment to those of the previous period and crossing squares D, F and G. A branch line of rather more distantly spaced post-holes runs westwards at right angles across H. Immediately outside this line there is a slight dip in the surface of the layer, and about 15 ft. from it is trench 7, which follows roughly the same line ; but it too lacks the regularity of trench 4. A characteristic feature is that the sealing of the trench takes the form of a marked depression over which rests a quantity of ash. The trench gave no indication of post-holes, but contained a typical debris with sherds, silica flakes and charcoal. These are the only structural features associated with the

surface of layer 7. A study of the distribution of sherds, cattle bones and other occupation debris from this layer again reveals that the maximum deposit is in the vicinity of the outer trench, and between it and the inner post-hole line.

Layer 8. Under the speckled make-up was a deposit of ash of dark grey to brown colour. This ash extended inwards from the line of trench 7 and had a thickness which approached one foot. Beneath the ash was another burnt surface (Layer 9) with which were associated further structural remains.

Layer 8A. Outside the area enclosed by trench 7 there was no ash comparable to layer 8, but its place was taken by a thick, compact layer of light mottled soil. The surface of this later was trampled and burnt, and particularly on the sides of trench 7 it was covered by a thin spread of the speckled make-up which covered also layer 8. The burnt surface had been in part cut away by the work which preceeded the laying down of layer 5. The layer contained considerable quantities of cultural debris, A ware sherds, fragments of worked stone and quantities of bones of cattle, sheep and goat, particularly in squares A, B and J.

Associated with the surface of Layer 9 are two structural features. The first is the perplexing trench 8. This in places appears to cut through layer 8 and is in places sealed by it. The explanation of this confusion, which occurs more than once in the structures we have been considering, appears to be that originally the trench was excavated to receive uprights and that the ash layer above represents a period of accumulation after their erection. Then followed a period of destruction when the uprights were in some cases removed, so that the accumulated dung appeared after burning to seal the trench ; while in other cases they were burnt *in situ*, when after burning their sockets, etc., would appear to pierce the ash. In the present case the traces of post-holes were clear. The holes were of regular sizes, averaging eight inches in diameter. The trench runs through squares B, E, K and M. Following the same line was a double row of post-holes, 9, somewhat larger than those of the trench, those of the outer, more easterly, line being slightly smaller than those of the inner. The average depth was 1 ft. 3 ins. and the diameters were between 9 ins.and one foot. The inner line was not to be found over the whole length of the exposed section, and indeed the incompletely excavated baulk between squares E and F might be taken to indicate an entrance at this point.

Layer 9 was a mainly thin levelling of light brown soil which only occurred within the confines of post-hole line 9. Excavated from the surface of layer 9 or 9A, immediately, outside the post-hole line 9, was a shallow depression, some four to six inches deep, which contained the skeletal remains of an infant (Pl. 5b). Only the ribs and one humerus survived unbroken : the skull was completely crushed. From the absence of teeth it may be inferred that the child was newly born. The probability is that it was placed in the ground upon its side in a foetal position. The

surface of the layer was heavily compressed and trampled and had been burnt. It contained several fragments of pottery. In squares G and H the layer thickened up to form a low bank, but no trace of such a feature survived elsewhere in the site. Outside the post-hole line 9 a somewhat similar layer was observed but without the compression of surface or degree or burning. This was excavated as layer 9A.

Layer 10 was a small pocket of ash noticed only in square D and lying directly beneath layer 9. Although of so limited extent it appears to be the residue of a once larger deposit of ash, for the surface of layer 11 beneath it is extensively burned.

Layer 11 occurs for the most part directly below layer 9 except where the ash layer (10) intervenes. It consists of a light loamy soil with frequently burnt surface and traces of cattle hoof impressions. It contained a small number of pot-sherds of A ware and fragments of bone and charcoal. It extends over the inner part of the mound generally not occurring outside post-hole line 9 but in places spilling over a trench 8.

Layer 11A was the filling of a shallow trench of 8-9 ft. in width cut in the natural soil on much the same line as the later trench 8. It consisted of a red sticky soil, replete with sherds, bone and charcoal fragments and small selected stones. This layer produced a greater number of sherds than any other in the site, and appeared to be consistent with continued occupation.

Layer 12. This layer was only found in those squares which were inside the shallow cut referred to above. It evidently represented an accumulation before the cut was made and was itself cut away by it. The surface of the layer was very highly compacted, almost vitreous in character, and pitted all over with hoof prints. The colour of the surface was a deep greenish grey, beneath the layer was of dark greenish sticky soil and yielded few sherds or other remains. Under this layer, and the other overlying layers where it was absent, was the hard orange moorum which marked the natural soil. This had been cut into by the shallow cut, and also by various of the deeper trenches and post-holes from earlier layers.

Extensions to Site I.

We have now to consider the three extensions to Site I. This we shall do in the main rather in terms of their variation from the form already described. It was possible in these pits to identify exactly the layers as they recurred in these extensions and so the layer numbers given correspond with the final layer numbers of Site I.

UTN IP.

This small trench of 4 ft. 6 in. by 12 ft. was excavated at the northernmost corner of the mound, 10 ft. beyond square M. The sequence of strata here is

much curtailed, on account of the southerly shifting of the mound in later periods. Thus layers 1 and 2 are present and under them layer 5 occurs directly with its characteristic white flecked soil and its hard trampled surface. Here its surface was particularly hard and had been burnt to a greenish, almost vitreous quality. Immediately under layer 5 occurred layer 11 with its characteristically hard brown and red mottled surface, well burnt, and covered with a scatter of ash. The pitting of the surface here too contained cattle hoof impressions. The ash scatter is probably all that remains here of layer 8, for elsewhere it is found closely associated with trench 8, which appears in attenuated form, cutting through layer 11 and sealed by 5. In its centre were two post-holes cutting down into the natural.

UTN IN.

This was a section across the side of the mound about 40 ft. west of the main digging of Site I. The trench was 30 ft. by 4 ft. 6 in. The sequence of layers, while related to that of Site I differed in that many of the layers were present in much attenuated form, particularly at the outer, northern end. (Fig. 6).

Layer 1. Humus.

Layer 2. A typical ash and soil mixed layer.

Layer 3. A typical brown clay layer was present in the inner, southern end of the trench : never more than a few inches in depth, it tailed away before the centre was reached. Trench 3 thus appeared on the surface of the next layer (5) and was sealed by layer 2.

Layer 5. A white flecked layer, having a burnt surface where it was covered by the clay layer, appeared in the north of the trench with a depth of about one foot and tailed away about 5 ft. from the northern end. Trench 3 was thus cut from its surface and appeared to run in an east-west direction across the layer.

Layer 6. Under layer 5 and resting upon the surface of the subsequent layer were deposits of ash *in situ*. These were also most plentiful in the inner end of the trench and tailed off before the middle was reached.

Layer 8. The thin speckled layer noticed in other parts of the site at this juncture was absent, but its place was taken by a hard, compressed ash surface which had evidently been exposed for some time. In the surface of this layer a post-hole was found in the southern sector apparently corresponding with the building activity of post-hole line 6. The ash was at its deepest in the inner part of the trench, but it continued even beyond the northernmost limits. Close to this face two overlapping trenches were exposed in the surface of the layer ; although here again they were only sealed by layer 2. These may be confidently identified with trenches 7 and 8.

Layer 9. Beneath the ash layer was a very hard, burnt, surface of greenish hue, which covered a heavy, sticky, brown soil. This layer, by contrast to the earlier one of the sequence, rose gently from the south. It too continued beyond the northern extremity of the pit.

Layer 11 was a typical light loamy soil here without any clear traces of burning.

Layer 12 was a typical dark sticky soil lying directly above the natural and extending over the entire area of the pit.

UTN IL.

The third extension of Site I was a 9 ft. square excavated midway between Sites I and II on the edge of the slight depression near the centre of the mound. Once again it was possible to relate the layers found to those of Site I, particularly of square D where the inner sequence is most characteristic. In this pit however a new factor becomes evident which will be repeatedly found in Sites II and III. It is that human robbing activities have contributed largely to the destruction of the original strata, and that these have often been augmented by the activities of burrowing animals. Pl. 7b shows the extent to which this square had been disturbed by such activities, at least in its upper and middle layers.

Layer 1. Humus.

Layer 2. A typical ash and soil mixed layer from which a broad shallow pit led down to a series of connecting tunnels or burrows cut primarily into the thick ash beneath. Both the layer and the pit contained sherds of B1 and B3 ware, and even the filling of the burrows contained occasional sherds of B ware. From the surface of layer 2 came a fragment of the shoulder of a red polished ware sprinkler. Also from the pit came several fragments of bone and one of deer horn (of an unidentified species). The evaluation of this evidence is not easy, and for the moment we shall postpone it noticing that the pitting dates from the end of the period of soil formation represented by layer 2, and that it may here belong to the early historic period or even later. Lateness is suggested by the presence of one or two sherds of brown D ware which cannot well be earlier than the end of the first millennium A.D. in the contents of the pit (one coming from a very considerable depth in the tunnel).

Layer 6. Happily for the stratification of the site the northwest quarter is preserved with very little interruption Here immediately below layer 2 is a thick deposit of ash which can be equated on sequential grounds and in terms of level with layer 6. The ash was of an averagedepth of 15 in and was typically differentiated into upper, middle and lower bands by coloration. There can be no doubt that

this coloration related to the atmospheric conditions during firing, and that this took place *in situ* while the ash was as yet not sealed by overlying deposits. The upper part of the layer was a light greyish-purple, the centre has patches of yellow and darker grey, the lower part was of a lighter grey to yellow colour. Finally along the junction with the next layer (which was also of ash) there was a dark black to brown carbonization which represented all that have occurred of the hard compressed surface for the next layer. There is here no trace of the levelling layer 7, which as we have already noticed throughout the site was rarely of more than 2 in.-3 in. in thickness. The ash was quite sterile.

Layer 8 is again ash, and it can confidently be related to the corresponding layer of Site 1 by general sequence and level. The ash had an average depth of 15 in. and by comparison with the previous layer was of brighter colour. The main body of the upper and middle parts were light grey merging into brilliant white. In the lower part the colour became darker grey or yellowish grey and finally at the base there was another dark carbonacious line. This layer was deeply cut into by burrows and parts of the pit, we have described above.

Layer 11 had an irregular burnt surface, much puddled by the hoofs of cattle. Under it was a reddish-brown fine sticky soil which equates with the corresponding layer throughout Site I but which produced, in this square, no finds.

Layer 12 beneath was another very hard surface, not markedly burnt but much compressed, which also bore the very clear impressions of cattle hoofs. These were carefully cleaned and photographed (Pl. 8b). and finally six were cut around, impregnated with polyvynol, and lifted. Pl. 9 shows a photograph of four of these impressions taken after their removal to Hyderabad. Under this surface the layer had its typical dark brown-green coloration and sticky texture, and corresponded exactly to the layer in other parts of Site I. Under it was the dark orange moorum which here forms the natural soil.

Site II (UTN II)...

The position of the second main trench was selected on the south side of the mound. The excavation was begun at the foot of the higher part of the mound and the expectation was that it would be necessary to continue it into the highest point. However, it was soon discovered that all of this part of the mound was quite separate and altogether later than the ash accumulations beneath, and its excavation was not continued. Instead the trench was extended obliquely across the ash mound proper for 70 ft. (Pl. 7a). The layer numbers in this site have not been made to correspond exactly with those of Site I, even when their equation is possible (Fig. 5).

Layer 1. This quickly proved to be a loose filling consisting of fragments of stone, from 1 ft. to less than an inch in length, mixed with fine gravel, soil, etc

The stone was throughout the local horneblende schist. The modern surface has some slight vegetable growth, but it has not developed a humus of any depth. Some feet away from the excavation a small scacia tree is growing from the heap. Whether this tree was already growing before the deposit was made, and survived it or whether it has grown since was not established, but obviously in the latter case it would indicate some years of growth since the deposit was made. No finds of any sort were made in the layer. It was established that the whole mound on and above the 9 ft. contour line (Fig. 5) is a recent accumulation of loose spoil and the question of its origin must be seen in this light. Our reading is that some of the spoil came from a now abandoned well immediately south of the heap. This was certainly the opinion, even recollection, voiced by the villagers when we questioned them. But it may be objected that the volume of spoil indicates a larger excavation than this single well. If so then it may be noted that there is another well of considerable size a short distance to the northwest, which is still in use. It may be suggested that spoil from its excavation, possibly at the same time as from the abandoned well, was carried and dumped here, while the mound still lay waste. But it must be recalled that a part of the heap actually constitutes ash, as will be seen in Site III below.

Layer 2. This was the former humus layer. It passed without any recordable change, except the absence of fresh vegetable roots, underneath the spoil heap, layer 1. It produced a fair sample of red, black and black-and-red B3 ware sherds. When this layer was removed a number of burrows and robber pits were revealed. At the western end of the trench appeared the upper part of a burrow, probably of the porcupine. This was connected with other burrows at lower levels, and in its filling were further sherds of B ware. Almost the whole of the south eastern end of the cutting was taken up by a great robber pit, which must undoubtedly have been of human origin. A number of larger tunnels, found at different levels of the cutting appear to have been dug from this pit. Whether these too are of human origin, or whether they are the burrows of animals who took advantage of the open pit cannot be determined, but in almost every part of the burrows, the filling was found to contain B ware sherds, and sometimes small animal bones.

Layer 3 was a typical mixed ash and soil layer. In places the ash had been disturbed, while in others it was *in situ*. Over large parts of the layer it was from top to bottom of buff-grey to light grey ash. Such sherds as were found seem to have been derived from the disturbed soil and were almost all of B ware.

Layer 3A. This corresponds to layer 3 of Site I. It occurred only in residual form at the south eastern extremity of the trench, and was only found in one small patch thereafter. Much of the layer had been cut away by the great robber pit. It was a brown clay with a burnt surface and reached its maximum

thickness of 15 in. within three feet of the face of the trench. It produced two sherds of A ware.

Layer 4 (white flecked make-up). Under both layers 3 and 3A is the hard burnt surface of layer 4. This is a fine light brown loamy soil flecked throughout with white in exactly the same way as its counterpart in Site I, layer 5. Throughout the trench the layer has an average thickness of 8 in. Under the carbonised surface, which indicates the *in situ* burning of the ash above it, there is no other trace of firing discoloration of the sort that must have resulted had it been already in position when the ash beneath it was fired. In the S. E. extremity of the trench occurred a post-hole, probably on the same perimeter line as those found in this layer in Site I.

Layer 5 was a thick ash averaging 18 in. throughout the whole length of the trench. As usual the ash was quite sterile, its colour at various levels revealed the firing condition, and again presents evidence of a period of accumulation followed by a single burning. Along the surface the ash is white grey and of fine powdery texture. Under about three inches it steadily darkens to an alternating brown and grey band of some two inches in depth, and below this it changes into a yellowish-buff, still of powdery texture. About 9 in. below the surface it again changes becoming coarser in texture and variegated in colour : there are areas of pale grey-white and of blue-grey, and finally in the lower levels it once again turns to yellow buff. Along the junction with the next layer there is a characteristic darkening to deep brown and black, presumably the carbonization which results from incomplete firing. Numerous burrows were encountered, ranging from small rodents' nests of a few inches in diameter, to burrows of considerable size, assignable to porcupines.

Layer 6 (speckled make-up) was an orange brown, fine soil levelling containing a characteristic yellow speckling. Its surface was not only burnt hard but also had carbonised to a dark black-brown colour. The layer was rarely more than three inches in thickness and ran with remarkable regularity over the whole length of the trench. It thus exactly equates with the speckled make-up (layer 7) of Site I. A small number of sherds of Neolithic A ware were found. Evidently the hardness of this make-up was such that neither human nor animal diggers had cared to penetrate it. At least the great complex of pits and tunnels almost all finished upon its surface.

Layer 7. Below the speckled make-up lay another ash layer, less thick than the two preceeding ones. The ash was of fairly regular grey-yellow tinge and of an average depth of 15 in. It was quite sterile.

Layer 8 was marked by another dark carbonised surface which was both hard and burnt. The layer itself was of compact sticky brown soil, closely akin to layer 9 of Site I. It produced a considerable number of fragments of Neolithic

pottery, together with stone and bone remains. These were particularly in evidence in the south eastern end of the trench, near the outer edge of the mound.

Layer 9 lay directly on the natural moorum. It was a darker green brown sticky soil and may be equated with layer 12 of Site I. It too produced a number of sherds in its south eastern end.

Site III (UTN III).

Site III was a small pit excavated at the close of the excavations on the northern face of the spoil heap. Its main purpose was to discover the sequence beneath the spoil in this part of the mound. The pit was 12 ft. in length and 4 ft. 6 in. in width. The sequence revealed was basically similar to that of Site I, but it produced a number of curious features which demand description. As in Site II. a large part of the ash mound layers had been cut into by robber tunnels. The sequence of layers was as follows :—

Layer 1A, loose spoil, exactly corresponded to layer I of Site II. That id to say it was a recent loose deposit of fragments of rock and earth derives rom some local source by deep excavation, presumably well digging.

Layer 2A. This was a unique deposit of ash in a highly vitrified conditionf The total depth of ash was about 2 ft. 6 in. and its flat regular surface was at a height above datum of 9 ft. 6 in., that is to say fully two feet higher than any other ash deposit of corresponding sequence position. The ash was of typical pale greenish grey colour and closely resembled vitrified samples from other sites. It was extremely hard, more vitreous than any other deposit at Utnur, and quite sterile. Excavated in the ash and the layers below it was a remarkable robber tunnel, more than four feet in height and three in width. This tunnel produced, as did comparable pits and tunnels throughout the site, odd sherds of B3 red or black ware. The meaning of this ash deposit seems quite clear. It is stratigraphically identical with the ash component of layer 2 of Site I, and particularly with the traces which lead us to postulate an ' ash wall.' Here it seems that this feature, which ran according to our reconstruction around the perimeter of the mound on the crest of the bank, has been protected and thus preserved, while elsewhere in Site I it has been all but destroyed by the recent clearing of the area for ploughing by farmers. In the present instance the wall was protected by the loose stony spoil from the well digging operations, which thus are dated sequentially to a period before the clearing of the field for cultivation.

Layer 3 was a typical clay layer of about 8 in. thickness. The surface was burnt in characteristic manner.

Layer 4 was a thin ash layer, of the powdery variety so common on the site.

Layer 5. A light brown make up layer with white flecks. This layer was about 8 in. deep.

Layer 6. Another thin layer of ash, at the bottom of which was another burnt surface.

Layer 7. This was a composite layer. The surface was dark brown and burnt and immediately gave way to a thin film of speckled make-up, of one and a half or two inches in thickness. Beneath it was another deposit of ash of about 9 in.

Layer 8. This final layer was a brown sticky soil which rested upon the natural moorum.

Correlation of the layers in various parts of the site.

It will be seen that there is throughout the site a close sequence correspondence of layers. What this means in terms of the interpretation and the reconstruction of the various phases of human activity which they represent we shall consider later. Here, however, we wish to record the correlation established for the layers of sites I, II and III.

Period	Layer	Site I	Site II	Site III
	Loose spoil ..	.. ..	1	1A
	Humus	.. 1	2	..
V	Ash and soil ..	.. 2	3	(Vitrified ash 2A)
IV	Clay bank ..	.. 3	3A	3
	Ash	.. 4	..	4
III A & B	White flecked make-up	.. 5, 5A	4	5
	Ash	.. 6	5	6
II A & B	Speckled make-up	.. 7	6	7
	Ash	.. 8, 8A	7	
I C	Light brown soil	.. 9, 9A	8	..
	Ash	.. 10	..	..
I B	Light loamy soil	.. 11	9	8
	Red sticky soil ..	.. 11A	..	..
I A	Dark sticky soil	.. 12	10	8

TABLE SHOWING THE CORRELATION OF SITE I LAYERS AS EXCAVATED AND IN FINAL REPORT.

Final Number	Period	Square															Final Number
		A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	
1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	V	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3, 3A	IV	3	3	3	3	3	3	3	3,4	3, 5	3	..	3	..	3	..	3
4	..	..	..	..	..	..	..	..	5	..	..	..	..	..	..	..	4
5, 5A	IIIA, B	5, 4	4,3b	3b	4	4	4, 5	4	6	6	5	..	4	..	4	4	5
6	..	..	5	4	5	9	..	..	..	..	..	3	..	..	5	..	6
7	IIA, B	..	6	5	6	10	7	..	7	7	6	..	..	..	..	..	7
8, 8A	..	6	6c	5	7	..	..	..	..	..	..	4	..	3	6	..	8
9, 9A	I C	..	7	6	8	11	6	5	8	..	..	..	..	4	7	..	9
10	..	..	..	..	..	9A	..	..	..	..	..	..	..	..	..	..	..	10
11	I B	..	..	7	9	..	6A	7	9	..	..	5	5	5	8	5	11
11A	1 A	8	9	..	..	6	..	..	..	9	7	..	..	..	..	..	11A
12	..	7	8	8	10	8	8	8	10	..	..	6	..	6	9	..	12

5. STUDY OF OBJECTS

The objects recovered from the excavations showed cultural assemblages of two separate periods, Neolithic and early historic. However, when these assemblages are compared with those from settlement sites such as Brahmagiri, Piklihal or Maski, their relative paucity becomes immediately apparent. As far as the Neolithic assemblages are concerned this undoubtedly reflects the nature of the site, an ash mound ; while the early historic, it will be recalled, belonged to little more than a few superficial trenches and pits upon the surface of the mound. In either case comparison with fuller assemblages is needed, to bring out the relationships, but particularly is this so for the Neolithic as the comparison may throw interesting cultural light upon the types of activity which went on at the ash mound. In view of the incomplete nature of the Neolithic assemblages we shall make comparison with Piklihal, following as far as possible a similar system of study, but omitting mere repetition of inferences which derive from that site. Thus, in treating the Neolithic pottery we shall notice the absence of Neolithic A4 and A5 wares, but shall make no further mention of them. Again, the technological studies made at Piklihal are much fuller than anything possible upon the present assemblages, and thus we shall only comment upon any novel features found at Utnur, or upon any features noticeable by their absence.

A. THE NEOLITHIC A WARE COMPLEX

Body Clay.—The majority of the sherds were of a fairly coarse clay with some admixture of particles of grit. It may well be that this clay was locally derived from deposits in the vicinity of the nearby nulla. On the other hand a small number of sherds were of a much finer clay with no larger particles, and these appear to have been imported from elsewhere. As a general rule the sherds of A1 and A2 wares are in the coarser clay (with notable exceptions), while the clay of the A3 wares is much finer and often highly micaceous—a feature reminiscent of the A3 wares at Piklihal and other sites.

Forming.—The forming techniques exactly conform with those exhibited by other Deccan Neolithic assemblages. That is to say, that in no case is there evidence of wheel-throwing, but throughout only of hand-making. The hypothesis advanced in the Piklihal report that the forming was carried on with the aid of a turn-table is supported by the curiously heavy bases so much is evidence at Utnur. Not only do these suggest a general amateurishness of potting, but they vividly indicate the concave form into which the green clay was pressed during forming. In comparison with the range of forms at Pilkihal those of Utnur are much restricted, and also rather heavier. It is not at present clear whether this may be ascribed to local variations in the Neolithic potters' craft rather than to other causes, but as this coarseness of body is present in the majority of the A1 and 2 wares, but is notably

absent from the A3 one is inclined to see in it evidence of amateurism in the manufacture of the former group. Such A3 ware pieces as Nos. 25, 37, 45 and 49 (Figs. 7 and 8) are examples of more skilled forming technique. Another characteristic feature of the A3 wares is the careful paring or scraping of their inner surface. I have already commented upon this at Piklihal, and it is relatively more frequent at Utnur Handles, lips, lugs, spouts and channel-spouts are absent from the Utnur assemblage, so are legged stands or terracotta horns. The little hollow foot of A3 ware (Fig. 8, No. 45) deserves comment. The vessel must have been turned upside down and the foot separately formed after the main body had been made.

Surface treatment.—About 90% of the sherds belonged to the A1 and A2 wares. Of these rather more than half had a burnished surface and were classified as A2, while the remainder were of unburnished A1 ware. There was a noticeable tendency for the A1 wares to include fragments of larger, heavier vessels, although few recognizable forms have survived. Among the A2 wares the outer surfaces are always burnished and the inner in a fair percentage of cases (probably reflecting the degree of openness of the mouth of the vessel). In some examples the burnish was applied with more than usual care, and instances of both horizontal and vertical burnish are recorded. Rarely there is evidence of regular vertical burnish on the outer surface and horizontal upon the inner (c.f. Fig. 8, No. 60), a decorative form noticed also on vessels of similar type at Piklihal. Throughout the A2 and A3 wares the burnish was often carefully applied, and the final effect was pleasing.

Slip or dressing is found only on about 9% of the total number of fragments, and these are classed as A3. As observed at Piklihal the dressing appears to have been too thin for a slip in the technical sense of the word, but was rather a thin ferruginous dressing, probably an earthy haematite ground in water.

Incised Decoration is found on less than 1% of sherds, all of A1 ware (Pl. 10, a).

Surface roughening or *rustication*, a form of surface treatment found at Piklihal mainly in the Upper Neolithic is absent from the Utnur assemblage.

Painted decoration.—Two distinct types of painted decoration are observed. Upon the A2 wares about 4% of the total show a *post-firing* ochre painted decoration, comparable to that observed at Piklihal ; while about 1% of the total sherds are of A3 ware with a *pre-firing* purple to black manganese paint decoration. The proportion of painted sherds of this type also is higher than at Piklihal, where they occurred only in the Lower Neolithic.

Perforation of the kind reported at Piklihal and elsewhere is absent, so also were *finger-tip* and *applique* decorations. These latter were both features of the Piklihal Upper Neolithic.

Firing.—No direct evidence of the kind of kiln was found, but our observation of the firing of the specimens studied reveals that it was not much different from that of Piklihal, and evidence of ' flash ' firing probably indicates here too the use of a

of a simple bonfire type of kiln. The colour range of the A1-2 wares was grey to black for the body, with a characteristically grey or buff surface. Sometimes this assumed a soft silvery grey colour. More rarely, probably in ill-fired specimens, the surface had remained a dirty brown or black colour, and very rarely it had fired to a deep chocolate brown. The A3 ware revealed all the varieties of colour found at Piklihal and some new variants. The most common colour for the fired dressing was vermillion to red, and the next most common was black. More rarely sherds of chocolate and burnt sienna surface were found. A very small number of sherds (propbably imported to this site) had a grey-and-black or even brown-and-black or red-and-black surface. These latter were neither large enough nor numerous enough to permit any inferences of their resulting from a purposeful firing technique such as that which lies behind the black-and-red B1 ware. However, comparison with the Piklihal colour range reveals the absence not only of the frequent grey-and-black combinations of the A5 ware but also of the mottled effects of the A4.

Functional.—At Piklihal we recorded the forms of over 360 vessels of the A ware complex. These we divided into some 70 different types and further divided them into 23 functional groups. At Utnur we were only able to record some 70 vessels which were further divided into 13 types (of which one occurred no less than 15 times, two more 10 times each and a fourth 9 times). These types were confined to only 5 of the Piklihal functional groups. Those assigned to the Utnur A wares are as follows :—

Functional group.	*Piklihal form No.*	*Utnur Nos.*
A	1	13, 27, 29, 30, 42, 52, 61
B	2	1, 2, 5, 6, 8, 12, 15, 19, 20, 24, 31, 56, 63, 66, 68
..	3	47, 54
..	4	64
..	10	9, 10, 22, 23, 26, 32, 33, 34, 46, 69
J	42	45
L	19	21, 25, 35, 49, 50
..	20	36, 40 53
..	21	44
O	28	28, 38, 39, 41, 43, 48, 57, 58, 62
Q	38	60
Other forms.		
	22	3, 7, 11, 14, 16, 17, 18, 55, 65, 67
	32	43
	70	37

The functional range displayed by the Utnur A ware is thus much more limited than that of Piklihal. This probably indicates two things : that certain forms which at Piklihal are mainly or solely present in the Upper Neolithic (such as the spouted pots of group H, etc.) are absent ; and that certain peculiar and rather special forms which were present throughout the Neolithic in the larger and more permanent settlement are not represented at the ash mound. These include various objects to which we assigned ritual functions ; the larger storage jars ; and other jars of special form. If we exclude the unique examples of a hollow-footed cup (Utnur No. 45) and of a bell-shaped storage jar (Utnur No. 60), the following are the main groups represented at Utnur :—

A	7	examples	Shallow platters for the service of food.
B	26	..	Open bowls of various shapes and sizes, for the taking and service of food, boiling of milk, etc.
L	9	..	Open mouthed jars, milking, holding liquids, cooking.
O	9	..	Narrow necked jars, carrying and storage of water.

Comparative and Morphological : A1 and A2 ware :

The A1 and A2 wares occur without apparent change throughout the whole of the ash accumulation period. We have already noticed that a majority of the sherds bear traces of burnish (A2) and it is highly probable that some of the unburnished (A1) sherds, being frequently bases and of generally large vessels, *may* have originally belonged to only partly burnished vessels, and thus that the distinction between the two wares breaks down. The colour of the surfaces of the sherds is predominantly grey, with buff, brown and black occurring in diminishing proportions. A very few sherds are varied from grey or brown to black, but these are too rare to form a group. About 40% of the rims bear a pre-firing red ochre paint. This usually occurs in the form of plain bands of colour. In some cases it was a thin translucent wash, while in others it formed a thick deposit, like that of an unfired slip. The relatively far higher frequency of occurrence at Utnur may indicate no more than that at previously excavated Neolithic sites in the area numbers of painted sherds were destroyed by over enthusiastic washing. This was admittedly the case at Piklihal. In a unique instance the ochre wash had been applied to a rim of unburnished A1 ware (Fig. 7, No. 30). Incised sherds were rare but recurrent finds, and occurred throughout the ash accumulation period. They introduce certain features not previously noted in the North Karnataka, notably the use of short incised strokes in varying directions (Fig. 10, No. 9). This sort of incision has recently been reported however at a number of sites in Maharashtra,[1] perhaps at a somewhat later date.

1. For instance see Maheshwar, figs. 54—6 (*Excavations at Maheshwar and Navda Toli*, (*Poona*, 1958).

To sum up the A1 and A2 wares, along with their painted and incised variants, show clear affinites with the pottery of the Lower Neolithic at Piklihal and elsewhere. This fact is emphasised by the absence of the A4 and A5 ware, spouted vessels, channel-spouts, A1 rusticated and perforated sherds etc. all of which are characteristic of the Upper Neolithic of Pikilhal and of the 1B phase at Brahmagiri.

A3 ware.—The fine A3 ware, with its micaceous body clay and burnished dressing of red, burnt sienna or black colour, is also found in most levels of ash accumulation, although it became rare in period III and does not occur in period IV. It is quantitively more prominent at Utnur than it was at Piklihal, where it occurred only in the Lower Neolithic. There is a general tendency for the vessels of this ware at Utnur to have a thinner body section than those of A1 and A2 ware. This may in part result from the scraping which is evidenced upon the inner surfaces of many of the vessels, but it is also perhaps connected with the craftsmen who produced them. Nearly all the finer, more refined forms found at Utnur are in this ware, and it seems probable that they were imported to the site from an associated settlement, while much of the other pottery was made locally. However, it would seem that the peculiar legged stands, lugged vessels, etc., which formed a prominent feature of the A3 ware at Piklihal were not imported to Utnur, and the suggestion is that only pots of utilitarian value found their way to the ash mound. The fragments of this ware with purple or blackish manganese paint applied before firing, although also more numerous than those discovered at Piklihal were for the most part so small and weather-worn that nothing could be said of their original forms or the patterns of their painted decoration. An exception was the rim of an open-mouthed vessel decorated with a series of strokes and a single outer band (Fig. 7, No. 25), while No. 37 of the same plate recalls the shoulders of A3 painted vessels from Piklihal. To sum up, the A3 ware also recalls the Lower Neolithic of Piklihal and sites of comparable age.

A careful perusal of the pottery from Utnur then puts it into fairly clear apposition to that of Piklihal. Setting out the results in tabular form we obtain the following picture :—

Period	*A*1	*A*1 *incised*	*A*2	*A*2 *ptd.*	*A*3	*A*3 *ptd*
V						
IV	X	X	X	X		
III	X	X	X		X	X
II	X	X	X	X	X	X
IC	X		X	X	X	
IB	X	X	X	X	X	X
IA	X	X	X	X	X	X

It appears that the A3 ware and A3 painted variety do not continue into period IV, and are already rare in period III. We have already noticed the change in structural design introduced in these two periods. There may be here some indication of a change in the cultural equipment of the population also for at Piklihal (Site VII) these two varieties were only found in the Lower Neolithic and disappeared there in the same layer that produced the first evidence of the A4 and A5 wares. The absence of these wares at Utnur suggests that period IV falls as it were between the Lower and Upper Neolithic of Piklihal, or perhaps it might rather be expressed that it dates from the end of the Lower and opening of the Upper Neolithic of Piklihal. That the full Upper Neolithic of Piklihal is not represented at Utnur is further shown by the absence of any of the intrusive AB wares, which seem to have a clear affinity to the Jorwe ware of Maharashtra. Another possible suggestion of chronological contact with the north is contained in the cream slipped grey sherds from Utnur, Site I. These, if they may be compared with anything, bear comparison with the Malwa wares of Navda Toli, etc. At Utnur they are confined to Period I. Thus the pottery of Utnur seems to indicate its relative position in the Neolithic-Chalcolithic sequence of Pensinsular India quite definitely.

In the following catalogue reference is made wherever possible to the Piklihal form numbers. As that report also contained a detailed comparison with the pottery from other Neolithic and Chalcolithic sites (as far as then published) we shall not in general repeat the comparisons here unless they are of some particular interest.

Fig. 7.

1. Rim of A2 blackish-grey ware, burnished inside and out. Too small to determine size and exact angle. (c.f., Piklihal type 2) IB (11a).

2. Rim of A2 buff and black ware, burnished inside and out. Too small to determine size and exact angle. Traces of an unburnt ochre band on rim. (c.f. Piklihal type 2). IB (11a).

3. Base of A2 blackish-grey ware closely resembling 1 above, perhaps from the same vessel. IB (11a).

4. Sherd of A2 grey ware with burnish on outer surface and regular incised lines in the upper part. Unique. IB (11a).

5. Rim of grey-buff A2 burnished bowl with red unburnt ochre band on rim. (c.f. Piklihal type 2). IJ (11a).

6. Rim of thick bodied bowl of A2 painted ware (Piklihal type 2) IJ (11a).

7. Base of grey-black ware with partly burnished red and black mottled interior, and black outer surface, Very coarse clay and crude moulding technique. A1-A2. (c.f. Piklihal types 22 a, etc are comparable but less crude).IJ (11a)

8. Rim of A2 grey ware with ochre painted band. Too small to determine accurately size. (Piklihal type 2) I C (11).

9. Rim of bowl of A2 grey ware, heavily worn surface. The body clay of unusually gritty texture. (c.f. Piklihal type 10e). I F (7).

10. Rim of slightly outcurved bowl of A2 grey-black ware. Too small to determine size accurately. (c.f. Piklihal 10d). I F (7).

11. Characteristic base of very coarse black A1 ware with buff surface. (Compare types 38d 38f and 22 at Piklihal, but the bases there are less crudely made). I G (11).

12. Thick, coarse rim of A1 grey ware. Too small to determine size and form. I C (11).

13. Rim of A2 grey ware with traces of ochre wash band. I G (9).

14. Typical base of A2 grey-black ware I G (9).

15. Rim of A2 grey ware with ochre painted band. I B (11a).

16. Basal haunch of burnished A2 red ware. The occurrence of A2 ware of this oxidised colour is extremely rare. Perhaps this piece was made in emulation of undressed A3 ware. I B (11a).

17. Extremely coarse base of A1 grey ware. (See No. 11 above). I B (7).

18. Base of A3 red ware with traces of red dressing inside and out. I B (7).

19. Rim of coarse A2 buff-brown ware. (c.f. Piklihal type 2) I B (7).

20. Rim of A2 black mottled ware, with surface crackle clearly as the result of a firing fault. (c.f. Piklihal type 2). I B (7).

21. Side of a red-brown A2 ware vessel with horizontal burnish inside and vertical burnish outside. Coarse stony clay. (Compare Piklihal type 38, both for form, ware and burnish). I B (7).

22. Rim of A2 buff ware, size not determinable. I B (7).

23. Rim of outcurved vessel of A2 grey-black burnished ware with traces of unburnt red ochre wash. Size not determinable. I B (7).

24. Rim of A2 buff ware with traces of unburnt ochre painted band. (c.f. Piklihal type 2). IB (9).

25. Rim of much worn A3 red ware with light red surface dressing and roughly applied bands of purple paint, running diagonally down the inner surface and horizontally round the outer, below the rim. (compare Piklihal type 19a). I G (11).

26. Very thick rim of A2 grey ware with an unusually broad band of unburnt red ochre inside and out. I G (11).

27. Rim of A2 grey-black ware with traces of a broad unburnt ochre band. (Compare Piklihal type 1). I C (7).

28. Rim of A2 grey ware with unburnt ochre band. (c.f. Piklihal type 28e) I J (12).

29. Rim of bowl of A2 grey ware with broad unburnt ochre band on inner side. The surface colour is dirty blackish grey. (c.f. Piklihal type 1). IA (3a).

30. Exceptionally thick and roughly formed rim of large bowl of A1 black and buff ware, with traces of broad band of unburnt red ochre on inner face. (c.f. Piklihal types 2n, 2q, etc.). I E (11).

31. Rim of black and grey A2 ware with traces of red ochre painted band now almost obliterated. (c.f. Piklihal type 2k etc.). I E (11).

32. Rim of buff to brown A2 ware (compare Piklihal type 10). I E (11).

33. Rim of much decayed A3 red ware (compare Piklihal type 10). I E (11)

34. Rim of A2 grey-black ware with unburnt ochre band. (Piklihal type 10) I J (11).

35. Rim of a fine, well made A3 red ware with unusually brilliant light red dressing regularly burnished. There appear to be traces of burnt purple paint on the underside of the outer edge (compare 25 above, and Piklihal type 19a). I J (11).

36. Two fragments of much weathered A3 red ware, broken anciently but joining (compare No. 40 below). (c.f. Piklihal types 20 and 68). I J (11).

37. Sherd of A3 red ware with 3 strokes of pre-firing purple paint on the outer surface. This piece seems to come from a vessel of similar type to Piklihal type 70a. I J (11).

38. Rim of A2 brown and buff ware with unburnt red ochre band. (Compare Piklihal type 28). I E (7).

39. Rim of unusually well burnished A2 black and brown ware bowl. (c.f. Piklihal type 28). I E (7).

40. Rim of buff clay probably a highly weathered A3 red ware with almost all the dressing removed, of similar form to No. 36 above. (c.f. Piklihal types 20 and 68). I J (12).

41. Rim of A2 black ware with unburnt ochre painted band. (c.f. Piklihal type 28). I J (3).

Fig. 8.

42. Rim of large bowl of A2 grey and black ware with broad unburnt ochre painted band. (c.f. Piklihal type 2). I G (9).

43. Shoulder of unrecognizable form in A3 ware with fine red dressing and fragmentary traces of purple pigment on the outer face. It is impossible to detect what the original pattern may have been. I G (11).

44. Rim of much weathered A2 grey and black ware. (c.f. Piklihal type 21). I M (11).

45. Base of a hollow footed vessel of A3 black ware with highly micaceous body clay, black dressing and traces of burnish. The foot has been made by hand. (Compare Piklihal form 42, also foot from Brahmagiri, T74, which is in A2 black with unburnt ochre painted decoration[1]. Other examples occur at Maheshwar (c.f. Fig. 30, type T33a, etc.). It is reasonable to infer that the complete form would have been a hollow-footed stand or cup of a kind not uncommon in B1 black-and-red wares. For examples in that ware compare Brahmagiri P12 from a pit-circle grave[2], and several examples from Adichanallur, etc., I N (12).

46. Rim of A2 grey and black ware with unburnt ochre painted band. (c.f. Piklihal type 10). I K (12).

47. Rim of bowl of A2 grey ware with red ochre painted band. (c.f. Piklihal type 3). I K (12).

48. Rim of unusually hard fired A2 ware, with grey inner surface and light brown outer. The outer surface has been carefully burnished with successive hori-

1. *Ancient of India* No. 4, p. 231.
2. ibid, p. 218.

zontal strokes. There is a broad unburnt ochre band around the edge. (c.f. Piklihal type 28). I C (9).

49. Rim of chocolate brown A2 ware with equally fine horizontal burnish and traces of post-firing painted decoration applied inside the rim. Compare the form of No. 25 above, also Piklihal type 19a. The technical skill exhibited in both Nos. 48 and 49 is unusually high for Utnur. I C (9).

50. Rim of decayed A2 grey ware. I H (11).

51. From a mixed pit deposit come two sherds of A3 black ware of an unusual inturned form. Comparable forms are known widely in India in early historic times, even occurring in the N.B.P. ware. This however is a unique occurrence and must be treated with great caution in the absence of comparable materials from this area. But see, too, Maheshwar type, T.5. and T.5a. II E, pit.

52. Rim of a large bowl of A2 grey ware with faint traces of an unburnt red ochre painted band. The grey surface is unusually pale. (Piklihal type 1). I P (11).

53. Rim of a small vessel of highly burnished A3 black ware. (Piklihal type 20 y, etc.) I K (5).

54. Rim of bowl of brown A2 ware. (Piklihal type 3). I N (11).

55. Typical base of A1 grey ware (compare No. 3 above). I G (9).

56. Bowl of A2 grey ware with black patches on body and traces of unburnt red ochre painted band. I K (5).

57. Rim of grey-black A2 ware, showing distinct traces of hand modelling. (Piklihal type 28). I A (9).

58. Rim of A2 grey ware. (Piklihal type 28). I C (11).

59. Sherd of characteristic A3 red ware. The specimen is incomplete and it is uncertain what the original form was, but there is at least a partial resemblance to the Piklihal legged stands of A3 red ware. (Type 59b, 59f etc.) I A (8a).

60. Sherd from the wall of a large vessel of fine hard-fired A2 grey-black ware with very regular vertical burnish upon the outer surface. (Compare Piklihal type 38a both for form and ware). I C (11).

61. Rim of very roughly modelled A2 orange-brown ware. The form is so irregular that the size could not be determined. This sherd came from a disturbed area in the filling of one of the robber (porcupine?) burrows in Site II. II C, pit.

62. Rim of A2 orange-brown ware with fine burnish. (Piklihal type 28). II D (5).

63. Rim of A1 brown ware, very coarse clay and too small to determine size of vessel. I E (7).

64. Rim of A2 grey ware. I B (9).

65. Fragrment of the base of a very heavily built A2 ware, orange-brown on the outer surface and black inside with fine burnish. I E (8)

66. Rim of bowl of A3 black ware, much weathered. I B (9).

67. Base of A2 ware, mottled pale buff-grey-black, with high burnish inside and out. I C (9).

68. Rim of A2 orange-brown ware, well burnished. The fabric closely resembles that of the base No. 65 which was found nearby in the same layer. I E (8).

69. Rim of large vessel of fine A3 grey-black ware, with highly micaceous body. I C (9).

Incised sherds. Pl. 10a, Nos. 1-9.

1. Sherd of A1 grey-brown ware with irregular incised lines. I M (5).
2. Sherd of similar ware with thumb-nail impressions. I C (11).
3. Sherd of similar ware with short irregular incised lines. I E (7).
4. Sherd of similar ware with deeply incised lines. I B (11).
5. Sherd of similar ware with shallow incised lines. II E (3).
6. Sherd of similar ware. Surface find.
7. Sherd of similar ware with stick impressions. II E (5).
8. Similar with shallow impressed lines made with bone or similar tool. I A (5).
9. Sherd of similar ware with single broad incised line. I B (7).

Noteworthy fragments of pottery (other than those illustrated above).

1. 9 fragments of A3 red ware with silver-grey micaceous body clay, the inner surface has been scraped, and the red dressing burnished. There are traces of purple paint applied before firing. Average body thickness 3-4 mm. I E (12).

2. 3 sherds of A3 burnt sienna ware, typical. Average thickness 3 mm. I E (12).

3. I sherd of fine A3 red ware. The body is of a grey clay without mica content and is well made and highly fired. The surface has a bright red dressing. I B (7).

4. A sherd of similar ware. I C (11).

5. 15 sherds of A3 red or black ware. All are characteristic, and throughout are lightly fired. Many have lost most of their surface dressing. I J (7).

6. A unique sherd of a very fine light grey clay, with dark grey glossy burnished surface. Although only 1 cm. square this sherd has a texture and regularity quite unlike anything else from this site. The firing is unusually hard. The general quality suggests that it is imported. I J (7).

7. A bag of 100 sherds from a single layer including fragments of 5 A2 painted rims and 3 typical bases of A1 or A2 ware. The persistent recurrence of rims and bases at this site suggests that they must originally have belonged to the same vessels. Another feature noted in this bag (and in other lots) was that several sherds of A2 grey ware, including some with unburnt ochre painted bands, show a cream coloured slip. In this particular, which is hitherto unreported in this region, they suggest the cream slipped wares of Maheshwar and Nagda. It is not however suggested that they represent imports from those sites, as their general characters are those of the local Neolithic wares, but rather that this ware as a whole may show traces of contact with the more northerly assemblages. I K (12).

B. THE EARLY HISTORIC POTTERY

The limited nature of the deposits of early historic and later pottery at this site render any contribution to the technological and functional study impossible The much greater standardisation of the potter's craft which appeared during this period and which has continued into modern times precludes the necessity for repeating the study. Thus we shall confine ourselves to noting the occurrence of these wares and to a brief analysis of the different varieties. We shall then list the principal types recovered. For the purposes of consistency we shall retain the analytical framework of the Piklihal pottery, as far as it meets the present wares.

The black-and-red B1 ware, with its distinctive range of forms and characteristic forming techniques and surface treatment, is scarcely found in our excavations. A number of sherds of black-and-red ware were found, but whenever these were associated with other fragments they were found to include B2 painted, B3 and B4 wares. Moreover, the range of forms and surface finishes indicates that in all

cases they are more truly B3 black-and-red ware. The B2, B3, and B4 wares occur usually in associated groups. They are found only in the surface humus and mixed ash and soil layers (layers 1 and 2 of Site I, and layers 2 and 3 of Site II). A rich collection of fragments came from the pottery pit excavated from the surface of layer 2 in squares B and C of Site I. Again a few fragments were found in trench 1 in squares G and H of Site I. Throughout all parts of the ash mound, but particularly in Sites II and III, and in square L of Site I the activities of human robbers, and of animals, apparently porcupines engaged in nest building and tunnelling were found. The fillings of these pits and tunnels also produced many fragments of B ware. Here too, a consistent sprinkling of B2 sherds suggested the homogeneous character of the whole assemblage. Thus, although there has been disturbance of the site at several periods since the completion of the ash accumulation process and particularly since the superficial early historic occupation, and although the greater part of the pitting and tunnelling, whether animal or human, can be assigned to a reasonably concise period of time, there is positive evidence of the separateness of the ash accumulation period from that of the early historic settlement. In the excavation a very small number of B ware sherds were recorded among the contents of earlier layers, but these can be safely discounted as the results of imperfect excavation technique, sherds falling from the walls of pits, the presence of small undetected animal burrows, etc.

The B2 painted ware is mainly differentiated from the B3 ware by the presence of white pipe clay painting under a final ferruginous dressing. Its technological appearance was discussed in the Piklihal report. Since the first systematic description of fragments from Brahmagiri and Chandravalli[1] little new information on its history has been adduced. The B3 ware occurs in black-and-red, red-and-black varieties. The fabric is distinguished from that of the black-and-red B1 by the general heaviness of body sections, revealing the developed early historic potter's methods, and by the usual absence of burnish upon the surface. It is probable that the B3 ware will be found also as a regular accompaniment to B1 wares in Iron Age assemblages. This will indicate the continuing development of the potting traditions through the two periods in this region. The B4 ware is a plain clay without surface dressing, slip or burnish. It is reserved for vessels of the most expendible kinds, and its products rarely show any sort of finish.

Along with the regular B wares, which may be regarded as of local manufacture, there occurred a small number of special or imported fragments. Only one of these was so distinct that it can be named, but others are of types which occur at site after site in the area, always in small quantity, and suggest that they were the products of special workshops or centres. Thus there are five sherds of black brown or black-red ware having a surface dressing quite different from that of the B3 ware. This ware occurred in the Raichur doab as a surface find at several sites,

1. *Ancient India*, 4, P. 237 etc.

once with a rouletted decoration. It is not true rouletted ware, but is rather an imitation of it, manufactured no doubt at some centre in the region, none of the fragments from Utnur had rouletted decoration (Pl. 9, Nos. 10, 23, 27 and Pl 10, Nos. 40 and 42). Another type of decoration which is noteworthy in this context is the fingertip applied, white painted, rosette upon the inner base of a *t'ali* of B3 ware. This type of decoration occurred at Chandravalli in the Satavahana period[1] and also as an occasional find in the Satavahana city of Kondapur[2]. At Utnur this new type of rosette is no doubt a variant upon the local limitations of the rouletted ware. The third type of imported pottery was a single fragment of a Red Polished ware sprinkler found in Site I, square L, layer I.

This sherd is beyond doubt imported from one of the centres of manufacture of the fine red ware, perhaps, from Kondapur where its great abundance indicates local manufacture. That the ware was an imitation of Roman or Mediterranean prototypes which found their way to India at the opening of the Christian era is well established.

Numerically the least common pottery finds are of the Medieval grey and brown (D) wares. These are to be found throughout the whole area on the surface, but their occurrence at the ash mound was limited to a few sherds from the pit in site I, square L. Their presence there probably only indicates that some of the filling of this pit dates from medieval times.

In the following list of illustrated specimens, comparisons of form are made, wherever possible, to those of Piklihal in the first instance. Further comparison to other published material will be found in the Piklihal report.

Fig. 9.

(Nos. 1-27 are from the pottery pit, Site I, square B, layer 1).

1. Bowl of B3 black-and-red ware. Compare Piklihal type 7c; Brahmagiri type T158 ; Maski type 1a.[3].

2. Similar bowl of B3 red ware.

3. Bowl of B3 red ware, somewhat less glossy than the previous example.

4. Base of cup of B4 black-and-red ware. Compare Chandravalli type A21 for but one example of these common vessels.[4].

5. Base of similar cup of similar ware.

1. *Ancient India*, 4. Pl. CXXIII, and personal observation in the Mysore Archaelogical Department Museum.
2. Observation made in the site museum at Kondapur.
3. See *Ancient India* No. 4, Fig. 28, and *Ancient India* No. 13, Fig. 26.
4. *Ancient India* No. 4, Fig. 47.

6. Rim of cup of B3 red ware. Compare Brahmagiri type T147[1].

7. Body of jar of B3 red ware.

8. Rim of cup of B 4 red ware, perhaps from the same vessel as No. 5 above.

9. Rim of a large bowl of B3 red ware. Compare Maski type 13 from the early historic period.[2].

10. Base of a *thali* bowl of a brown-red variety of B3 ware, having a glossy surface dressing which distinguishes it from the local ware. Probably a regional variant of rouletted ware. Compare *thalis* from Brahmagiri, Chandravalli and Arikimedu.

11. Rim of B3 red ware. Compare Piklihal type 25r.

12. Jar of B3 red ware with two incised bands on the shoulder. The bands were made before the application of the red slip or dressing. Compare Piklihal type 25.

13. Side of *thali* bowl of B2 black-and-red painted ware. This common form in both B3 and B2 ware is found at Piklihal (type 3d), Maski and Chandravalli[3].

14. Side of similar form of B3 black-and-red ware. In addition to the above distribution of the type in B3 ware, it is also reported at Maheshwar in black-and-red ware from Period VI.[4].

15. Small bowl of dull brown B3 ware, perhaps this sherd has been burnt. Several other sherds from the pottery pit show similar signs of burning. The form is common in the region throughout the period.

16. Similar bowl of B3 red ware.

17. Rim of *thali* bowl of B2 painted ware. Compare Brahmagiri type T 137[5]

18. Small bowl of B3 red ware.

19. A similar bowl of very dark brown B4 ware. Probably this piece has been burnt after breakage.

20. Rim of bowl of B2 painted ware. Compare Brahmagiri type T. 132[6].

1. *Ancient India* No. 4, Fig. 28.
2. ibid. No. 13, Fig. 26.
3. *Ancient India*, No. 13. Fig 25. no 5; *Ancient India* No 4, Fig 45, no A9.
4. *Excavations at Maheshwar*, Fig. 77, Tll6a.
5. *Ancient India*, No. 4, Fig. 27.
6. *ibid.*

21. Bowl of B4 pink ware, similar in form to No. 16 above.

22. Bowl of B2 black-and-red painted ware, The surface is stained to a very dark brown, apparently by the agency of fire after the breakage of the pot. Compare several examples of similar ware from Brahmagiri and Maski.

23. Side of a *thali* bowl of a black-and-red variety of B3 ware similar to No. 10 above. Perhaps from the same vessel. Compare Brahmagiri T129 and T 141[1].

24. Side of a *thali* of B3 red ware. Compare No. 14 above.

25. Rim of bowl of B3 red ware.

26. Rim of large storage jar of B3 red ware. Several not dissimilar rims occur at Arikamedu and Maski[2].

27. Base of a *thali* bowl of a similar fine imported variety of B3 ware to No. 10 above. Imitation rouletted ware.

Fig. 10.

(Nos. 28 - 37 come from the same pottery pit in Site I, square B ; Nos. 38 - 44 are from the spill from the pit in Site I, square A, layer 1).

28. Bowl of B4 red ware. Compare Chandravalli A22[3].

29. Rim of a bowl or inverted cover of B3 red ware. Compare Chandravalli A36 [4].

30. Rim of larger jar of B3 red ware. Compare No. 11 above.

31. Cup bowl of B4 red-pink ware. Compare No. 28 above.

32. Side of *thali* bowl of B3 red ware. Compare No. 14 above.

33. Rim of jar of dull red B3 ware. Compare Chandravalli type A49 [5].

34. Side of *thali* bowl of B2 black-and-red painted ware. Compare No. 13 above.

35. Lid of B3 red ware. This common form is found on many sites of the early historic period. Compare Chandravalli type A40, and Maski[6].

36. Cup bowl of B4 ware. Compare No. 31 above.

37. Rim of heavy storage jar of B3 red ware. Compare Piklihal type 36.

1. *Ancient India* No. 4, Figs 27 and 28.
2. *Ancient India* No. 2, Fi8. 30, no. 76; and *Ancient India* No. 13, Fig. 27, no. 18a.
3. *Ancient India* No. 4, Fig. 47.
4. ibid. Fig. 48.
5. *Ancient India* No. 4, Fig 48,
6. ibid; and *Ancient India* No. 13, Fig. 26, No, 7.

38. Rim of a bowl of B1 or B3 black ware, the outside is decorated with two incised bands. This is one of the very few pieces that is nearer to pottery of Iron Age date than to early historic. Compare Piklihal types 3b and 7e ; Maski type 4a of Period II ; Brahmagiri type T84[1].

39. Side of *thali* bowl of B2 red-and-black painted ware. Compare Brahmagiri type T134[2].

40. Side of a *thali* bowl of a very fine imported ware. Probably imitation rouletted ware. The colouration is black. Compare Chandravalli type A14, etc.[3].

41. Fragment of a tiny lid of B4 pink ware. Lids of this form occur in both Iron Age and early historic periods. Compare Maski No. 10 of Period II, and Brahmagiri type T149[4].

42. Side of *thali* bowl of almost identical form to No. 40 and made of similar ware. The thickness of the section and slight differences of colour indicate that these two belong to different vessels.

43. Large bowl of B3 red ware. Varieties of this form are not uncommon in early historic sites in the area. Compare also Arikamedu type 84 and 84a[5].

44. Neck of water jar of B3 red ware. Compare Chandravalli type A60 and Brahmagiri T191[6].

45. Lid of dull red B3 ware from surface of mound. Compare similar forms from Brahmagiri, Chandravalli and Maski, all from the Early historic period.

46. Narrow bowl of B2 black-and-red painted ware. Comparable forms occur in the ware at Brahmagiri, Chandravalli and Maski.

47. Lid of a coarse buff ware without burnish or dressing. Coming from the surface of the mound it cannot be definitely associated with either the A or B ware complex as it is unique. A small hole had been pierced through the body of the lid while the clay was still green hard.

48. Rim of large jar of B3 red ware. Compare Chandravalli type A66.[7]

1. ibid, Fig. 22; *Ancient India* No. 4, Fig. 24.
2. ibid, Fig a7.
3. *Ancient India* No. 4, Fig 47.
4. ibid, Fig 28; and *Ancieut India* No. 13, Fig, 22.
5. *Ancient India* No. 2, Fig 31.
6. *Ancient India* No. 4, Figs 49 and 30.
7. ibid, Fig, 49.

Fig. 10b.

1. A sherd from the base of a *thali* bowl of B3 black-and-red ware. The inside is black and is decorated with a grey-white pipeclay painted decoration before firing. This was applied with the finger-tip so as to form two concentric circles, and around the outer is a third circle of dots. The sherd came from the surface of the mound in the immediate vicinity of the pottery pit in site I square B, and there can be no reason to doubt that it originated in this group. Comparable painting has been reported at Chandravalli, and several other examples are among the finds from the excavations at Kondapur.[1]

Noteworthy fragments of pottery (other than those noted above).

1. A sherd of red polished ware from the shoulder of a characteristic sprinkler form. This fragment was found in Site I, square L, Layer 1. There can be no doubt that it is an import at Utnur.

2. A mixed bag of 25 sherds from Site II, square F, robber pit, containing about equal numbers of B1 black-and-red and B3 ware sherds. The absence of B2 painted sherds and the presence of several fragments of fine burnished B1 suggest that this pit filling may well be earlier than the early historic pottery pit.

3. A group of B1 and B3 ware sherds from an animal burrow in site II, square D, contained a single fragment of B1 black-and-red ware with a painted decoration applied before firing in a pale mauve paint. This fragment of painted B1 were is unique in this region ; but other instances of painted B1 ware occurred in the earlier excavations at Maski.

B. Wares—Conclusion.

We have seen that the great bulk of the B ware fragments come from the pottery pit in Site I, from associated trenches in that area, and from the surface. A smaller number are found in the various pits and tunnels which honeycomb the site. There can be no doubt that the illustrated forms, with one exception, all belong to a period very closely akin to the ' Andhra ' period at Chandravalli, that is to the first two centuries A.D. On the other hand there is slight evidence that the single remaining illustrated form and some of the pottery found in tunnels and pits on the site may be somewhat earlier and date from the Iron Age. Even so we must again stress that there is no indication of any overlap between these fragments and the pottery associated with the period of ash accumulation. This, as we have already remarked belongs rather to the Lower Neolithic of Piklihal : the Upper Neolithic and Intrusion phases of that site are totally absent at Utnur.

1. *Ancient India* No. 4, Pl.CXXIII; and observation made in the Kondapur site museum.

C. NEOLITHIC BLADE INDUSTRY.

A small number of tools of a typical Neolithic stone blade industry were discovered in the excavations. As might be expected every one came from layers of the ash accumulation period, and not a single specimen from the early historic deposits. Within the ash accumulation period they show a distribution similar to that of the pottery : no evidence for the evolution or development of the industry is found. The assemblage was augmented by two surface collections, the first in the fields immediately joining the ash mound and the second from fields at a short distance along the banks of the nallah. Either alone or thus augmented the industry compares well with the typology revealed in the excavations of larger Neolithic settlements such as Maski or Piklihal. The very small numbers of tools recovered and the poverty of the raw material may be associated with two related causes : that at Piklihal and the larger settlements there was a specialist group who imported their raw materials, often from considerable distances, while at Utnur there were neither specialists nor a source for good raw material available in the immediate locality. However, it must be remembered that Utnur is barely 7 miles from the river Tungabhadra whose gravels supplied ample raw material to the numerous factory sites which Professor Subbarao discovered on its banks around Nagaldinne.[1] Hence the explanation of the paucity of tools and the poverty of raw materials must be sought in the smallness of the ash mound's population and the absence of specialist stone blade workers, etc.

Tools from the excavations.

The tiny collection provides no opportunity for extending the technological and typical data examined at Piklihal, and elsewhere. Hence we shall limit our study to the typology to establish the relationship of the Utnur assemblage to that of cognate sites. The finds from the excavations may be listed as follows :—

Cores	2
Blades	13
Backed blades	2
Lunate	1
Flakes	14
Used pieces	2
Total ..	34

1. c. f. B. Subbarao's Ph. D. thesis for Bombay University, 1949, 'Prehistoric and Early Historic Cultures of Bellary', pp. 92—5. Quoted with authority.

An analysis of the find spots reveals that all were found outside the inner stockade, either between it and the outer trench or outside it. This may be the reason for the absence of finds of this type in the Site II, for its whole length was inside the line of the inner stockade. The tools occur particularly in the lowest layers, that is in Periods I and II. Analysed from this point of view there are no tools in Periods V and IV ; only 2 specimens in Period III ; 14 in Period II ; and 18 in Period I. The complete list of finds is as follows :—

1. Broken blade flake of chert. Site I, A (5).
2. Blade flake of chert. I, A (5).
3. Core of very poor quality jasper with many flaws, tiny blade flakes have been struck from it. I, B (7).
4. Used flake of jasper, perhaps struck from No. 3 above, and thus indicating that it was worked in situ. I, B. (7).
5. Small broken blade of chert, with heavy use marks. I, B (9).
6. Small backed and truncated blade of chert. (Fig. 11 No. 13). I, B (11).

7-8. 2 fragments of worked chert. I, B (12).

9-10. 2 blades of chert, one broken. Site I, C (11).

11. Flake of chert. I, C (11).
12. Long lunate of chert, the tip is broken. (Fig. 11 No. 8) I, E (7).
13. Section of broken backed blade of chert. (Fig. 11 No. 11) I, E (7).

14-17. 4 Flakes of chert. I, E (7).

18. Flake of chert. I, E (12).
19. Section of small blade of chert. (Fig. 11 No. 12). I, G. (9).
20. Flake of chert. (Fig. 11 No. 7). I, G (12).
21. Blade core made on a river pebble of coloured chert. (Fig. No. 1). I, J. (7).

22-24. 3 broken blades of brown chert. (Fig. 11 No. 5). I, J (7).

25. Flake of brown chert. (Fig. 11 No. 2). I, J (7).
26. Flake of fine basalt. (Fig. 11 No. 4). I, J (7).
27. Broken blade of blackish chert. (Fig. 11 No. 14) I, J. (9).

28-29. 2 broken blades of chert. (Fig. 11 Nos. 3 and 6). I, K (12).

30-32. 3 used flakes, 2 of chert, 1 of chalcedony. I, K (12).

33. Unusually large broken blade of chert. (Fig. 11 No. 10), I, N (11).

34. Used chert flake. I, P (11).

Surface assemblage (a).

The first surface assemblage was made in the field containing the ash mound and in other fields contiguous to it. In the absence of evidence of any other occupation of human activity in the area before early historic times it can be inferred that this assemblage belongs to the ash accumulation period. This is further borne out by the typological analysis of the assemblage. In the following table all tools are of chert unless otherwise stated.

Blade cores.	1 complete, 2 fragmentary (Fig. Nos.15, 16 and 25). Made of chert chalcedony and crystal. All very small and worked down to the last possible degree. All contain flaws or traces of cortex and appear to be made upon water-worn pebbles. Many of the other tools were made from such pebbles, but some of the larger sections of chert blades must have been made from cores very different in size and material to any we found.
Blades.	11. (Fig. 11 Nos. 19, 20). All broken and several broken into regular sections as if for composite hafting. Compare the Piklihal blades.
Retouched blades.	1. Section of a blade worked across the end. (Fig. 11 No. 18).
Lunates.	
Discoids .	2. 1 of chalcedony, 1 minute crystal.
Scrapers on flakes.	5, all rough and formless.
Microburins (?)	3.
Flakes	16. Many show signs of heavy use. (Fig. 11 No. 27).
Guide flakes	3. All primary, one complete and two broken. (Fig. 11 No. 23).
Used pieces	19. all definitely struck and used by man.
Worked quartz crystals.	3.
Pebble hammerstones	2. (Fig. 11, No. 24).
Total	68

Surface assemblage (b).

These pieces were collected in the fields beside the nallah ; near the excavation camp site, and to the west. They are characterised by their minute size, for example the core figures in Fig. 11, was barely 13 mm. in length. Several of the tools from both these surface collections showed a very light patination.

Cores.	..	2 (Fig. 11, Nos. 17, 21).
Blades.	..	11 All broken sections (Fig. 11, No. 26). often of minute size.
Flakes.		16
	Total ..	29

Summary.—Thus we see that the blade industry at Utnur bears evidence of a remarkable paucity of raw material and poverty, when compared with the much richer assemblages from such sites as Sangankal, Maski or Piklihal. The material used was mainly water-worn pebbles of chert, chalcedony or crystal and was probably derived from the banks of the Tungabhadra which is barely 7 miles away. The presence of several worked quartz crystals recalls their occurrence in the Neolithic occupation at Piklihal. The typology and general standards of technical accomplishment are reminiscent of the industry from the other sides. The presence of pebble hammerstones and of blades apparently struck from one of the cores from the excavation indicates that working was done on the site, but probably was done by amateurs rather than by specialists. The relative scarcity of used sections of blades, which at Piklihal are so common, is a notable feature.

D. GROUND AND PECKED STONE INDUSTRY.

From the excavations of the ash mound a small assemblage of ground and pecked stone tools were obtained. These were augmented by a surface collection from the area. The collection was made both in the fields around the site and in the fields along the banks of the nallah for about 400 yards to east and west of the site. The greatest concentrations of finds were from the fields between the site and the nallah and from those immediately to the west. However, for the reasons already mentioned there seems to be little possibility that any of the objects in the present surface collection represents a later intrusion with a single possible exception. The industry compares both technologically and typologically with those I have already studied from Bellary and Piklihal[1] ; and it conforms to the general pattern revealed in the other categories of find. However, there are also certain novel

1. See *Piklihal Excavations* (1961).

eatures which separate this industry from those of the settlement sites and major factories, and these *may* also have chronological significance, but this seems unlikely as other causes may be cited to account for the variation, which appear to supply the necessary conditions for it.

The raw materials used at Utnur are quantitatively different from those at the other sites. There is a marked absence of basalt. Again many tools are of a grey gneiss or a dark green horneblende schist, both are almost certainly of local origin. Otherwise there is a usual admixture of granites, gneisses and diorites. The technology of the industry is also distinct from that of the other sites. This may in part be due to the absence of basalt of which a great part of the flaked and ground tools from Bellary or Piklihal are made. It is not at present clear whether the absence of basalt is to be accounted to an absence of suitable dykes in the neighbourhood to supply the raw material. Several small dykes are recorded, but we did not visit many of them. Be this as it may, it is noticeable that in any Neolithic assemblage the axe group includes a majority of tools of basalt and that these are mainly made by flaking and edge-grinding. The Utnur assemblage contains very few axes and few tools of basalt, and thus it also lacks many flaked tools. Proportionately the number of tools produced by pecking and grinding is much higher than elsewhere. Another feature of the Utnur tools is their comparative lack of technical finesse. Viewed from this point of view, the materials from the Sangankal excavations show a remarkable degree of stoneworking craftsmanship ; those from Piklihal show a great variety ; and those from Utnur are far behind the other two groups. Perhaps another related variation can be seen in the extent to which tools have been used and re-used. There are very few examples of fresh, little-used tools from Utnur. At Sangankal the presence of tools in mint condition may in part be explained by the fact that the Bellary hills formed a great factory site, but even at Piklihal or Billamrayan Gudda the number of fresh tools is much greater than at Utnur. Nearly all the Utnur tools, from excavation or surface collection are crudely made, very highly worn and were ultimately broken into fragments.

TABLE I: UTNUR : GROUND AND PECKED STONE INDUSTRY.

Surface Collection.

Edge Tools				Rubbers and Grinders							Hammers				
Axe Group	By-product Flakes	Block outs	Discs	Spheroid Rubbers	Ovoid Rubbers	Discoid Rubbers	Miscellaneous Rubbers	Pestles	Concave querns	Pallettes	Hand-hammers	Oval Hammers	Axe Hammers	Misc. Hammers	Selected Stones worked fragments
12	12	11	1	5	8	7	..	1	3	6	..	1	1	..	..

EXCAVATIONS

Edge Tools				Rubbers and Grinders							Hammers				
Axe Group	By-product Flakes	Block outs	Discs	Spheroid Rubbers	Ovoid Rubbers	Discoid Rubbers	Miscellaneous Rubbers	Pestles	Concave querns	Pallettes	Hand-hammers	Oval Hammers	Axe Hammers	Misc. Hammers	Selected stones worked fragments
..	1	..	..	11	11	3	20	..	10	7	3	..	..	2	About 50

Analysis of the surface collection.

The number of tools of each type in the surface collection and in the excavations is given in Table I. We shall now give a brief description of the types in the surface collection.

Axe group.

12 axes were found, all except 1 are illustrated in Pl. 11a. In no case had the blade survived in tact, but it had been either so blunted with use as to cease to serve as an edge or else broken. Only 1 example (No. 10 of Pl. 11a) gave any indication of having been formed by flaking. Others, notably Nos. 1, 2, 8 and 11 appeared to have been mainly formed by pecking and battering ; while some, for example No. 4, were probably no more than suitably formed natural nodules, utilised after a minimum of forming and grinding.

Pl. 11 a.

No. 1. Axe of grey gneiss, pecked and ground, blade broken.

No. 2. Small axe of grey granite with squared butt, pecked and ground, blade broken right off.

No. 3. Butt end of small axe of greenish horneblende stone, pecked, blade missing.

No. 4. Butt end of long axe of granite, very roughly formed by grinding natural nodule. Blade missing, nearly circular section.

No. 5. Butt end of small squarish axe of greenish horneblende stone. Pecked, battered and ground.

No. 6. Butt end of small triangulate axe of much weathered grey basalt.

No. 8. Body of short squat axe of dark grey gneiss. Pecked and ground, blade broken.

No. 9. Butt end of axe of dark green-grey dolerite.

No. 10. Roughly flaked axe of basalt, without trace of grinding. Has been blunted and used as hammer, the body bears traces of hafting polish.

No. 11. Basalt axe, the blade is broken but bears traces of grinding.

No. 12. Roughly flaked axe of basalt, with square butt, blade broken.

By-product flakes.

These flakes are either by products from the manufacture of axes, or from the re-working of broken specimens. 12 were found, of gneiss, basalt and dolerite.

Blocks.

11 blocked-out axes of basalt, horneblende schist and gneiss, roughly flaked to shape, were recovered. (Pl. 11a, No. 7).

Discoids.

1 discoid of grey gneiss.

Spheroid rubbers.

5 examples were found, of greenstone, granite and gneiss. They are exactly similar to their counterparts at other sites (Pl. 11b. Nos. 4 & 6).

Ovoid rubbers.

8 examples of basalt, diorite, green horneblende schist and granite (Pl. 11 b, No. 3).

Discoid rubbers.

7 examples, some of which appear to have been used also as hand-hammers, of grey gneiss, green horneblende stone, and in one case a nearly natural nodule of ironstone has been utilised. (Pl 11b, Nos. 7, 8 and 10, of dolerite and granite).

Miscellaneous rubbers.

No examples.

Pestles.

1 example of a longish cylindrical-oval sectioned rubbing stone of pink granite. (Pl 11 b, No. 1).

Concave querns.

3 examples were collected although several other smaller fragments were noted in the fields. All were only parts of the originally rectanguloid querns, all were of granite. (Pl. 12b).

Palettes, flat grinding stones.

6 specimens were recovered, 5 of granite, and one of honreblende schist. (Pl. 11b, No. 9).

Oval hammers.

1 specimen of grey granite (Pl 11 b, No. 5).

Axe hammers.

1 specimen of diorite.

Specimens from the Excavations

Axe group.

No example of any edge tools were discovered in the excavations.

By-product flakes.

1 example of a used flake of basalt (?) was found in 1A (5).

Spheroid rubbers

11 examples were recovered ; usually they bore traces of prolonged and heavy use, but one specimen was in unusually good condition.

1. Spheroid rubber of grey granite, IL (2), (Pl. 12a, No. 1).
2. „ of granite, IO (7).
3. „ of grey gneiss, IA (5).
4. „ of whitish granite, surface disintegrating, IE (9).
5. Small spheroid of dolerite, Site III.
6. Part of large broken spheroid rubber of grey gneiss, 8 cm. diameter, II (6) (Pl. 12a, No. 4).
7. Fragment of spheroid rubber of granite, II (6).
8. Spheroid rubber of dolerite, ID (9).
9. „ of grey gneiss, IH (4).
10. „ of gneiss, IB (7).
11. „ of disintegrating gneiss, IB (9).

Ovoid rubbers.

11 rubbers of roughly ovoid form were discovered. These are treated as a separate type, although it would be possible to include in this group several less well formed pieces listed below as miscellaneous.

1. Ovoid rubber of white granite, Site III
2. „ „ of dark grey dolerite.
3. „ „ of whitish granite, IF (12).

4. Fragment of ovoid rubber of pinkish granite, IE (9)
5. „ „ „ IIF (4).
6. Another fragment from the same layer of disintegrating brown granite.
7. Fragment of ovoid rubber of grey granite, IE (7).
8. „ of pink granite, IG (9)
9. „ of grey-brown granite, IB (9).
10. Broken ovoid rubber of pinkish granite, IE (9).
11. Fragment of broken ovoid rubber of dolerite, IK (1).

Discoid rubbers.

3 specimens were discovered, made of pinkish granite, IE (7), granite II (F) (3), and unspecified stone IB (7). The first specimen is illustrated. (Pl. 12b, No. 6).

Miscellaneous rubbers.

20 other pieces were recovered, often no more than natural nodules which had been given a minimal shaping and bore evidence of their use as rubbers. None is illustrated. They came from all parts of the site.

Concave Querns

10 fragments were discovered, none were large enough to determine the original size, and none were as large even as the two illustrated surface fragments, but their identification was nevertheless quite definite.

1. Fragment of concave quern of granite, IC (5).
2. „ dark grey diorite, with heavy patination on surface, made from a partly natural block, bearing heavy use marks and polish on the inner surface IN (8).
3. Fragment of quern of grey granite, II (5).
4. „ whtish granite, II (5).
5. „ disintegrating granite, IG (11).
6. „ dark grey horneblende stone, IJ (6).
7. „ granite IB (2).
8. „ pinkish granite, IK (12).

9. „ pinkish granite, III.
10. „ grey granite, IA (5).
11. „ pink granite, IIF (4) (Pl. 12a, No. 3)

Palette Stones

These distinctive types turn up fairly regularly in the site. 7 examples were discovered.

1. Fragment of broken palette stone of fine grey granite, IG (9) (Pl. 12a No. 5)
2. Fragmentary Palette of whitish granite, III.
3. Broken palette stone of highly patinated dolerite, IC (7).
4. Piece of palette stone of pinkish-brown granite, IL (1).
5. Piece of palette stone of dolerite, IM (5).
6. Piece of white granite palette stone, IK (2).
7. Almost complete palette stone of pinkish granite found upon the surface of square M and bearing modern stains of use. Typologically there can be no doubt of its belonging to the Neolithic assemblage.

Hand-hammers.

A number of stones were found which bore traces of their use as hammers Of these only those were listed which conformed to types previously recognised as the others were too varied to constitute a manufactured type. 4 examples were listed.

1. Hand-hammer of grey gneiss, ID (11).
2. „ of dolerite, IF (9).
3. „ „ IF (12).
4. „ yellow granite, IJ (2). (Pl. 12a, No. 2).

Miscellaneous hammer stones.

Among the considerable number not listed we may notice two which have a regular form, however fortuitous.

1. River worn pebble of patinated quartz has been used as a hammerstone, IJ (5).
2. Water-worn pebble with use marks as hammer stone, IB (9).

Selected stones worked fragments, miscellaneous.

Among a large number of fragments of reworked stone, slightly worked nodules, used natural nodules, etc., may be noticed one or two finished speciments.

1-2. 2 utilised spheroid nodules of dolerite and granite, 10 (9).

3. Small lime encrusted ball of disintegrating dolerite, perhaps a weight or gaming piece, IG (9).

4. A group of about 2 dozen selected stones of granite, dolerite, quartz and quartz crystal, IA (8a).

5. Group of selected stones of quartz, granite, chert, and dolerite.

Commentary upon the ground stone tools.

A comparison of the tools from both surface and excavations reveals that the class of edge tools, which at Piklihal and Bellary occupy more than half to total assemblages, is present in the surface collection only and virtually absent in the excavations. Even in the surface collection it is represented mainly by a small group of roughly made and very heavily used axes. There is a complete absence of the main varieties of axe and small axes or adzes which distinguish the other assemblages ; there is also an absence of chisels and other types of edge tool ; likewise the types of pointed tools, picks and bores are absolutely absent. It is surprising therefore to find that the group of rubbing and grinding stones is well represented in both surface and excavations. There are comparatively large numbers of rubbers of even the more definitely formed types and also fragments of many concave querns and palettes. These tools presumably represent the sort of domestic usages which accompanied occupation ; while the axe group being more especially the particular possession of the males who used them in the jungles and far away from the site, were either carried away when the site was abandoned or else became broken or lost during use. It is further noticeable that the hammerstones from Utnur, as to some extent also from Piklihal, lack that proliferation of varieties which at Bellary may be connected with the manufacture of axes, etc. This presumably indicates the specialist nature of Bellary as a factory site, and the absence of a specialised stone-working industry at Utnur.

Analysed in terms of the Periods of their occurrence these tools do not reveal very much. In Period I there occurred some 4 spheroid rubbers, 5 ovoids, 2 quern fragments, 1 palette stone and 7 hammerstones ; in Period II there were 4 spheroids, 1 ovoid, 2 discoids 3 quern fragments, and 1 palette stone ; in Period III 2 spheroids 1 ovoid, 1 discoid, 3 quern fragments, 1 palette and 1 hammer ; in Period IV no examples were discovered, while in Period V, all present no doubt in derived form. There were several representative tool-types.

E. OTHER OBJECTS OF STONE AND WORKED BONE.

A single fragment of worked and perforated steatite or schist, evidently part of a perforated tablet 13 mm. in thickness, was found in Site I, square B, layer 2. Its proximity to the early historic pottery pit makes it probable that this find is of early historic age, and certainly it is unlike anything else from the Neolithic. (Fig. 11, No. 9). A number of pieces of cut bone were found, but generally they appeared to have been cut in order to extract the marrow rather than worked. One fragment from Site I, layer 11a, from the filling of the shallow cut in period IB, took the form of a bovine long bone ground at one end to form a flattened chisel-like blade. Reference may be made to other objects of worked bone from Piklihal and Halakundi, the latter also coming from an ash mound.[1] The Halakundi bone chisel resembles the Utnur example : in both cases they were probably rather used for scooping the marrow from bones than as chisels.

F. HUMAN REMAINS.

The infant burial referred to above provided the only human remains found on the site (Pl. 5b). The bones were, as might be expected, in almost total decay and few could be preserved in unbroken form. Thus no further study of them was possible.

G. ANIMAL REMAINS.

The excavations produced many hundreds of fragments of animal bones. These were mainly broken and were often only small, but they proved sufficient for a preliminary examination by Dr. P. Srinivasan, Reader in Anatomy in the College of Veterinary Science at Osmania University, to make an identification of several hundred specimens. The vast majority are of cattle, but a small number are also of deer and of goat. In the light of what we now know of the age and history of the Utnur ash mound, it is at once clear that a fuller study of these remains is desirable, for they belong to several sequent periods of occupation of a small, probably confined community of cattle, and may throw much further light upon the nature of the herd. The present statement must therefore be regarded as preliminary to further study when this becomes possible.

1. Allchin, *Piklihal Excavations* (1961), p. 112 ; Foote, *IPPA.* Pl.46, No. 347.

Bos indicus (the Indian Humped cattle).

Period IA.

1.	Astragalus	Site I	Square B
2.	Second phalanx	..	..
3.	Lower end of humerus	..	..
4.	Right metatarsal	..	J
5.	Lower end of metacarpal	..	..
6.	Lower end of metatarsal	..	..
7.	Fragments of ribs	..	..
8.	Upper end of radius	..	K
9.	Lower end of large metacarpal	..	..
10.	Upper end of right half of mandible	..	..
11.	Phalanx	..	..
12.	Left os calcis	..	..
13.	Fragments of ribs	..	..
14.	Cheek teeth	..	B
15.	Bodies of vertebrae	..	..
16.	Upper end of left half of mandible	..	..
17.	2nd phalanx	..	..
18.	Humerus, Lower end	..	K
19.	Femur, Upper end	..	..
20.	III tarsal	Site I	Square K
21.	Molar teeth	..	E
22	Molar tooth	..	G
23.	Occipital	K	K
24.	Head of femur	..	..
25.	Lower end of tibia	..	..
26.	Fibular tarsal	..	..

27.	Vertebrae	..
28.	Lower end of scapula	..
29.	II phalanx	..
30.	Upper end of Radius	A
31.	Large metatarsal tibill	..
32.	Tarsal ulna	..
33.	Unciform (4th carpal)	..
34.	Unciform (III and IV tarsals)	..
35.	Part of atlas	..
36.	Axis	..
37.	Part of femur	..
38	Radius	..
39.	Ulna	..
40.	Occipital condyle	..
41.	Intermediate carpal	..
42.	II phalanx	..
43.	Atlas	..
44.	Large metacarpal	B
45.	III phalanx	..
46.	Teeth	..
47.	Upper end of mandible (small size)	J

Period IB.

48.	Vertebrae	C
49	Molar tooth	..
50.	Large metatarsal (very small size)	..
51.	Small molar teeth	..
52.	Parts of ribs	..
53.	Upper end of femur	E
54.	Lower end of femur	..

55.	Large cuneiform ..	..	..	..	..	..
56.	III phalanx ..	..	..	..	..	..
57.	Radial carpal ..	..	..	..	..	..
58.	Lower end of tibia	..	..	..	..	B
59.	Large metatarsal	..	..	..	..	..
60.	Fibular tarsal ..	..	..	..	..	..
61.	Tibial tarsal ..	..	..	..	..	..
62.	Axis	..	..	..	..	..
63.	Molar tooth ..	..	..	..	..	..
64.	Fibular tarsal ..	..	..	..	..	M
65.	Large metatarsal	..	..	..	..	..
66.	Rib	..	..	..	..	..
67.	Carpal bones (very small size)	..	.. Site	I	Square	J
68.	Upper extremity, lower jaw ..	..	..	..		..
69.	I Phalanx ..	..	..	..	..	..
70.	Teeth	..	..	..	..	..
71.	Rib	..	..	..	..	..
72.	Teeth ..	..	..	..	..	B
73.	Rib	..	..	..	..	..
74.	Occipital condyle ..	..	..	..	..	..
75.	Tibia	..	..	..	..	E
76.	Large metacarpal	..	..	..	..	..
77.	Large metatarsal	..	..	..	..	..
78.	Tibial tarsal ..	..	..	..	..	..
79.	Upper end of mandible	..	..	..	..	..

Period IC.

80.	Ribs, etc. ..	..	..	..	..	D
81.	Molar tooth ..	..	..	..	..	G
82.	Large metatarsal	..	..	..	..	–

83.	Part of upper end of mandible	..	..	..	..
84.	Large metacarpal	..	..	..	..
85.	Lower end of tibia (very small size)	..	..	II	F
86.	Femur (very small size)	..	..	I	E
87.	Ribs („ „ „)	..	..	..	..
88.	Accessory carpal bone	..	..	..	..
89.	Lower end of radius	..	..	..	D
90.	Part of rib	..	..	..	..
91.	Petrous temporal	..	..	..	..
92.	Vertebra	..	..	..	A
93.	Tibial tarsal	..	..	..	..
94.	II Phalanx	..	..	..	..
95.	Tibia	..	..	..	..
96.	Atlas	..	..	II	C
97.	Large metacarpal	..	..	..	..
98.	Large metatarsal	..	..	..	..
99.	Radius	..	..	..	..
100.	Ulna	..	..	..	..
101.	Femur (small size)	..	..	..	..
		Period II.			
102.	Upper end of left tibia	..	..	I	B
103.	Lower end of left humerus	..	..	..	..
104.	Part of axis	..	..	..	..
105.	Os calcis	..	..	..	..
106.	2nd phalanx	..	..	..	..
107.	Parts of ribs	..	..	..	..
108.	Head of femur	..	..	Site II Square	A
109.	Tibial tarsal	..	..	..	..
110.	Upper end of tibia, large	..	..	..	F
111.	Vertebra (very small size)	..	..	..	..
112.	Femur („ „ „)	..	..	..	..

113.	Large metatarsal	I	E
114.	Part of occipital condyles	..
115.	Humerus (small)	..
116.	Ribs	..
117.	Patella	C
118.	Part of humerus	K
119.	Radius	..
120.	Ulna	..
121.	2nd Phalanx	..
122.	Ribs	..
123.	Large metatarsal	E
124.	Os calcis (small size)	..
125.	Fibular tarsal, ex-occipital	..
126.	Petrous temporal	..
127.	I phalanx	..
128.	Tibial tarsal	..
129.	II phalanx (small size)	..
130.	Large metatarsal (small size)	..
131.	Vertebra	..
132.	II phalanx (large size)	..
133.	I phalanx („ „)	..
134.	Tibial tarsal	..
135.	Rib (very small size)	..
136.	Molar tooth	..
137.	Part of mandible	..
138.	Tibial tarsal	C
139.	Part of vertebra II	C
140.	Tibial tarsal I	J
141.	Large Metacarpal	..
142.	Lower end of tibia	..

143.	Rib			
144.	Scapula			C
145.	Tibia			
	Period III.			
146.	Large metatarsal		I	A
147.	Upper end of tibia			B
148.	Lower end of radius		II	E
149.	Ulna			
150.	Ribs			
151.	Lower end of humerus		I	H
152.	Parts of ribs			
153.	Upper end of large metacarpal			
154.	Portion of pelvic bone			
155.	„ „ „ „		II	F
156.	II phalanx		I	K
157.	III tarsal			
158.	Upper end of radius		II	F
159.	Scapula (small size)			
160.	Teeth			
161.	Portions of vertebrae		I	P
162.	Femur			
163.	II Phalanx			
164.	Tibial tarsal			
165.	Axis			
166.	Part of tibia		I	H
167.	Large metacarpal		I	..
168.	Teeth		I	..
169.	Rib			E
170.	Occipital condyles		I	J

171.	Humerus (small size)			
172.	Teeth			
173.	Lower end of femus	II	E	

Period IV.

174.	Upper extremity and part of shaft of left tibia ..	I	K
175.	Lower end of left humerus		
176.	Upper end of radius		
177.	Lower check teeth		
178.	Portions of pelvic bone	I	J
179.	Sacrum		
180.	Sacrum (very small size		
181.	Scapula („ „ „)		
182.	2nd phalanx (large size)		
183.	Head of femur (small size)		
184.	2nd phalanx		
185.	Portion of pelvic bones		E
186.	Part of ulna		A
187.	Intermediate carpal		
188.	Lower end of humerus		
189.	Large metacarpal bones (small size)		
190.	Metatarsal of very small size		J
191.	Upper end of tibia		M
192.	Os calcis		
193.	Tibia		
194.	Tibia		J
195.	Large metatarsal		
196.	Lower end of femur	I	J

Period V.

197.	Portion of mandible				
198.	Molar teeth				
199.	Large metatarsal II				F
200.	Petrous temporal				
201.	Molar tooth				
202.	Piece of pelvic bone (small size)			I	A
203.	Teeth				L
204.	Vertebra				
205.	Molar tooth (small)			I	F
206.	Long bones (small sized)				L
207.	Vertebra				
208.	Rib				

Other species.

In addition to the cattle bones there were numbers of bones of other species both wild and domestic. No full study of these remains is as yet available, but they included several specimens of goat from period IA, and deer from an unstratified deposit, probably late. There was no trace of any equines or canines, nor for that matter of any pig. Also two fragments were recovered from Site I E (7) of the shells of a tortoise, but further identification is not available.

A more thorough study of these bones would be most rewarding. Already there are several suggestive features. A number of bones are from animals whose size is notably small, although the bones appear to be those of adults. The probability is that here we have evidence of the presence of two breeds, a smaller, resembling the more lightly built cattle found today in many parts of S. India, and a heavier breed probably used for purposes of transport or traction, such as are today bred in many parts of India for draught and ploughing. Whether the smaller beasts, which are present in comparatively small numbers and which become more common in succeeding periods, are a separate breed, or whether they represent the presence of something like a longifrons element is not clear to me. The following table sets out the percentages of bones of small, normal and unusually large specimens :—

Period.	*Small.*	*Normal.*	*Large.*
IA	2.1	97.9	..
IB	6.3	93.7	..
IC	18.2	81.8	..
II	15.7	77.5	6.8
III	7.14	92.86	..
IV	21.7	73.9	4.4
V	25.0	75.0	..

Another interesting aspect of the cattle bones is their distribution in the skeleton. The attached table shows this distribution period by period and lists for comparative purposes the distributions in the Neolithic levels of the settlements at Piklihal and Maski. The most striking feature is the almost complete absence of horns or horn cores. Otherwise the bones are widely distributed and suggest that their presence at Utnur indeed results from a comparable usage to that of the other sites. What the absence of horns may show can only be a matter of speculation.

H. ASH SAMPLES.

A number of ash samples were taken and are housed in Hyderabad. Microscopic examination of the ash revealed that it included all the varieties met with at other sites, from grey and creamy powdery ash, through partly fused slag of creamy, white and greenish tinges, to highly fused slag. The most highly fused examples came from the ' ash wall ' of the last ash burning period. This may be accounted for by the greater access of oxygen which a raised wall or rampart of combustible material would enjoy compared with a flat highly trampled floor surface. As the identification of the ash as burnt cow-dung was already firmly established by earlier workers, we have not made any further study of this material. The scientific study of the ash was undertaken by Zeuner, while elsewhere we have given a full account of the earlier studies and of the various analysis available for ash samples from other sites.[1]

J. RADIOCARBON DATING.

A sample of charcoal from Site I, square B layer 11a, the dark sticky filling of the shallow cut (excavated as square B 9) and dating from the Period IB of the final report, was submitted to the British Museum Research laboratory in 1959. The sampel bears their reference BM54 (UTN '59). The result of the test was that the sample had an age of 4120 ± 150 years B.P., i.e., 2160 ± 150 years B.C.[2]

1. See F. Zeuner, 'On the origin of the cinder mounds of the Bellary district', *Bull Inst. of Archaeology*, 2, 1959, 37–44; and my *Deccan Ash Mounds* (in press).
2. A preliminary notice was published in *Indian Archaeology* 1958–9, p. 11.

TABLE SHOWING DISTRIBUTION OF BOVINE BONES.

						Axial skeleton			Forelimb			Hind Limb			
Period	Teeth	Skull occipital	Temporal	Mandible	Horn, horn core	vertebrae	Ribs	Pelvis, scapular	Upper,	Lower	Carpel	Upper	Lower	Tarsal	Phalanges
IA	4	2	..	3	..	5	2	1	3	3	5	2	4	8	6
IB	6	1	..	2	..	2	4	..	2	..	4	..	2	8	2
IC	1	..	1	1	..	2	3	..	2	..	3	2	3	3	1
II	1	1	1	1	..	4	5	1	3	2	3	2	5	9	7
III	3	1	..	..	..	2	3	3	4	1	2	2	2	3	2
IV	1	..	..	..	..	..	..	5	2	2	3	2	4	2	2
V	4	..	1	1	..	2	1	1	1	..	..	1	..	1	..
To-tal.	20	5	3	8	..	17	18	11	17	8	20	11	20	34	20

Comparative occurrence of bones of *bos indicas* in Neolithic Settlements, (a) Piklihal, (b) Maski.

(a)	15	4*	2	..	4	1	1	1	1	2	3	2	10	8
(b)	5	2	3	..	12	8	2	6	2	6	2	8	13	2

*Including 1 ethmoid, 1 maxilla, 1 temporal, 1 occipital.

6. INTERPRETATION OF EXCAVATIONS

Evidence is not yet available for the state of climate or natural cover when the Utnur site was first occupied, but at least it may be said that some time before 2160 B.C. ± 150 years the first settlers moved into the area bringing with them their herds of cattle (Bos indicus), sheep and goats. Culturally they belonged to the Neolithic of the Deccan, whose origins we have traced to north eastern Iran, moving down into Peninsular India in a series of waves which as yet we cannot fully trace or understand.[1] It may be reasonably inferred on geographic grounds that, even had there been a rainfall considerably higher than the modern figure, the general appearance of the neighbourhood would not have been much different to its present form. That is to say the site would have been light scrub or open woodlands, upon this gently sloping ground beside a small stream, a source of perennial water. There is no indication of any large settlement in the immediate vicinity, indeed no known Neolithic settlement is less than 30 miles away. The great Tungabhadra river also called Pampa and Daksina Ganga is some six miles away to the south.

Period IA.

The site chosen lay on a small outlier or horneblende schists and pegmatoid gneisses, over which the subsoil was a typical orange-red moorum. The oldest level recognised in the excavations was a sticky dark greenish soil, preserved under later deposits and probably representing the old humus, modified by occupation. (Layer 12 of Site I). This layer produced a small number of fragments of pottery and other debris and had a much puddled surface bearing the imprints of many cattle-hoofs. (Pl. 8a). Thus we may infer that the old humus was also enriched by cattle droppings. The earliest human activity we can trace on the site was the digging of a shallow cut or trench in Site I, some 13 ft. - 15 ft. wide and not more than one foot deep. This cut, it is inferred, lay around the perimeter of an area, part square, part polygonal, about 200 ft. along either side, and marked the outline of a cattle-pen. On the inner side of the cut there survive the last traces of a shallow bank of spoil earth which probably took the form of an earth and thorn fence around the whole area. In the shallow cut itself was found much debris of human occupation, fragments of pottery, charcoal, cattle bones, etc. We infer that this indicates human occupation in flimsy huts *outside* the thorn fence. This period we describe as Period IA. (Fig. 12).

Period IB.

The evidence which succeeds is fraught with problems and its interpretation is no easy matter. The surface of layer 12 is in places extremely hard, almost vitreous,

1. See *Piklihal Excavations*, (1961).

and throughout the later phases of the site such surfaces are invariably associated with a burning. On the other hand in this instance there is no trace of the ash deposits which at almost all other levels accompany such burnt surfaces, and we are faced with the suggestion of a burning followed by a clearing away of the ash from the whole excavated area. In view of this absence of definite evidence we cannot say more about this probable burning, but we may note that the surface concerned is only found inside the shallow cut. From the same period must come the filling of the cut, layer 11A which contained plentiful occupation debris as well as large quantities of fragmentary charcoal, perhaps in part from the burning. The basic constituent of the filling is a red moorum mixture, which probably represents the decay and subsidence of the bank we noticed above. The impression provided by all this is that the whole period was not of very long duration. Immediately on top of the burnt surface of layer 12 is a layer of light loamy soil. Once again we cannot yet say precisely what this soil indicates. It occurs only inside the cattle pen area, generally being found only within the line of posthole line 9, although it also spills over occasionally to trench 8. However, both of these features are slightly later in time, and it is probable that the coincidence springs from the fact that all three coincide with the area contained by the shallow cut. There are two possible interpretations of this layer, either it represents a levelling of the site preparatory to the new constructions we are to note, or it represents an accumulation of unburnt cow-dung. We incline to the former interpretation, for the surface of the layer is extensively burnt and in one place it still contained in a well sealed pocket an accumulation of ash. The probability is then that the layer represents a levelling associated with a low bank and thorn hedge around the perimeter of the pen, on top of which cow dung accumulated to be finally burnt. If so then the inclination visible at one end of the ash pocket in Site I (layer 10) (Fig. 4) is all that survives of this bank. We designate the period thus defined as IB. It is from this period, from layer IB (9) of the excavation, corresponding with I (11a) of the final report, that a charcoal sample analysed by the C-14 laboratory of the British Museum produced the date already quoted.

Period IC.

The next sub-period IC began with the laying down of a thin levelling of light brown soil (layer 9), the surface of which had been much trampled and compressed. From the surface of this layer a double line of post-holes were excavated, implying a stockade of considerable strength. The posts varied from 9 in. to one foot in diameter and they were set at intervals of one to two feet between centres. (Fig. 4b). Outside this line there were traces of a corresponding layer, 9A, which was less trampled and quite unburnt. Here the layer produced some cultural debris, and completed the filling of the shallow cut, which as we have seen marked the first outline of the enclosure. The sequence is now once again extremely difficult to interpret with assurance. It is probable that another structural feature of the same date was trench 8. This followed the same line as the post-holes, but was situated about 10 ft. beyond them. In the bottom of the trench were the clear traces of

further post-holes, generally of smaller dimensions than those already noticed. This trench may mark one of two things : either it was an outer stockade enclosing an area for occupation by humans, or it may mark a further sub-division of the period and a time later than the post-hole stockade 9 when the area of the pen was slightly enlarged. Whichever be the correct reading, and we incline to the former version, the next part of the story is clear. Inside the stockade and to a lessre extent inside the outer trench there is a thick accumulation of ash. This represents a deposit of cow-dung, burnt *in situ*. Our reading is that the earlier stockade was removed and the outer was also at least in part removed before the burning took place and destroyed it by fire. One other feature associated with the surface below the ash was a shallow pit scooped out just beside the stockade. This contained the infant burial already reported. Outside the stockade layer 8A contained a human occupation debris which must correspond to this interior cattle occupation.

Thus Period IC not only witnessed an important stage in the structural development of the site, but it also produced evidence of the first really widespread burning. The ash of site I, layer 8, is of an average depth of 12 in. and a maximum of almost 2 ft. It can be traced and seen as a single vast burning extending over an area of some 200 ft. in length and slightly more in width, in fact throughout the whole site.

Period II.

The next period begins with a levelling layer of yellow speckled make up. This was put down within the earlier perimeter ; it also extended for a few feet beyond in one place, but tailed away in the centre of the site. It achieved its maximum thickness in the outer part of Site II, but generally it was little more than 2 in. in thickness. Associated with the levelling are two more structural phases. First a new single stockade (post-hole line 6) was erected on much the same lines as that of the previous period but a few feet back from the edge of the mound ; while a second outer fence is suggested by a new trench, 7, less regular than its predecessor (trench 8) but following generally the same lines. There is a suggestion that the northern side of the stockade shifted slightly towards the south during this rebuilding, which however the limits of our excavation did not allow us to trace beyond Site I. Trench 7 gives rise to similar problems to those of its predecessor, for in both cases the sealing was irregular; in some places layers were present and in others they were absent and to read the evidence correctly it is necessary to gather the often conflicting evidence and sift it carefully. The intersection of so many trenches and post-holes in Site I makes its evidence very hard to clarify. Over the speckled levelling another ash accumulation, even deeper than its predecessor, gives evidence of a further cattle occupation, followed by an equally extensive burning. Several stray post-holes were noticed inside the main stockade, suggesting that there were subsidiary fences for smaller pens. As in the case of the previous period the area of cattle occupation inside the inner stockade was quite devoid of sherds, etc., while the

space between it and the outer stockade produced a fair sample of human occupational debris, including sherds of pottery, stone tools and fragments of bone, mainly of cattle.

Period III A and B.

The next of these cycles of construction, accumulation and burning introduces certain slight novelties. At the beginning a new cut was made, at least in the area of Site I. This cut away the outer edge of the previous ash, leaving a steep clean bank of about 18 in. The suggestion is that it was intended to outline the site of the new stockade. This was actually situated about 20 ft. south and east of the previous plan. The second stage, which apparently followed without any interval, was to lay down a layer of white flecked make up, probably derived from a similar source to the yellow speckled make up of the previous period ; this layer, which contained odd sherds and other remains, gave a surprisingly even surface to the mound, between 3 ft. and 4 ft. 6 in. above the natural moorum. Outside the line of the new stockade the make-up was also put down, reaching a maximum thickness of 18 in. in Site I, and thus masking the clear cut bank. The reason for this apparently redundant labour is not far to seek, for the new line of the stockade cut down through a thick deposit of loose ash, and the cut would have accentuated the weakness of the new posts. In our excavation of the main stockade trench this problem was again encountered, but in reverse, for it was found to be necessary to leave the consolidating make up, at least below the level of the sealing of trench 4, until the trench had been cleared. The third stage in the process was the construction of trench 4, about 2 feet inside the new cut (already masked). The trench was more regular than any of its predecessors and so too were the post-holes placed along it at regular intervals. The new stockade thus constructed was on a new alignment, which influenced all the later structures on the mound and thus its final form. Inside the stockade there was a second line of post-holes, also of regular alignment and spacing, although tending to alternate between larger and smaller posts, which ran across the eastern end of the pen some 17 ft. from the stockade. Other posts, perhaps of a verandah or reinforcing struts, were discovered about 4 ft. beyond, set at greater intervals. This completed the internal arrangements of the pen.

Outside the stockade a further trench (3) ran, at a distance of 15 ft. along the surface of the levelling. This trench did not give any evidence of post holes but several other interesting features were recorded. First, it was unusually deep and penetrated into the natural moorum. Shallow heaps of this material lay still scattered on the inner bank of the trench. The filling of the trench was a loose debris with plentiful fragments of cattle bones, sherds, etc.; in the lowest levels it contained nodules of stone which had evidently served as the packing for posts. Once again we conclude that this trench represents the line of an outer stockade, and once again the evidence of human occupation, so noticeably absent inside the central pen, is concentrated in this area.

The surface of layer 5 had been trampled hard and bore many traces of irregular pitting from cattle hooves. In places it showed also traces of burning. One curious instance of this was noticed in Site I where a small lower sub-division of the levelling had a hard burnt surface. Whatever ash there may have been associated with these two burnings in evidence at this point had however disappeared ; and the only definite deposit of ash on this level, sealed by the next levelling was of a series of small packets in Site I. Taken together these several indications make it abundantly clear that there were burnings of some kind on the surface of both phases of this period.

Period IV.

Period IV opens with the final levelling of the site. This was of a new kind. A layer of brown stickly clayey soil was put down, around the perimeter. In the centre of the mound it was absent and in site II it only appeared in the outer end of the trench. The soil also appears in a thin attenuated form upon the surface of layer 5 outside the perimeter. On the crest of the bank the clay reaches a maximum thickness of c. 18 in. It then forms a distinct band running around the outer edge of the mound. The surface of the layer is in places greatly scratched and broken up by recent ploughing and digging, but where it is intact it appears as a very hard, trampled, greeny-brown substance of almost glassy quality. It bears ample traces of burning and in places has small pockets of ash lying undisturbed upon its surface. These pockets have however survived for the most part in protected places where they were sheltered from recent attempts to clear them. The principal occurrence is in Site III, where it is protected by the spoil from the recent well digging operations. Under this spoil there is a thick deposit of hard vitrified ash resting upon the clayey layer. The ash here is more than 3 ft. thick. Clearly this explains the slightly saucer shaped appearance of the mound, for in this final stage of its life, the accumulating ash was evidently heaped up around or upon a thorn fence—of which traces remain upon the undisturbed parts of the slope—and contributed towards a wall of dung which, at a certain date, was fired to form an *ash wall.* Thus in its final form the ash mound was converted into what Foote called a ' Cinder camp.' Fortunately the clayey layer produced a quantity of sherds and other remains, mainly from the outside of the ash wall, and these enable us to date the final ash accumulation period. The remains are still, with little modification, of the Lower Neolithic types of Piklihal. Possibly of the same date, or somewhat later was the trench 2 which ran around the outer slope of the mound some 30 ft. from the clay bank. This too contained only Neolithic sherds, although in its sealing later pottery was found.

This brings to an end the ash accumulation and burning cycles. We have noticed evidence of five major and two other conflagrations as well as numerous hints of smaller, more local burnings, of which the last carries a final clue to the nature of the ' cinder ' camps. We shall return to the question of the burnings below, but first we must conclude the history of the site.

Period V.

Over most of the site above the final ash deposits there is a depth of soil of between one and two feet. As the mound has only been brought into cultivation in recent times and as the well formed humus continues unaltered under the loose spoil from the recent well digging, it may be assumed that this whole formation, although now mixed and disturbed, is ancient. This is borne out by the various early historic trenches which we must now record, all of which were dug from below the modern humus, but on the surface of layer 2, the typical sub-humic soil of the region. In other words there is a strong suggestion, supported by the pottery and other finds, that the ash mound was abandoned for a very considerable period of time before the early historic activities which we shall notice. The first new feature, which began after the mound was abandoned and continued sporadically throughout its subsequent history was the arrival of porcupines and other burrowing rodents. The activity of these animals brings with it another interesting piece of evidence : it seems that during the Iron Age the site was used for camping and although no deposits of that date are found on the surface nor are any pits or trenches of that date so far recorded there, the sherds of typical Iron Age pottery which they dropped found their way into the burrows and were discovered during the excavations. At first these deposits gave rise to some confusion as they were often snuggly buried beneath earlier sealings, but in every case where such nests and burrows were tracked through the real answer was the same.

At the beginning of the Christian era when Ij perhaps assumed for the first time significance as a market village several small hamlets appear in its vicinity. One was noticed on the bank of a stream near the Ij mound itself, and another is implied by the scatter of pottery of the period in the fields to the south of the ash mound. This settlement also touched the mound, for a trench and several post holes and pits were noticed, cut from immediately below the humus. The cultural remains associated with these pits allows them to be dated with some certainty, and although the excavation was not extensive enough to determine the form of any structures, etc., it adds evidence for this chapter of the history. From the same date are a number of tunnels evidently the work of human hands which appear to indicate that the ash was sought after for some purpose perhaps to grind for white wash. Thus in site III a tunnel of 4 ft. in height ran under the ash wall, while in site II a great pit of even greater depth had removed considerable quantities of ash. It is not certain whether the smaller tunnels associated with this pit are of human or animal origin, or both, but they are all dated by the finds. Finally the latest evidence of digging of this kind, whether human or animal is immaterial, is contained in Pit IL where a single sherd of medieval pottery was found in a burrow only a few inches above the earliest floor of the Neolithic cattle pen.

The last chapter in the history of the mound opens with the excavation of a well just beyond the south west corner and the deposition of the loose spoil upon the west side. This spoil had every indication of being of recent date : certainly it was later than the early historic sherds sealed beneath it in a burrow in site II, but it was evidently also earlier than the bringing of the mound under the plough. This as we have seen is the product of the last century. Since that date the cultivators have systematically destroyed the ash wall and dug up the other ash deposits associated with the final burning. These events bring the story to an end.

7. CONCLUSIONS

In the *Deccan Ash Mounds* I have considered the Utnur excavations in the wider perspectives of exploration and ethnographic evidence. I do not propose to repeat this part of the story here but some summary of our conclusions may not be out of place.

In the light of reports of about forty other ash mounds Utnur can be seen to belong, in every way, to that group which Foote named 'cinder camps.' On the other hand this aspect is only evidenced by the ash wall of period IV, and in its earlier history it would no doubt have belonged to the wider group. There is also a surprising similarity in the kind of stratification revealed at the few other sites from which adequate evidence is available. Indeed, although at Kudatini the depth of the strata tends to be much greater than at any other sites, there is also apparently some correlation between the number of burnings, i.e., periods of occupation, and the life of the several mounds. Again with certain exceptions the general size and plan of the sites is not much different from that of Utnur. This being so it is reasonable to infer that the other ash mounds belong to a single cultural complex and represent similar activities to those which produced Utnur. The distribution of the sites is also not without its interest. About half of them appear to be actually in or beside permanent Neolithic settlements, while many if not all of the remainder are notably far removed from such settlements in areas which in some cases to this day are forested. This has led us to infer that the two kinds of sites may preserve evidence of a seasonal migration of herds of the sort which is still today found among pastoral groups in India. Another interesting speculation is raised by the size of the mound. If the area which we have been able to calculate for the several periods of cattle-pen construction at Utnur is known then it should be possible to form some estimate of the numbers of cattle to be kept inside the pens. If we accept as probable that the modern traditional density of herding cattle in this part of the Deccan is the best guide to that of the Neolithic period, then we arrive at figures of between 660 and 800 beasts, at maximal size and 540-650 at minimal. A much more difficult problem is that which concerns the time intervals between burnings and the time needed to accumulate dung in such quantities as to produce a given volume of ash. We may conclude that the latter attempt is not likely to be successful because the number of possible variables and unknown factors is too great ; but the former demands some attention. If we suppose that a given depth of dried dung would result in a given depth of lightly burnt ash, then it sould be possible to reach some minimal time period for such an ash deposit. In fact dried cow dung loses density rather than volume in firing at lower temperatures, and it is only at higher temperatures, when glassy slag formation is in evidence, that shrinkage becomes quite unpredictable. Thus a deposit of about 18 ins. of lightly burnt ash could well result from a dried dung deposit of not more than 2 ft. If we compare the depths of compressed dung left in the

floor of a forest pen today ; admitting that the dung has been accumulated under conditions as near as possible to those we infer for our Neolithic pens ; then we may obtain a very rough guide to the time required for the ash deposits at Utnur. The result is suprprisingly modest. There is seen to be no impossibility in any one of our ash deposits having accumulated in a single season, while allowing for the many factors which may minimise the time period, an interval of five years would appear to be a reasonable average. However, we have no information of whether the ash represents a single season's deposit, or the deposit of several seasons, nor whether such season's were consecutive. We have also no very reliable means at Utnur for calculating the intervals between the periods of occupation. Bearing in mind the closeness with which the plan of the stockades was repeated in several structural periods, it is reasonable to postulate a fairly short interval, in these cases at least.

The absolute chronology of the Utnur mound is still somewhat vague. The radiocarbon date of c. 2160 B.C. provides an indication of the date of the early occupation. There is as we have seen no very clear evidence that any part of the cattle occupation at Utnur extended into the Upper Neolithic (using this term as it was defined at Piklihal), although at some of the other ash mounds there is clear evidence that the upper levels belonged to this period. Thus we may conclude that the occupation was here finished before c. 1250 B.C. Thereafter the site appears to have been abandoned until a series of pits and burrows, the earliest of which can be associated with some sort of temporary occupation during the Iron Age, began. The pitting and burrowing continued into the early historic period when, we have seen, in the first centuries of the Christian era, permanent occupation began in the neighbourhood, and trenches, perhaps betokening a continued use of the site as a cattle pen—but without any ash formation—began.

Thus far we can see that the evidence of our excavation is perfectly consonant with the ash mounds being the sites of Neolithic cattle pens. Modern pastoral practice in Central and Peninsular India can provide many parallels to forest pens and to the sort of seasonal migrations which we have postulated. So too can it be inferred from the Tamil Sangam literature, particularly *Pattu-pattu*, that the Ayar or pastoral communities of that time enjoyed a life which reflected many common features. But our inferences seem to end in a blank when we begin to enquire into the motives which lay behind the vast conflagrations of which the ash mounds are the relics. In what way are we to explain the repeated burnings ?

It appears to us that the evidence of repeated burnings at so many similar sites rules out all question that the ash resulted from accidental fires. In the same way the possibility of spontaneous combustion is excluded. The conclusion reached is that the fires were purposeful. We may next consider the possibility that the mounds were the outcome of the firing of stockades by warring tribes engaged in cattle raids. Had the pens proved so vulnerable on a single occasion this explanation could be considered, but when the burnings at a single site are repeated then it

becomes much less likely. We feel equally confident in ruling out Sewell's theory that the mounds represent the sites of vast funerary holocausts. Had they been so we might expect to find some human remains as evidence thereof ; while all that is known of the burial customs of the Neolithic inhabitants of the Deccan indicates that they practised exclusively inhumation. In the *Deccan Ash Mounds* we have also considered in some detail the various theories of the burnings resulting from some industrial work. The view of Woolley and others that they were iron smelting sites is absolutely excluded by their Neolithic age ; and we have found that all other attempts to link them with metallurgical processes, including copper and gold smelting, are equally unsatisfactory.

Bruce Foote states that he gave much thought to this question. His ideas, as we have seen, go far towards arriving at a satisfactory answer. He inferred that the mounds were the sites of cattle pens where the dung was allowed to accumulate and he concluded that in a hot and dry climate the dung would become liable to take fire, unless purposely extinguished. If the accumulations were allowed to go on for generation after generation then ultimately the time would come when a fire would break out. He wrote : seeing how careless the lower classes of natives of India are about fire nowadays, it may not be too hazardous to assume that their Neolithic ancestors were equally so and that the conflagrations were not a rare occurrence.[1] He went on to point out that such conflagrations might not be wholly undesired as they would leave the site clear and well drained, while the surrounding black cotton soil became during the rainy season a sticky quagmire. We wholly agree with this view, for if a practical explanation is to be sought for the burnings it must surely lie in this direction. The great accumulations of cow-dung might also become sodden, while harbouring vermin. As the posts of the stockade grew old and rotten they would start to give way and fall out into the outer stockade where the men resided. A swift and sure way of preparing the site for a rebuilding and of providing a clean, well drained base for it, would be to burn the whole structure, together with the accumulated dung. This rational explanation goes far towards answering our question, but we do not consider that it carries us the whole way. We cannot accept Foote's explanation that chance and carelessness alone could have been responsible for the start of the fires.

Thus we have sought, in the *Deccan Ash Mounds*, to show in surviving traditions that a further explanation is possible. There is throughout India to this day a great range of cattle rites associated with pastoral and agricultural festivals. These rites are linked to others which extend throughout the Old World. In particular we have found evidence of cattle bonfires or Needfires being regarded as prophylactic in time of disease. These bonfires have frequently become associated with great points in the pastoral or agricultural year. We have shown that in India three festivals in particular are of significance in this way, they are *Holi*, *Divali* and *Pongal*. In all these festivals cattle and fire are found to play a part, among pastoral groups even a leading part. A minor theme links a fourth festival, the *Pola* of Central

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India, with its *Margapali* rite. In particular the third day of *Pongal*, the *Mattu* or cattle *Pongal*, appears to be significant for us. Among the Gollas, who more than any other group preserve the geographical environment and material traditions which we have discovered to belong to the Deccan Neolithic, this *Pongal* becomes the great festival of the year. A great bonfire is lighted outside the village and the cattle are driven through the ashes of the fire.

Thus our present view is that the motives behind the ash fires were of several different kinds. First the dung was allowed to accumulate because there was at that time no practical use for which it was required. Then the time came when dilapidation of the stockades made it desirable to rebuild. The complete burning of the pen, stockades, accumulated dung and all, would be an excellent preparation for remaking it upon a clean, drained base. The start of the seasonal migration would be the obviously ideal time for such a burning as there would be several months during which the fire could exhaust itself and the site cool. But the starting points of the seasonal migrations, in whichever direction, would also be those points of the year at which important religious celebrations took place, and if—as we may now confidently assert— our Neolithic pastoralists were not cut off from the main streams of cattle keeping tradition wherever they manifest themselves in Eurasia, then the presence of cattle bonfires and Needfires at such times would be not only in order, but even demanded. Thus the favourable material basis provides a justification for folk religious practice of this kind. In view of the continuity which we have repeatedly found between the culture of the Neolithic pastoralists of the Deccan and modern groups in India, it may also be not unreasonable to infer that the modern *Pongal*, *Holi* and *Divali* ceremonies contain, along with other traits deriving from other streams of culture history, traits deriving directly from their culture.

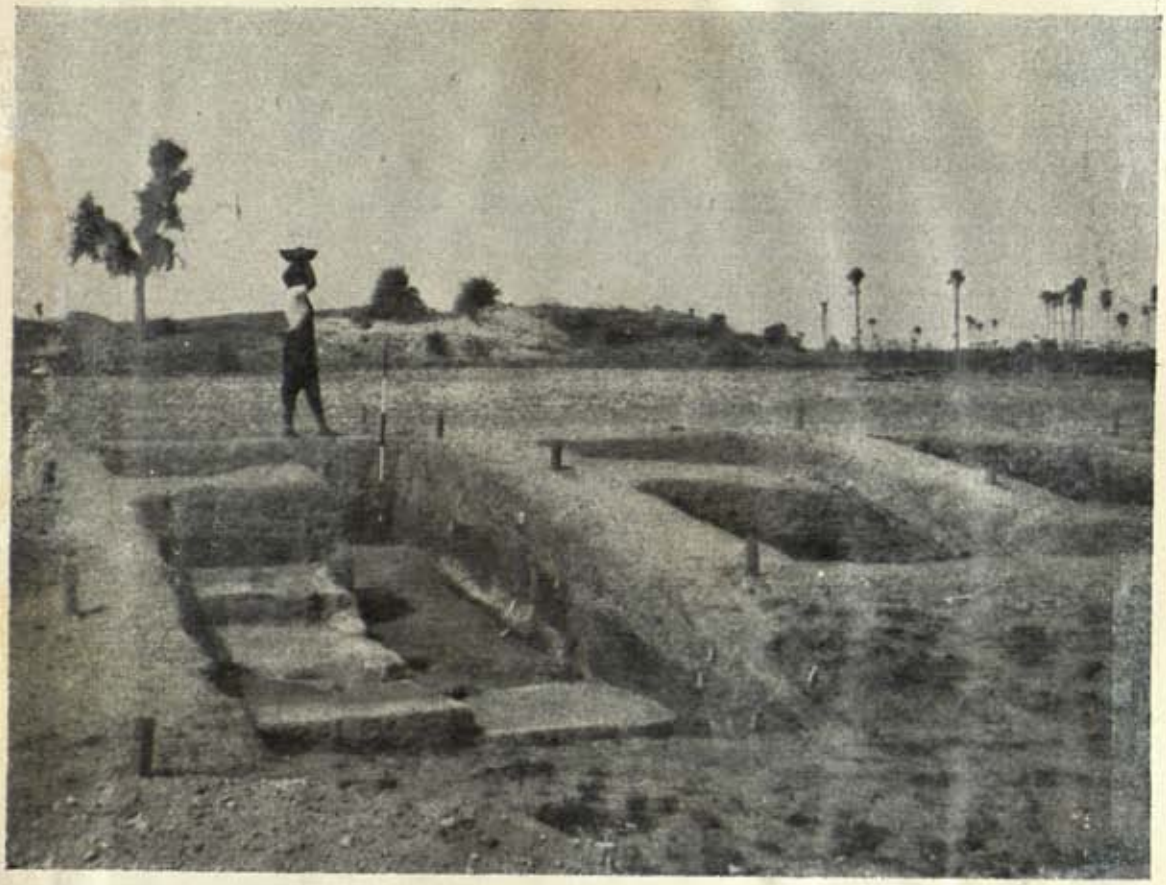
(a) View of stream near site.

(b) Utnur ash mound from north-east.

PLATE 2.

(a) Martandesvara temple, Ij.

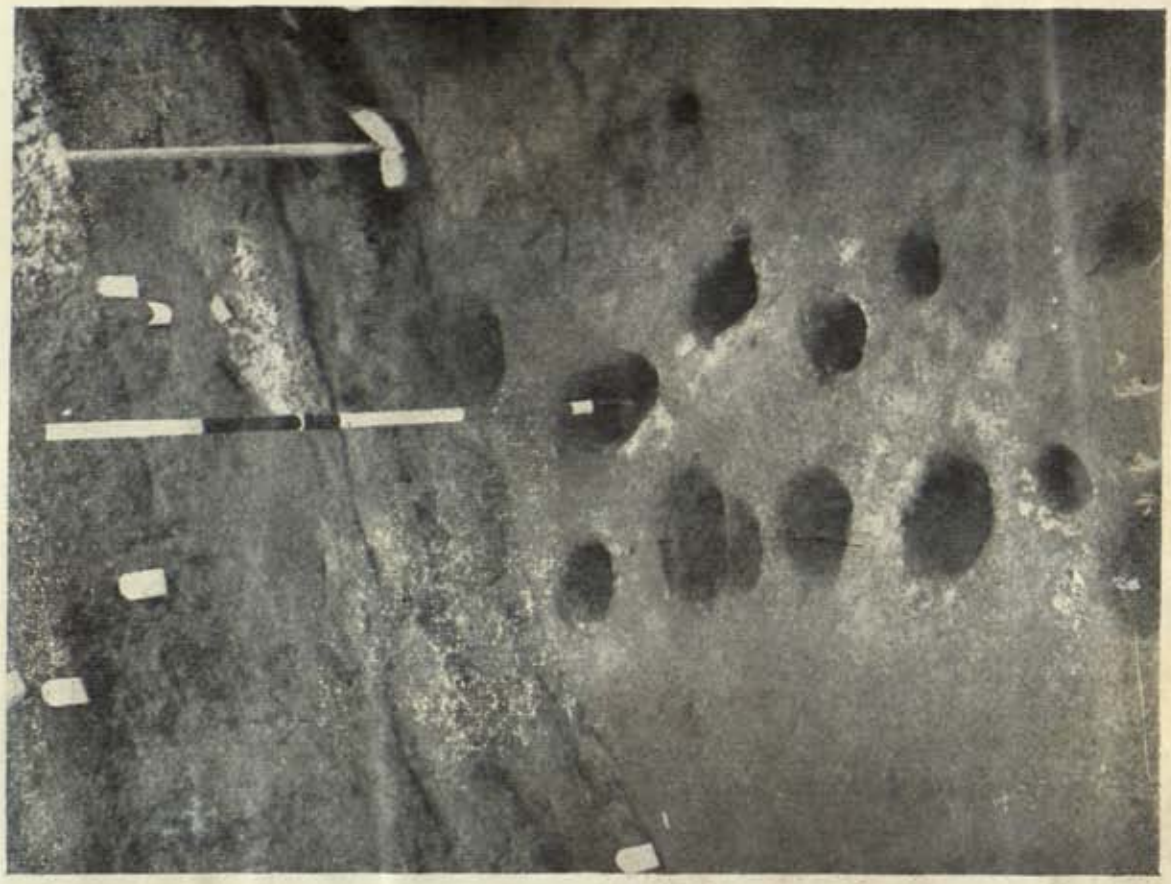
(b) Surya icons from temple.



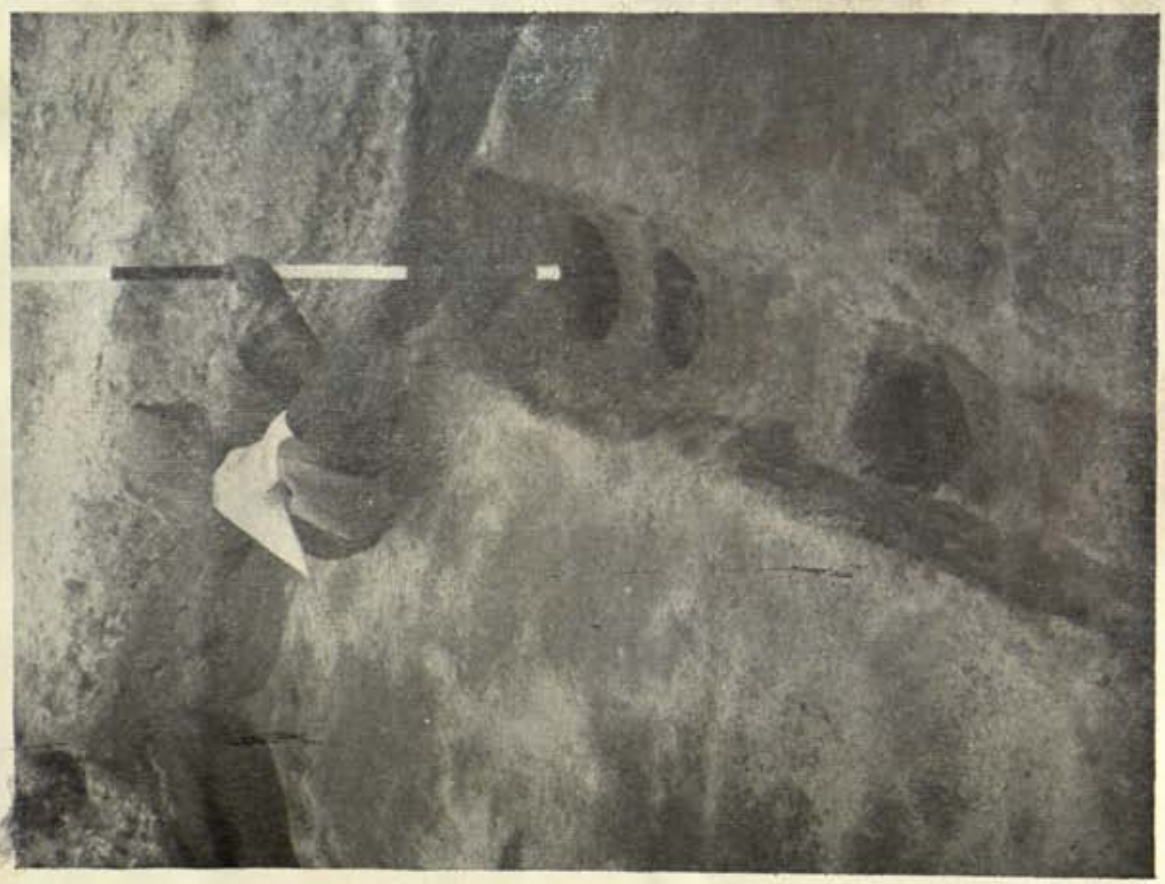
(a) General view of Site I.

(b) Site I, square E, section of post-hole trench 4.

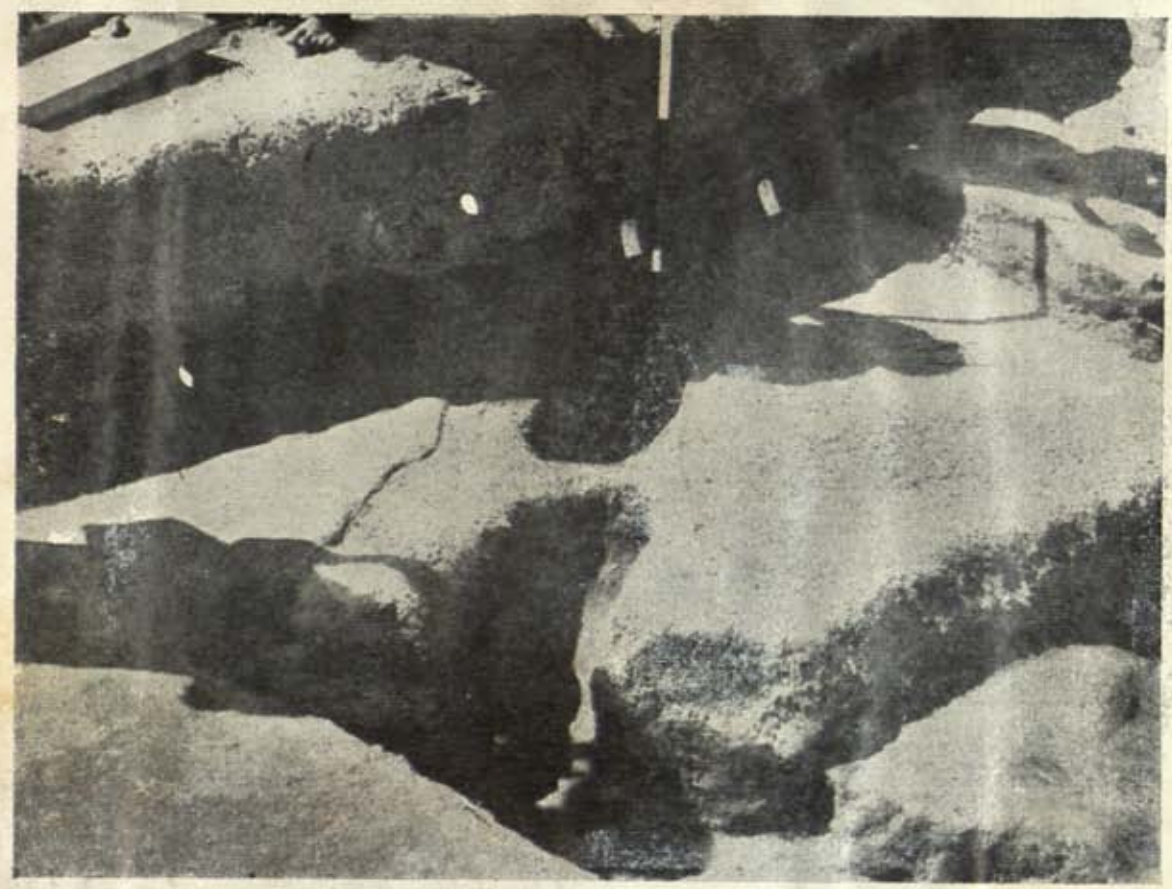
PLATE 4.



(b) Site I, post-hole line 9.

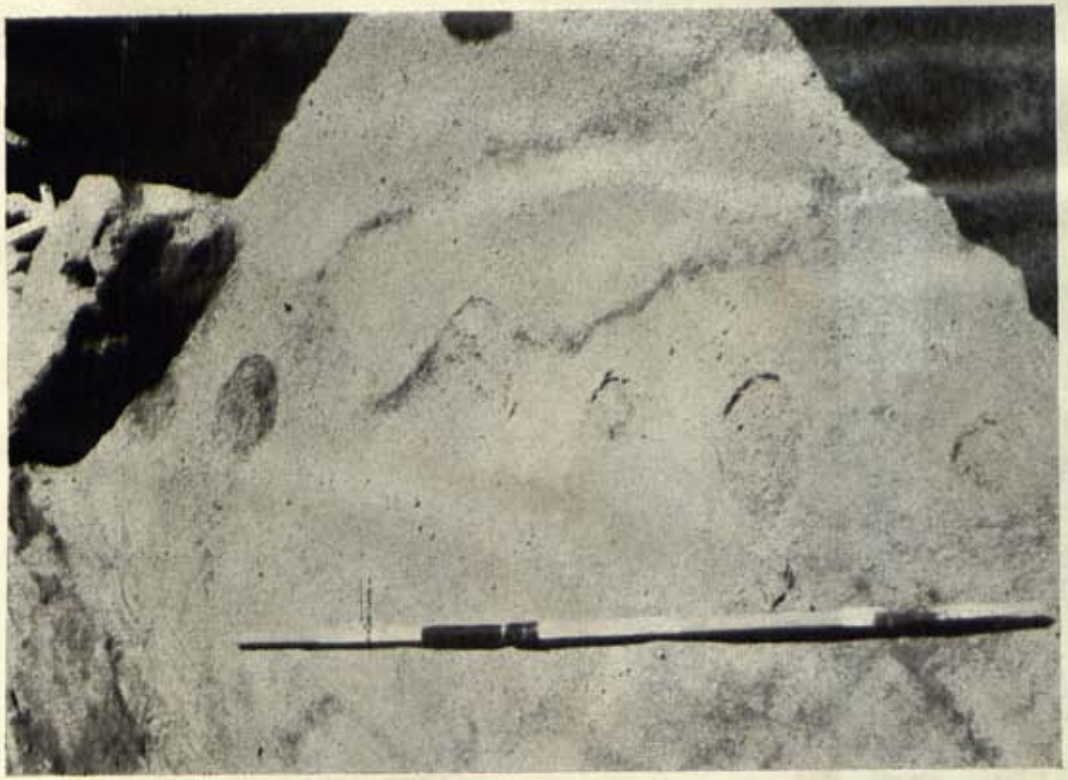


(a) Site I, post-hole trench 4.

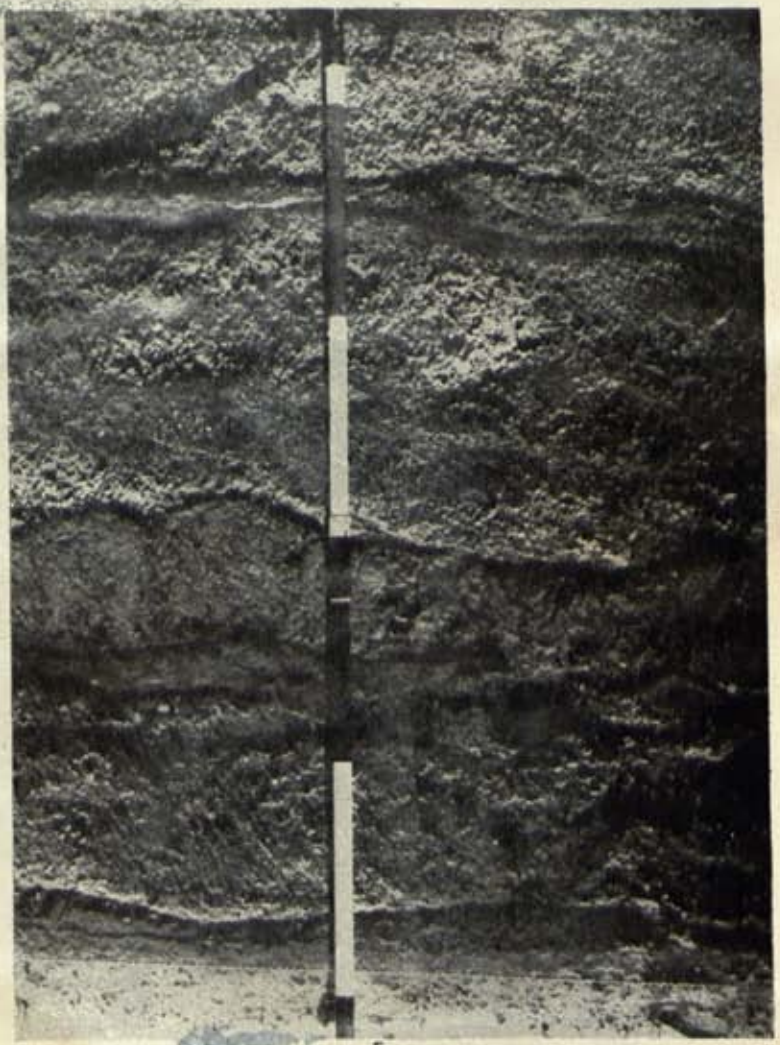


(a) Site I, post-hole trench 4, square B.

(b) Site I, infant burial.



(a) Site I, post-hole lines 5 and 6.

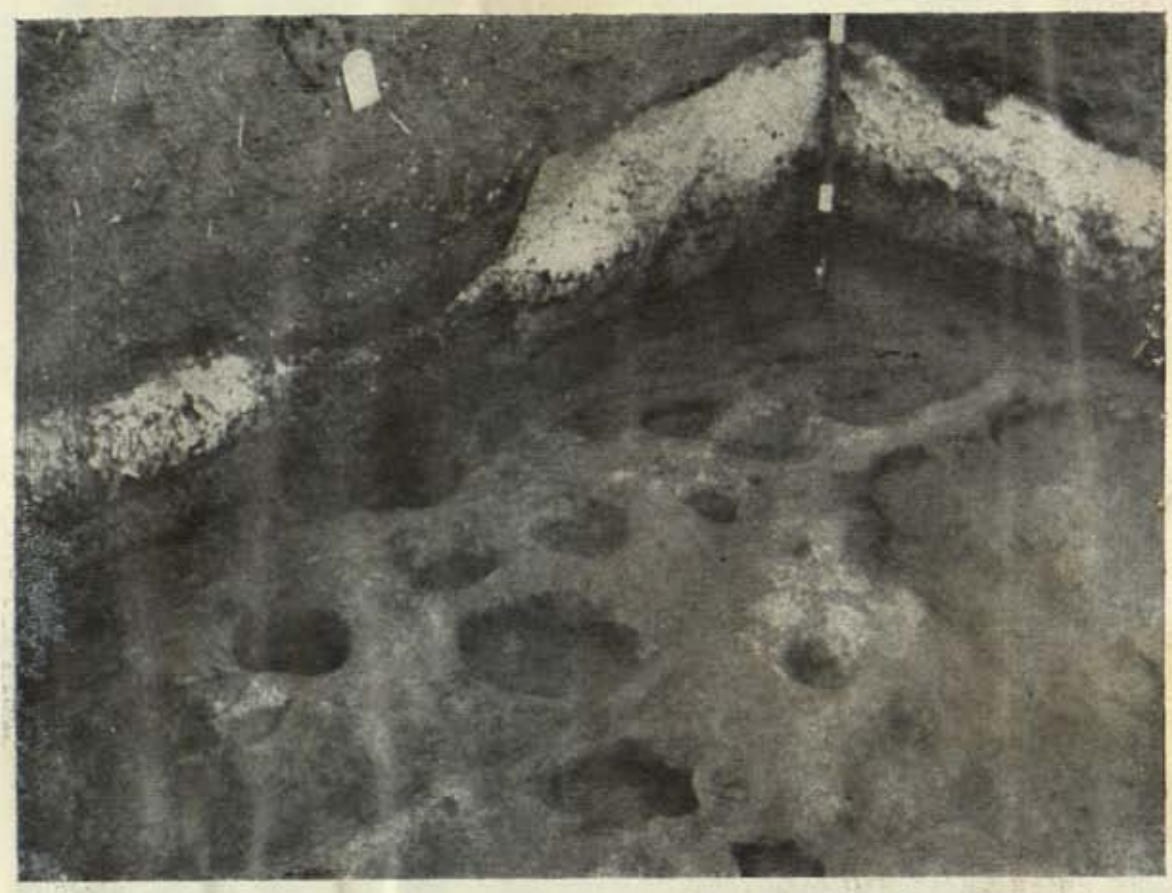


(b) Site II, section through ash deposits.

(a) Site II, general view

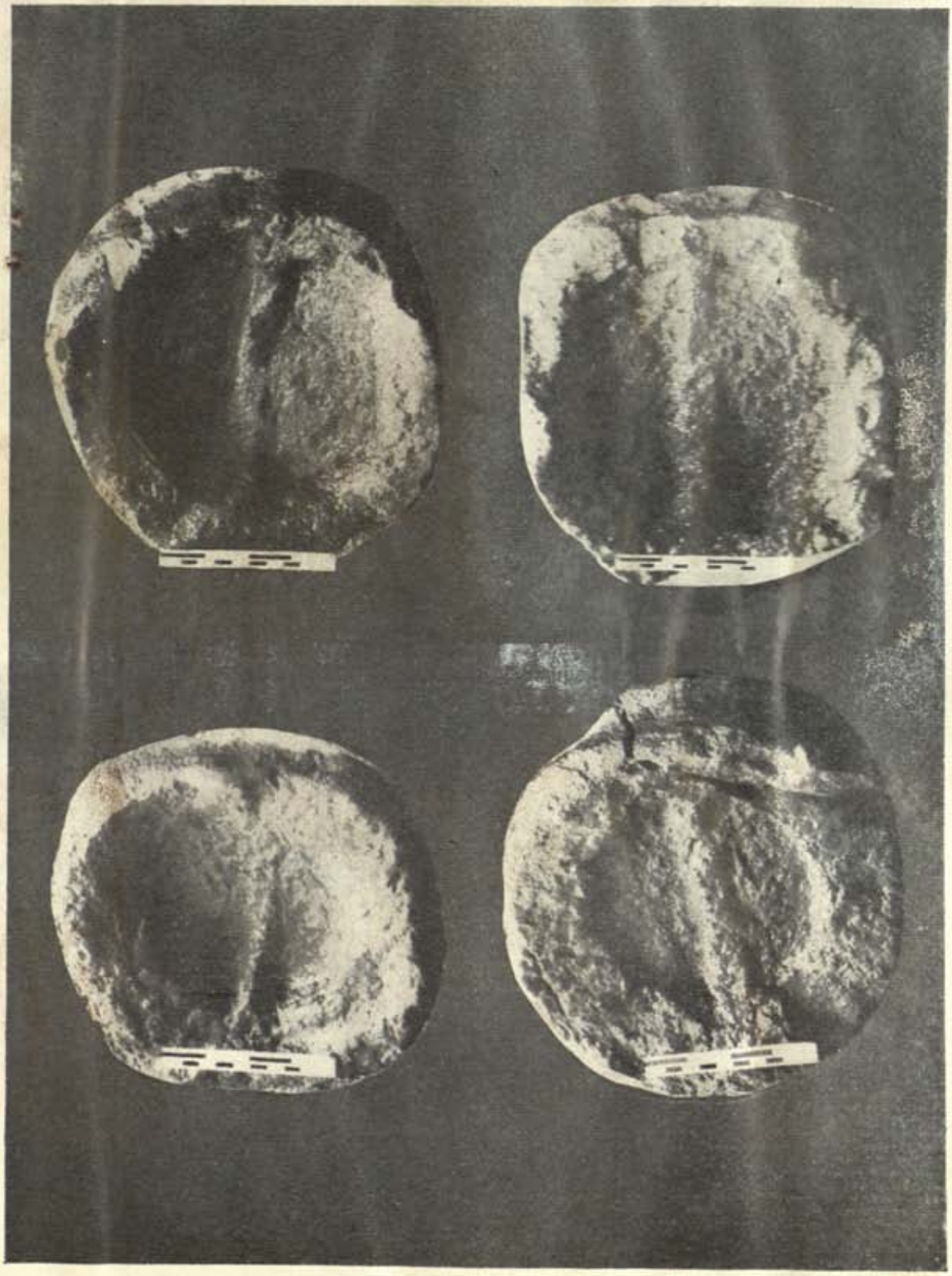
(b) Site I, Square L, animal burrows.

PLATE 8.



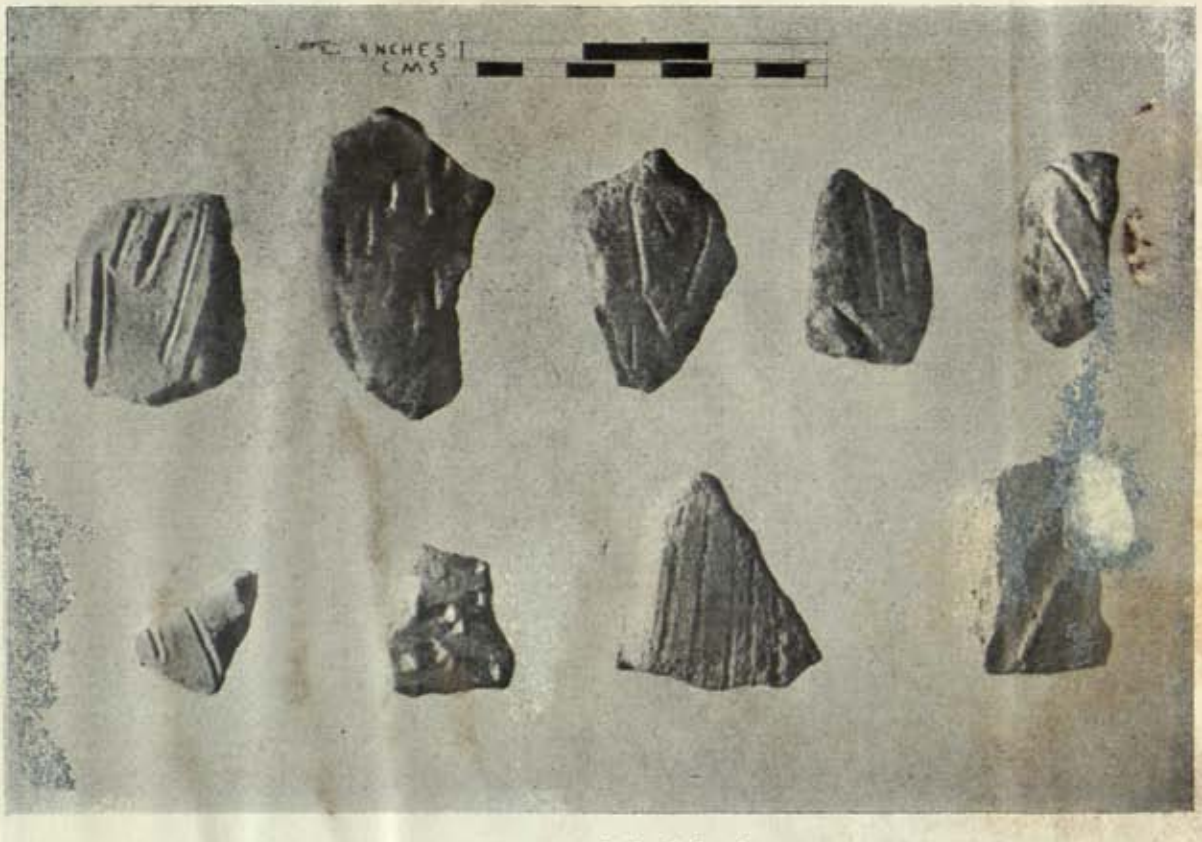
(a) Site I, square L, floor with hoof-impressions.

(b) Preparing impressions for liftings



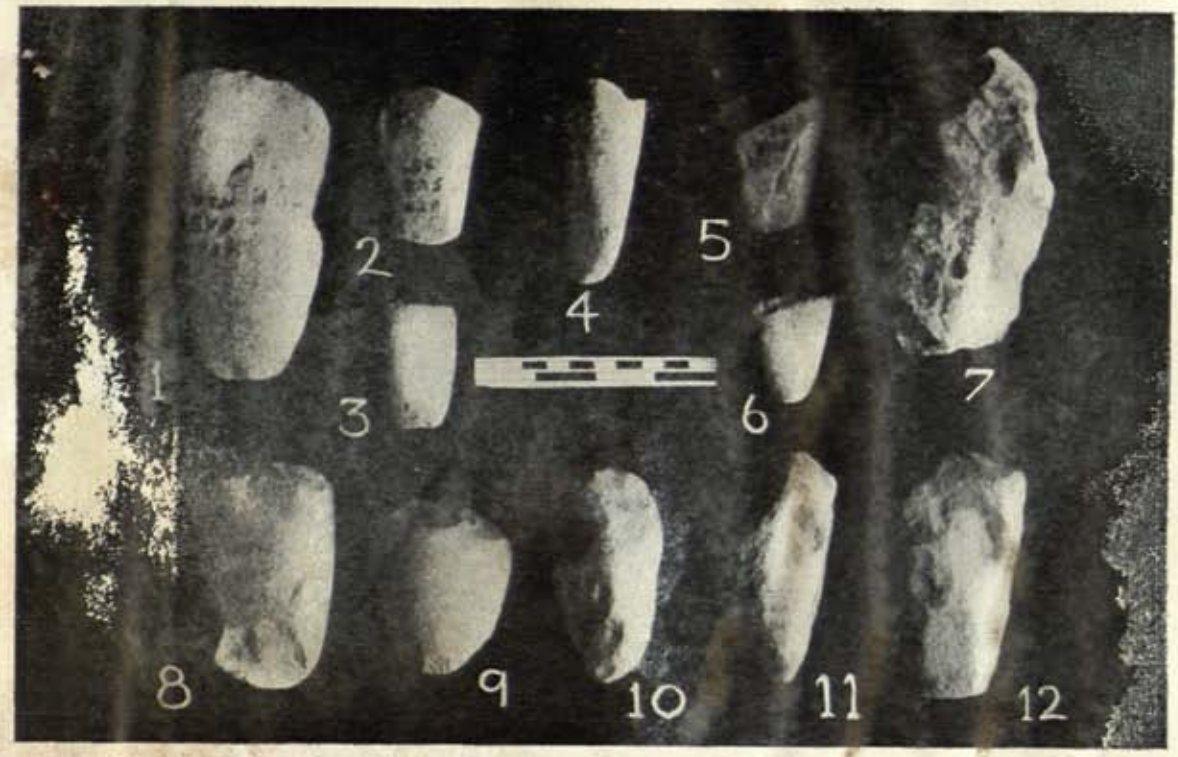
Hoof impressions after lifting.

PLATE 10.

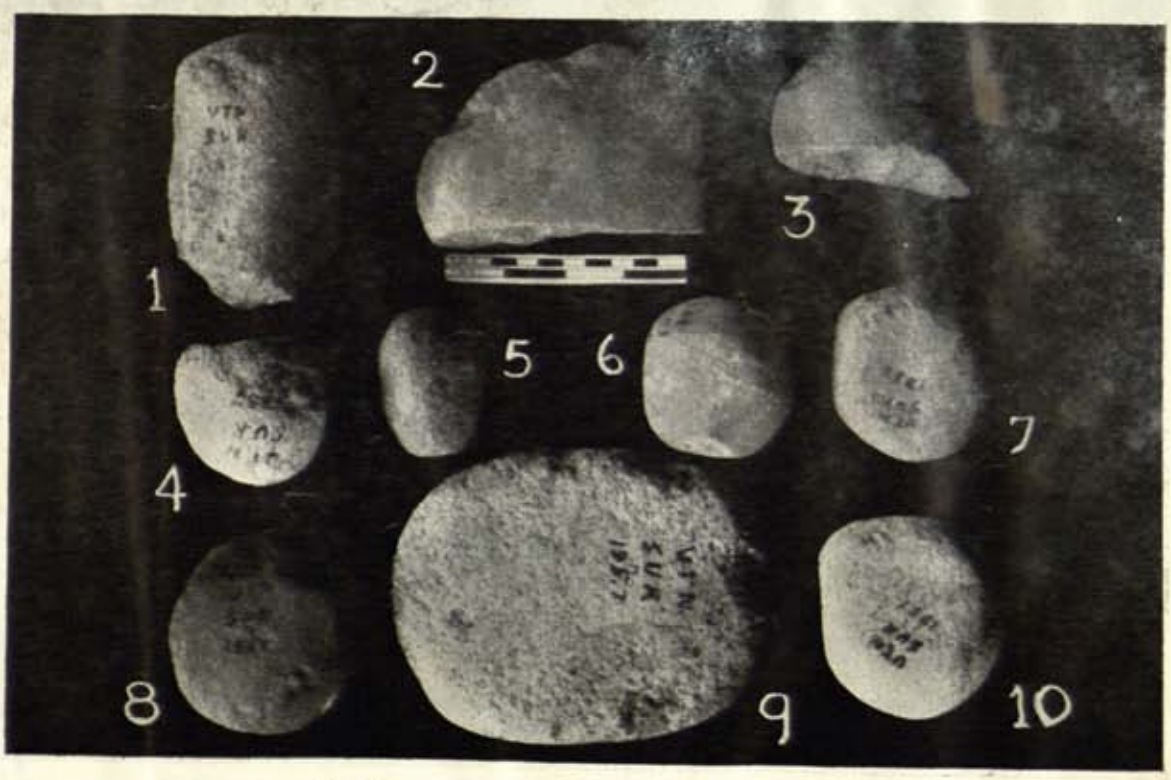


(a) A ware, incised sherds

(b) B3 ware with painted rosette

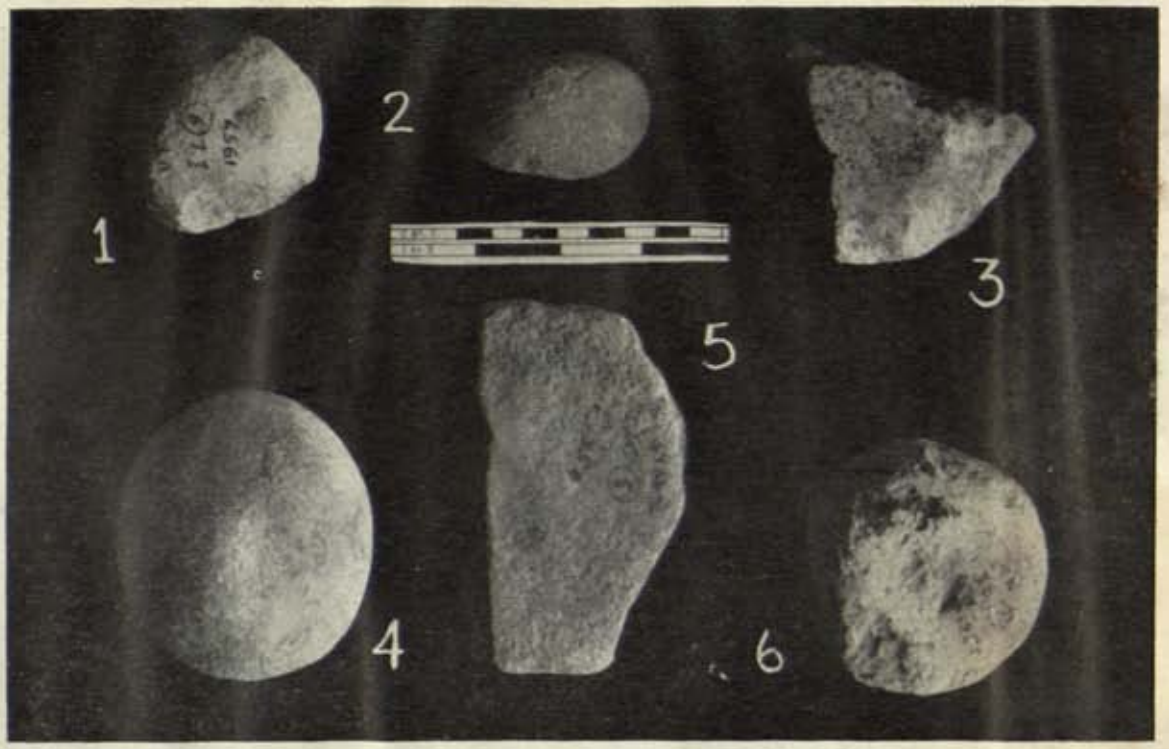


(a) Stone axes from surface collection.

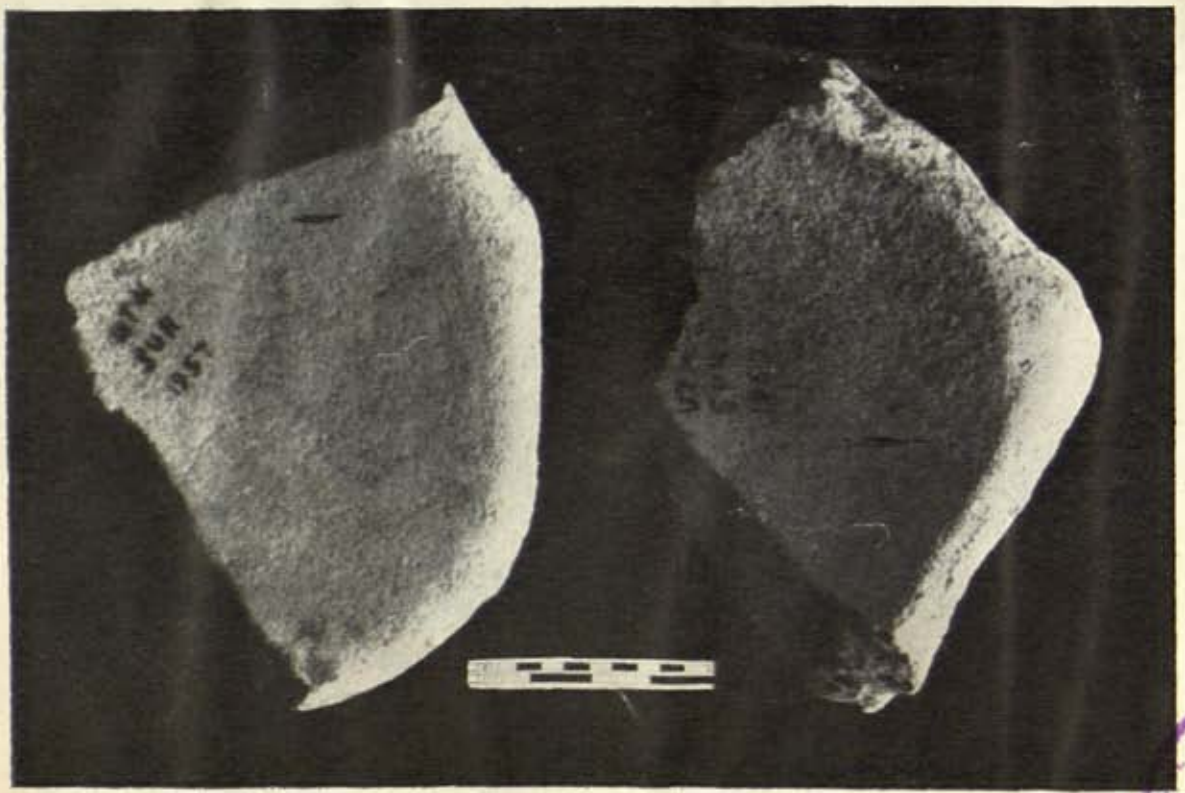


(b) Ground stone tools from surface collection.

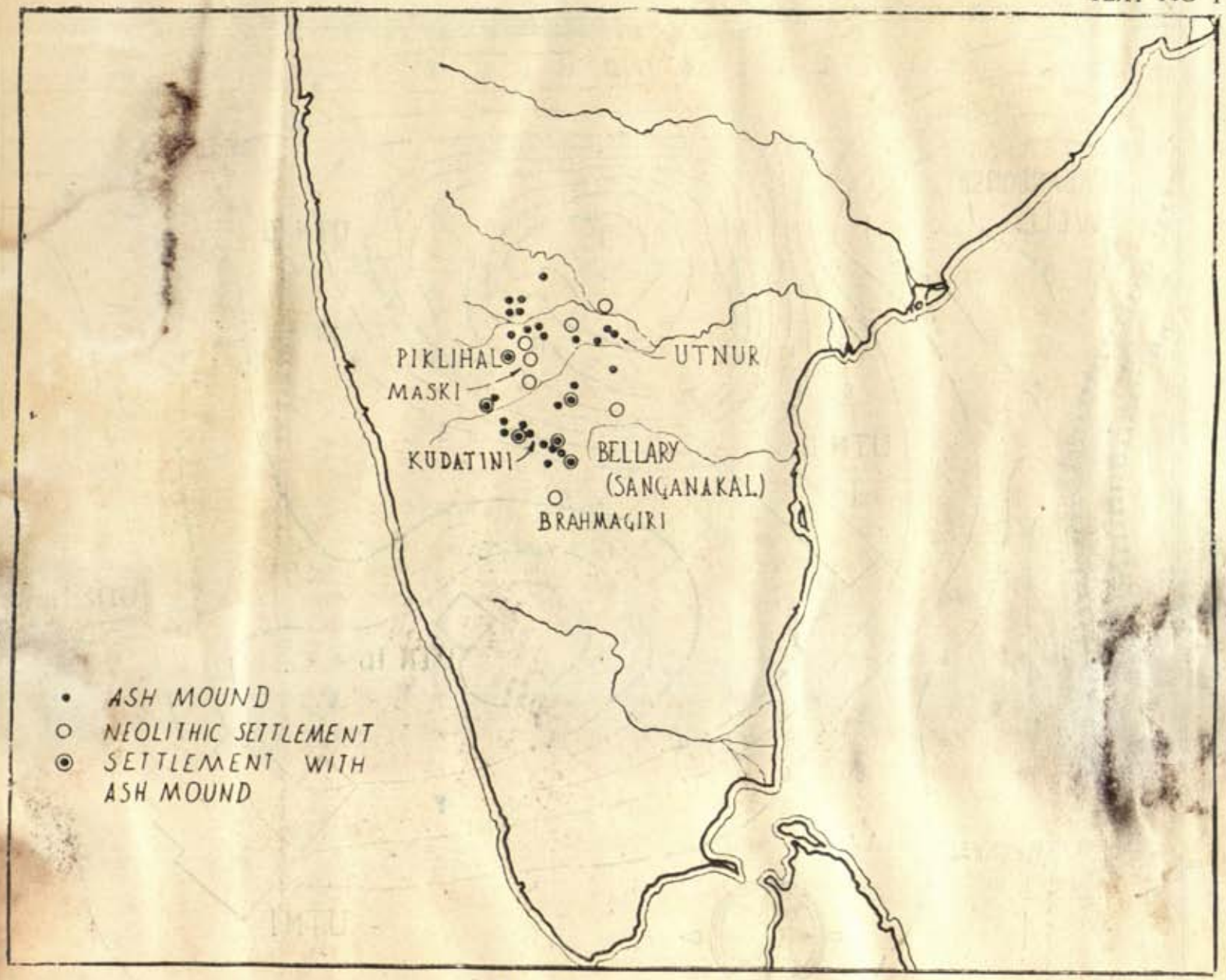
PLATE 12



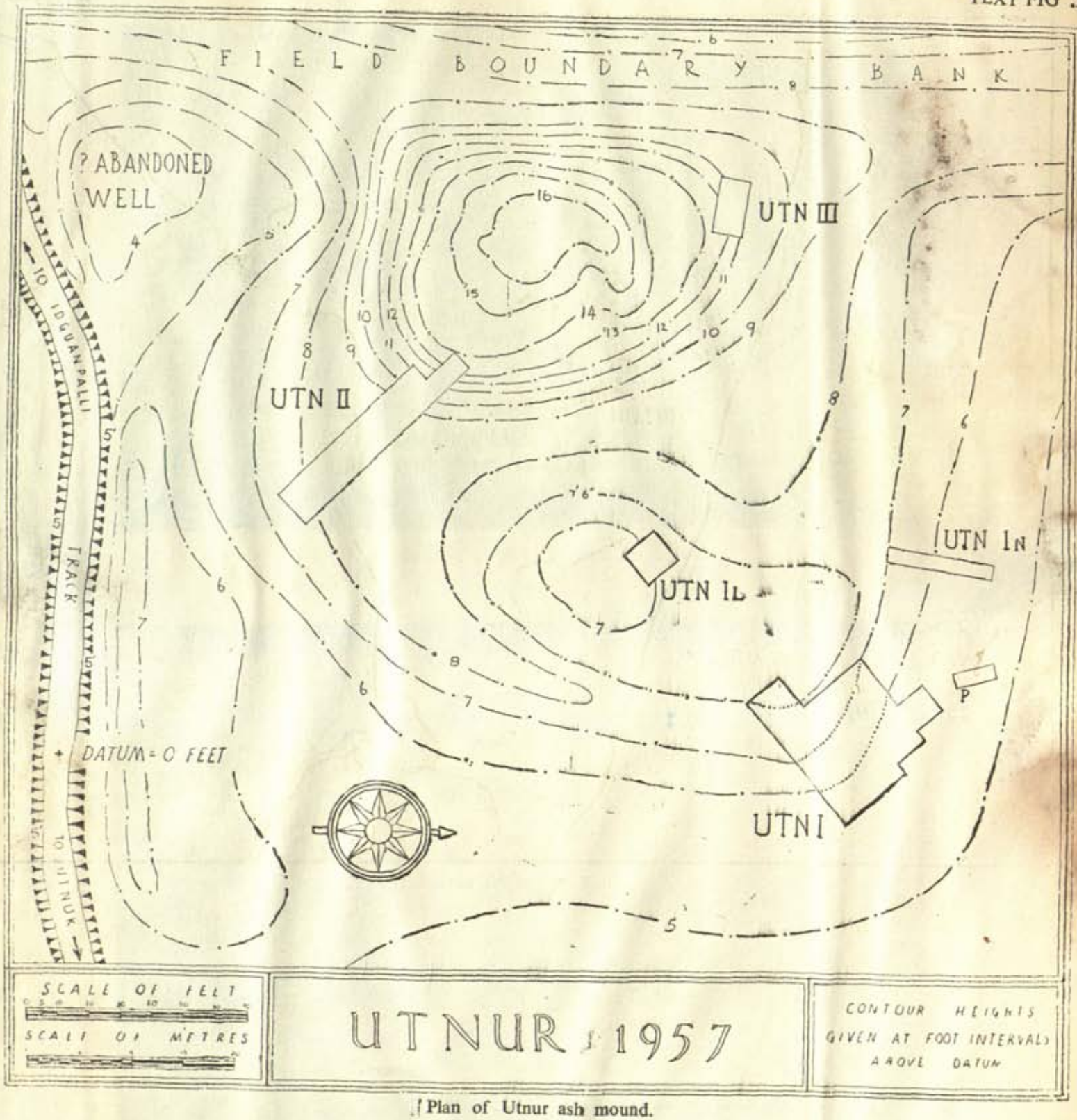
(a) Ground stone tools from excavations.



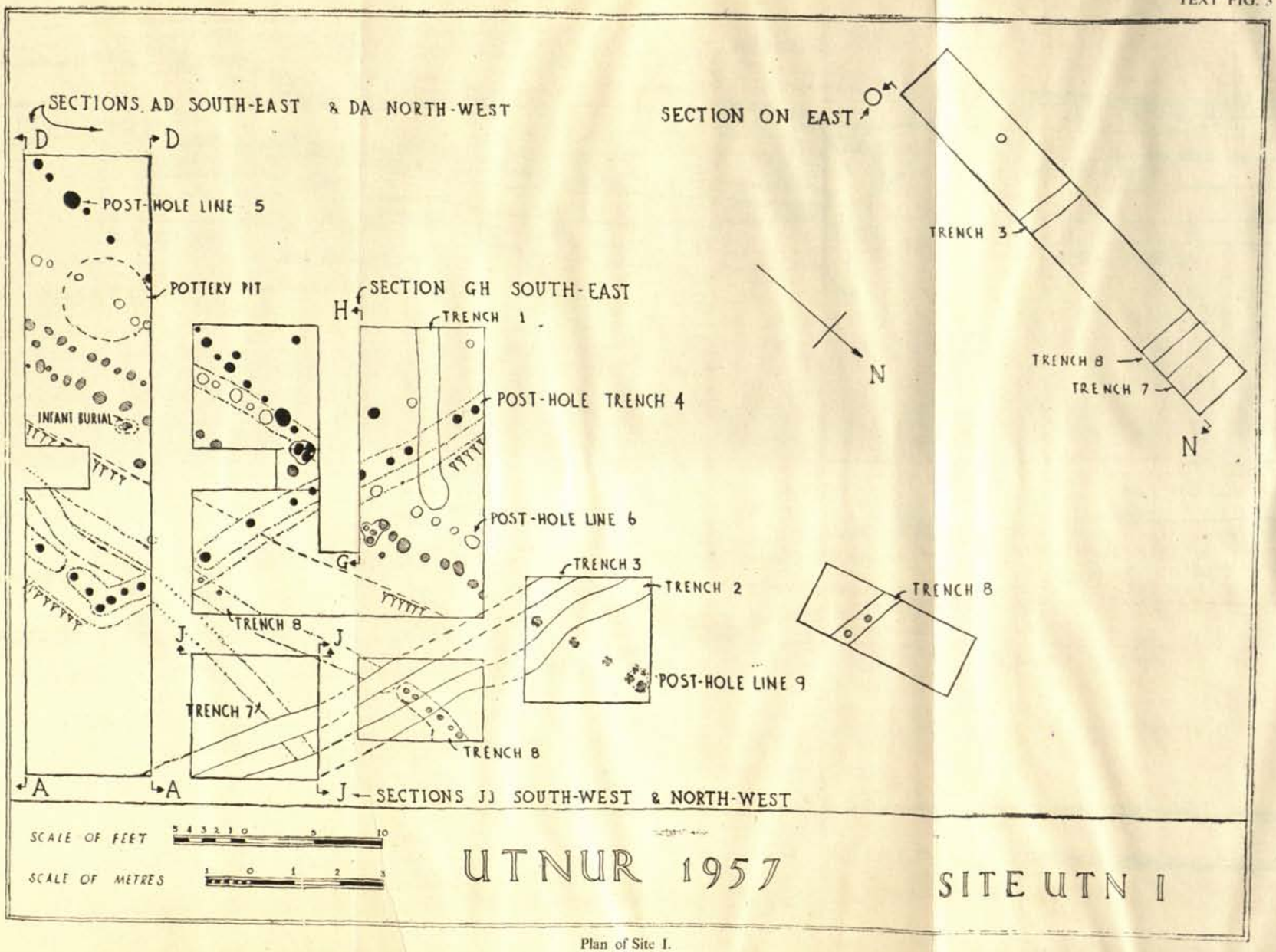
(b) Fragments of granite querns from surface.



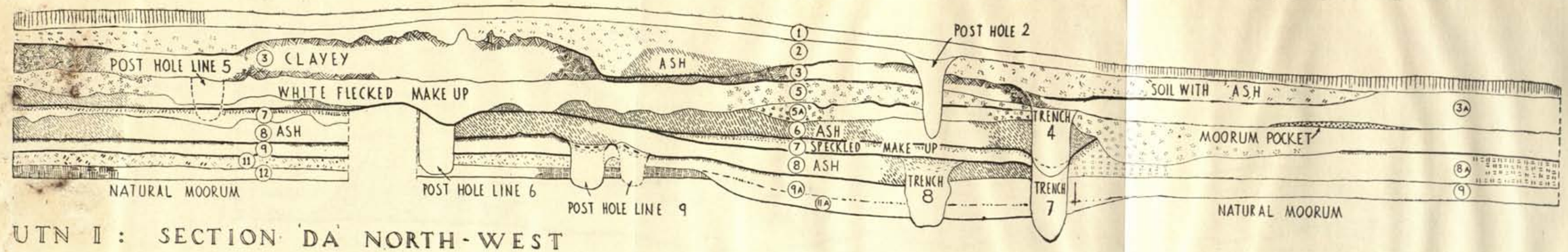
Map: Sites of ash mounds.



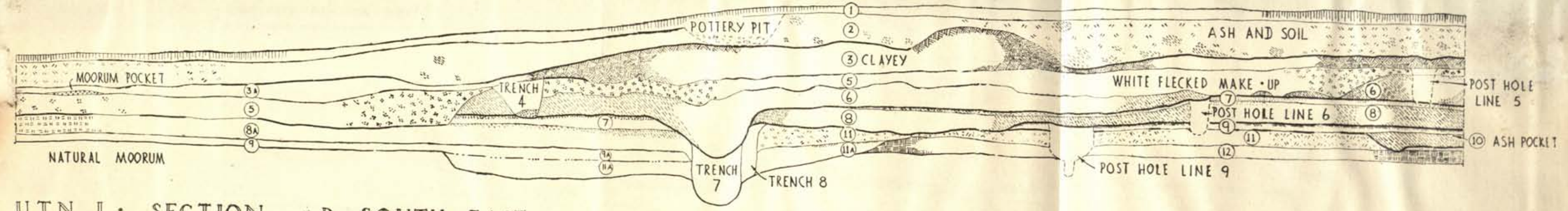
Plan of Utnur ash mound.



Plan of Site I.

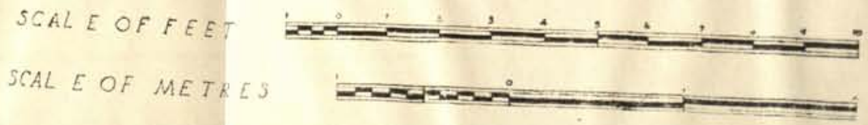


UTN I : SECTION DA NORTH-WEST

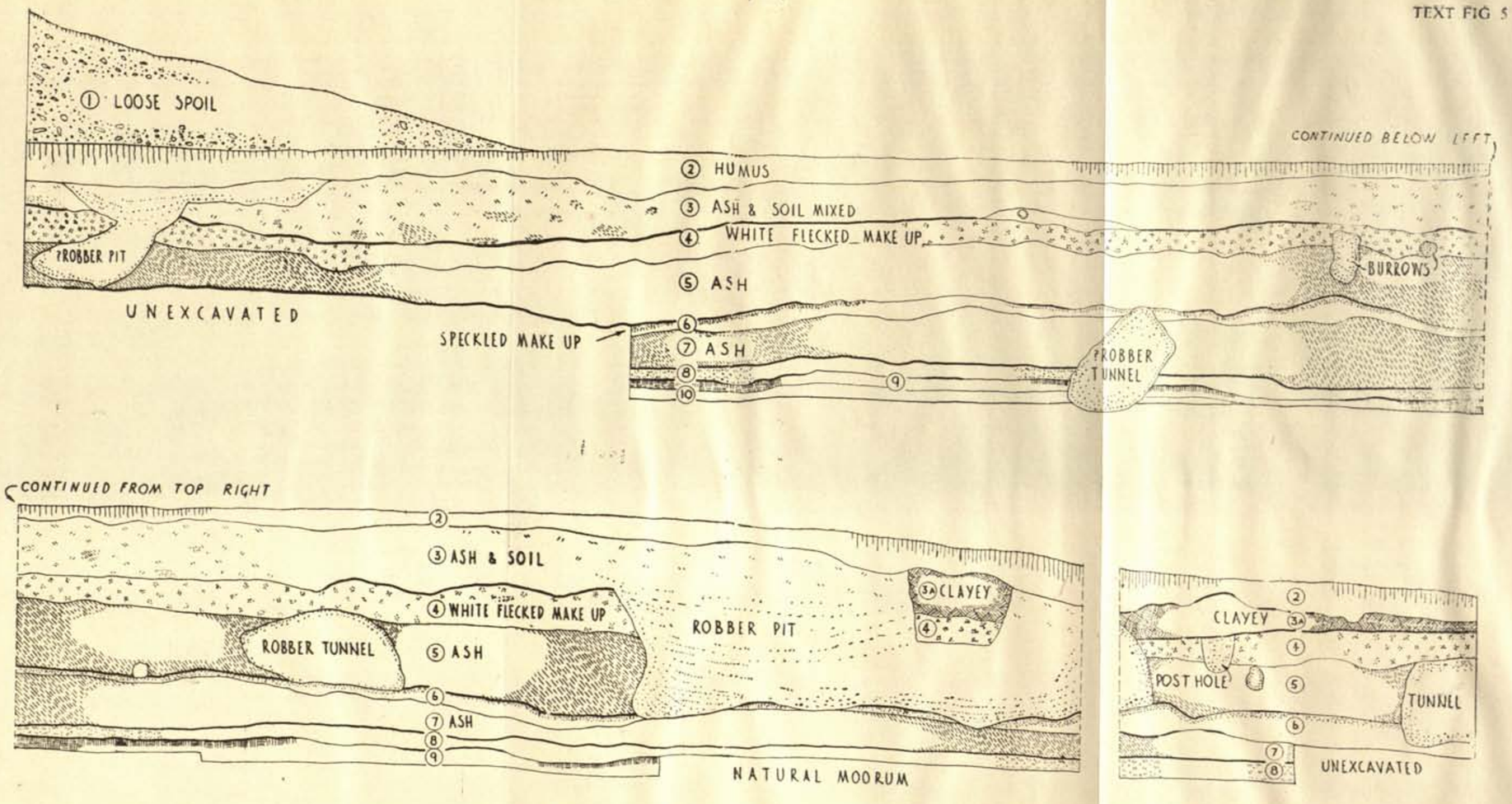


UTN I : SECTION AD SOUTH-EAST

UTNUR 1957



Section of site I, squares A—D



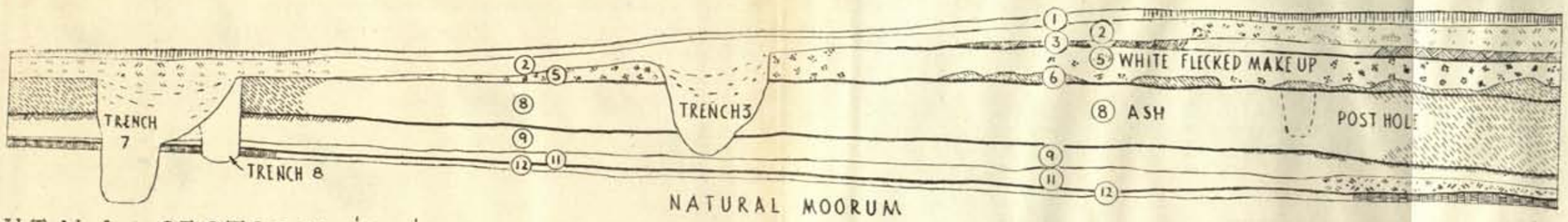
UTN II : NORTH - EAST SECTION

UTNUR 1957

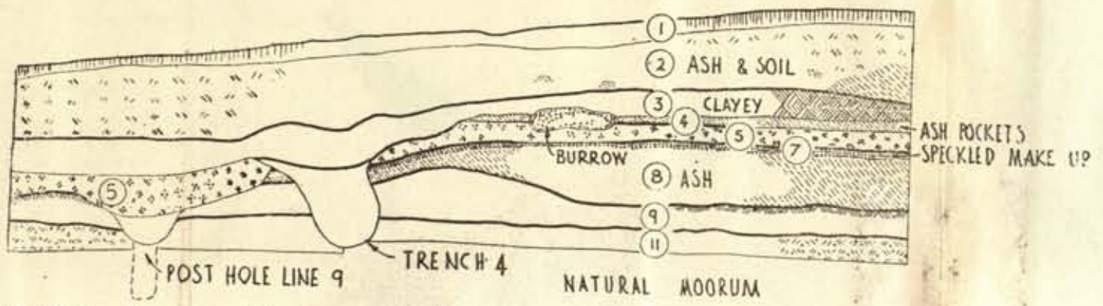
SCALE OF FEET

SCALE OF METRES

Section of Site II.

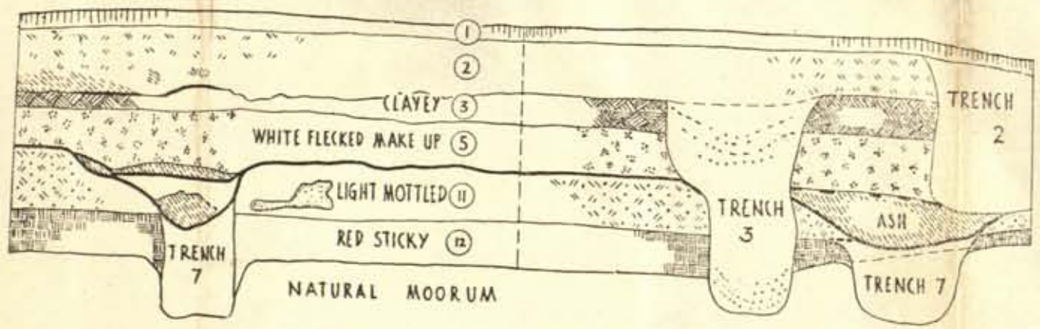


UTN I : SECTION 'ON' EAST

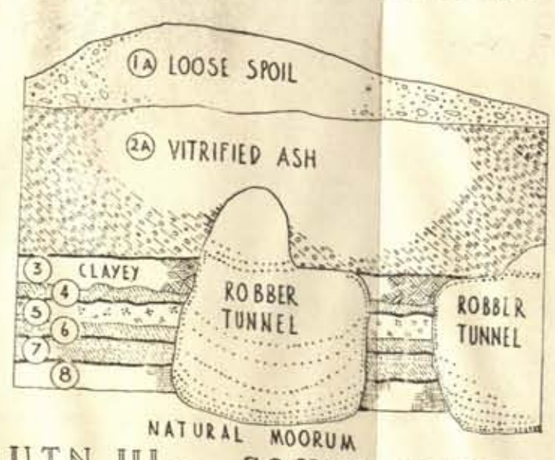


UTN I : SECTION 'GH' SOUTH - EAST

UTN II: NORTH - WEST SECTION



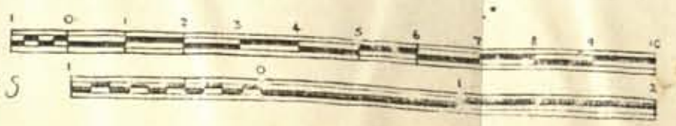
UTN I : SECTIONS 'JJ' SOUTH-WEST & NORTH-WEST



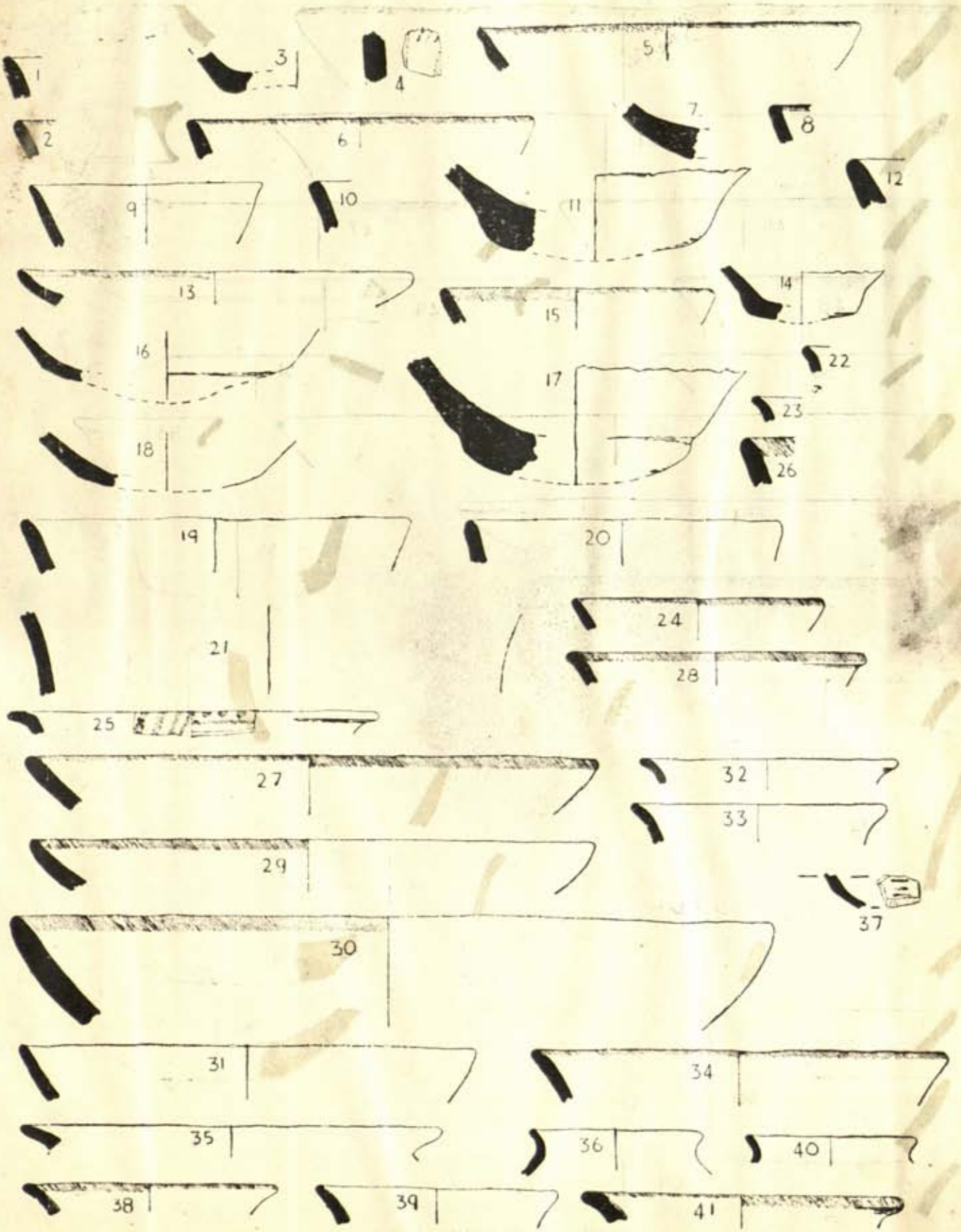
UTN III : SOUTH SECTION

UTNUR 1957

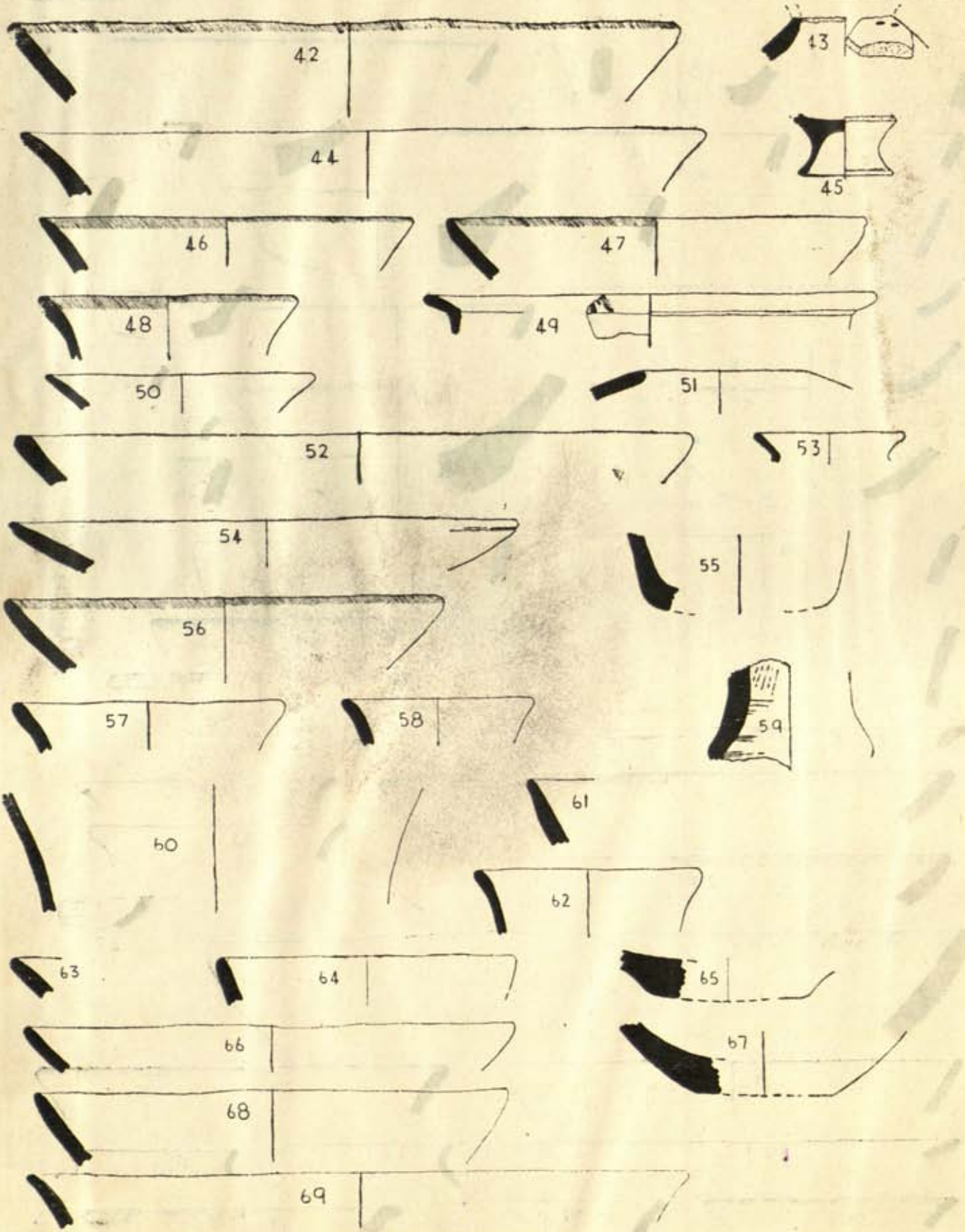
SCALE OF FEET
SCALE OF METRES



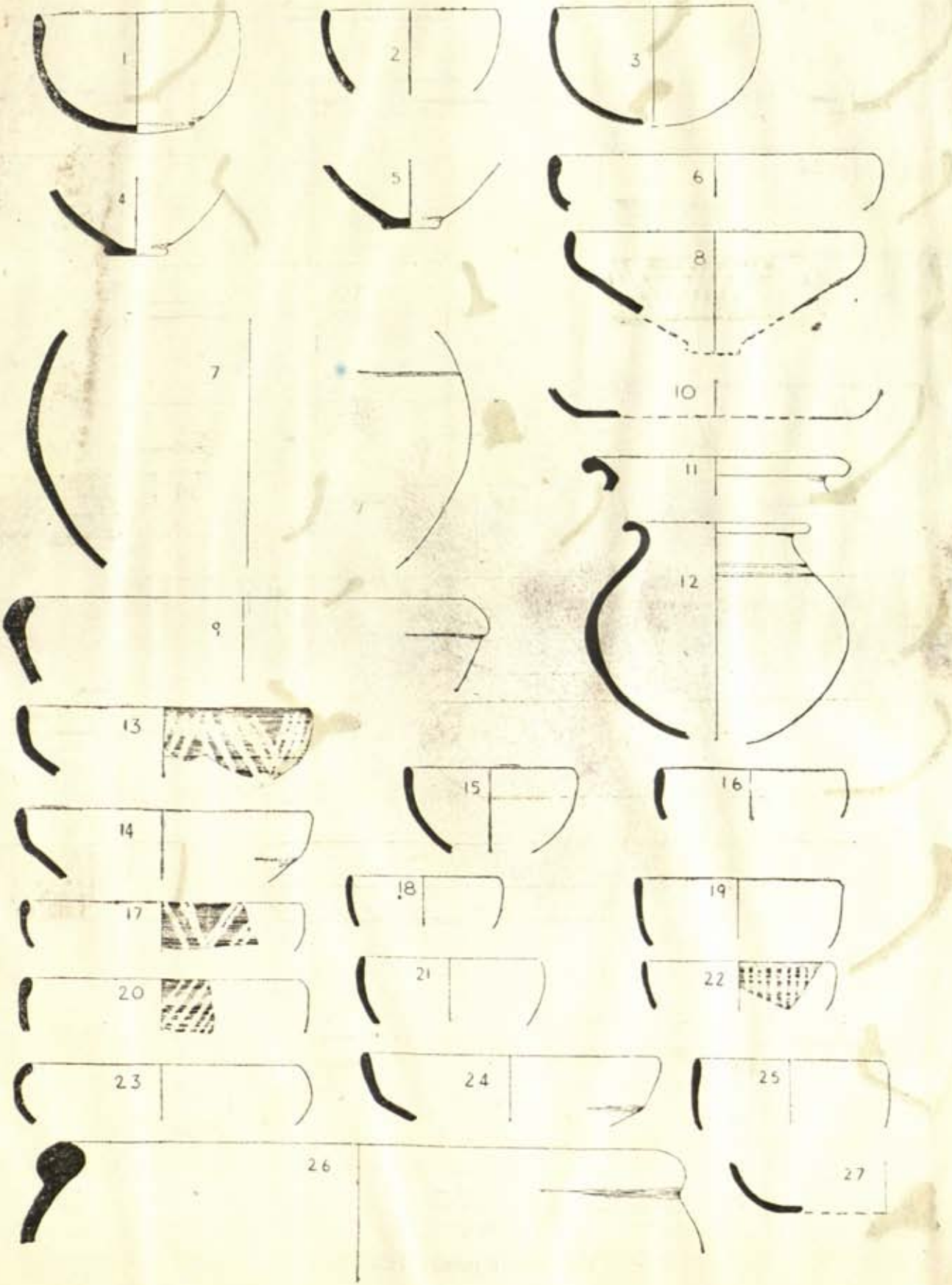
Sections of Site I and III.



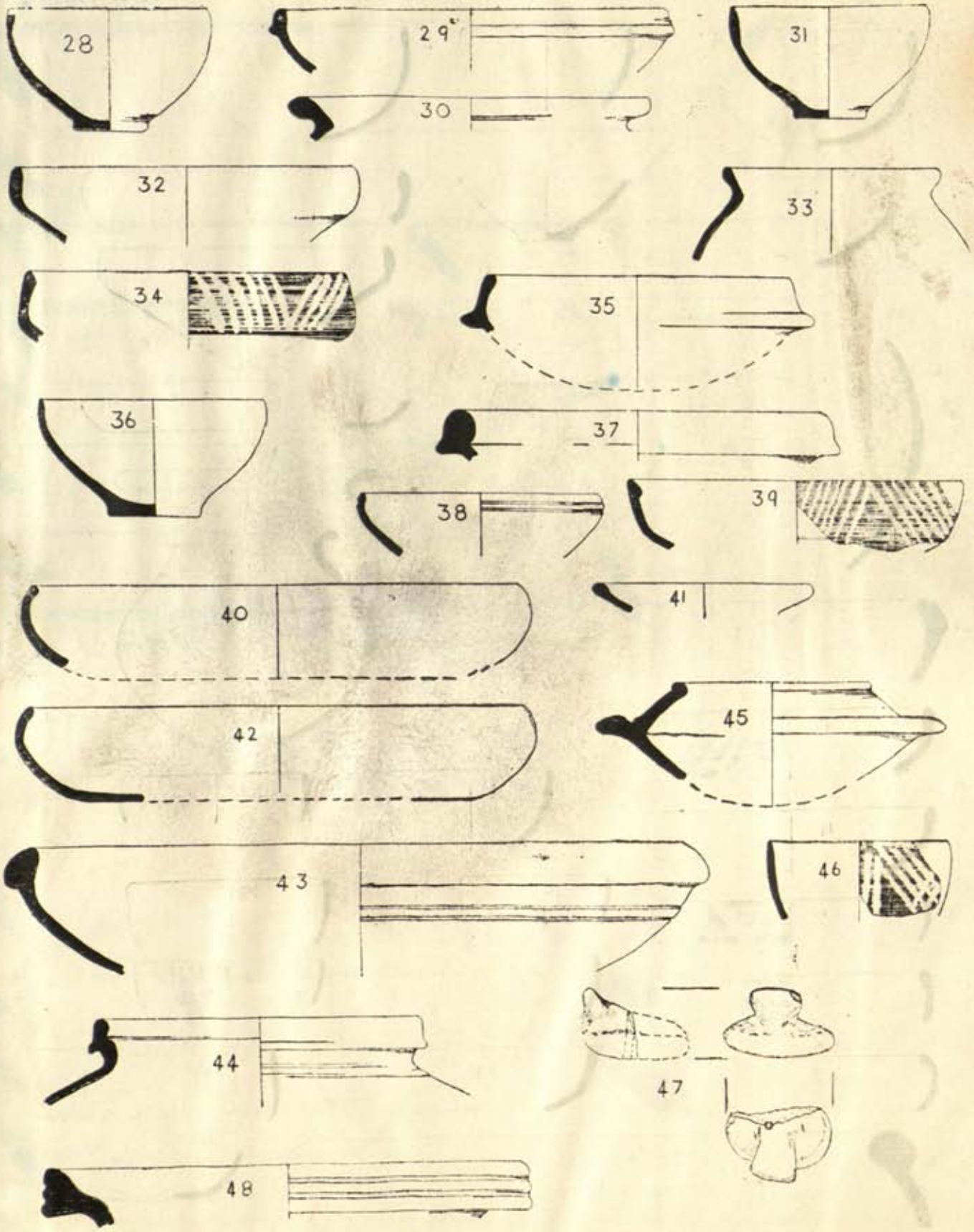
Neolithic A ware pottery (1:3).



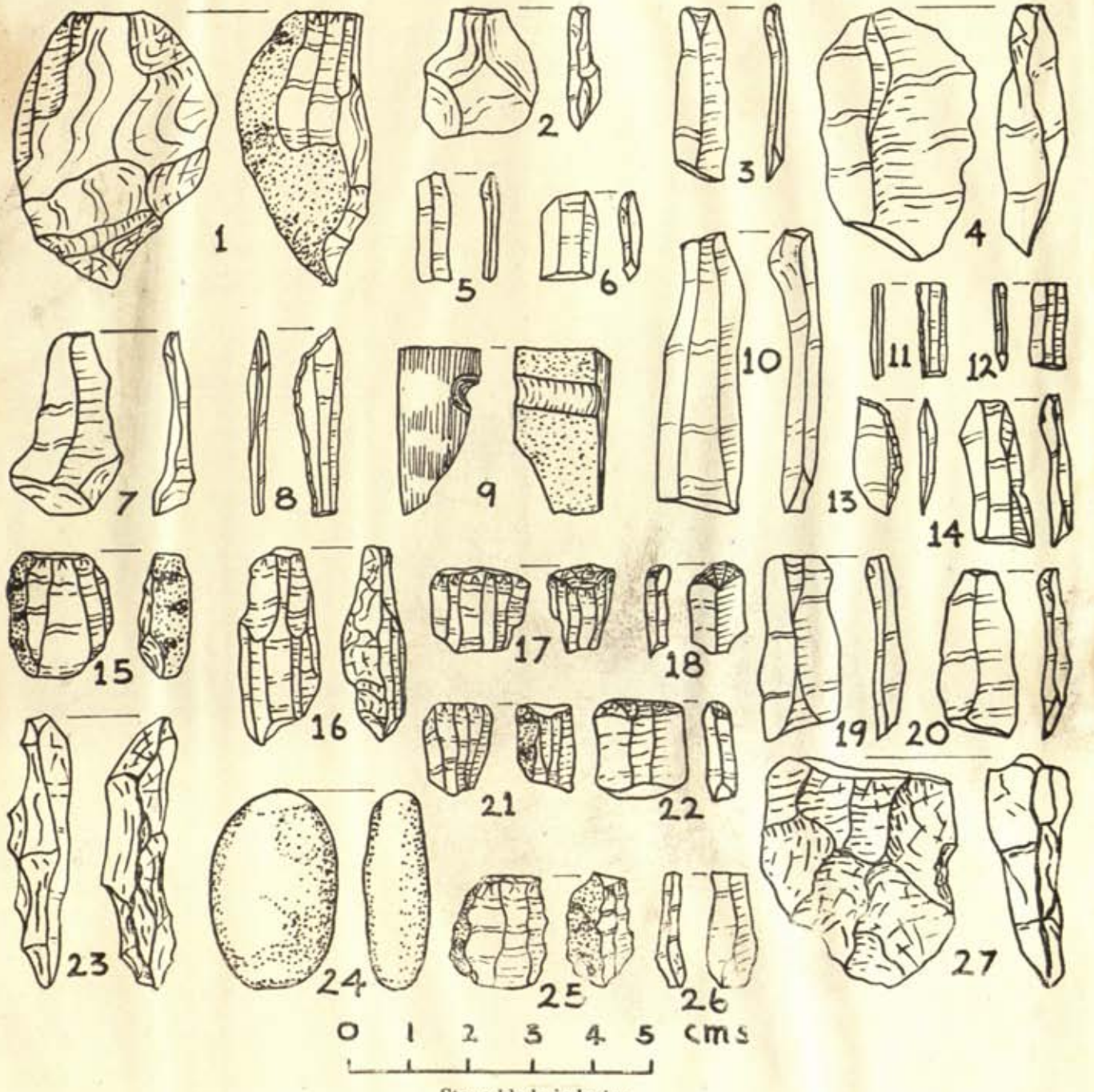
Neolithic A ware pottery (1:3).



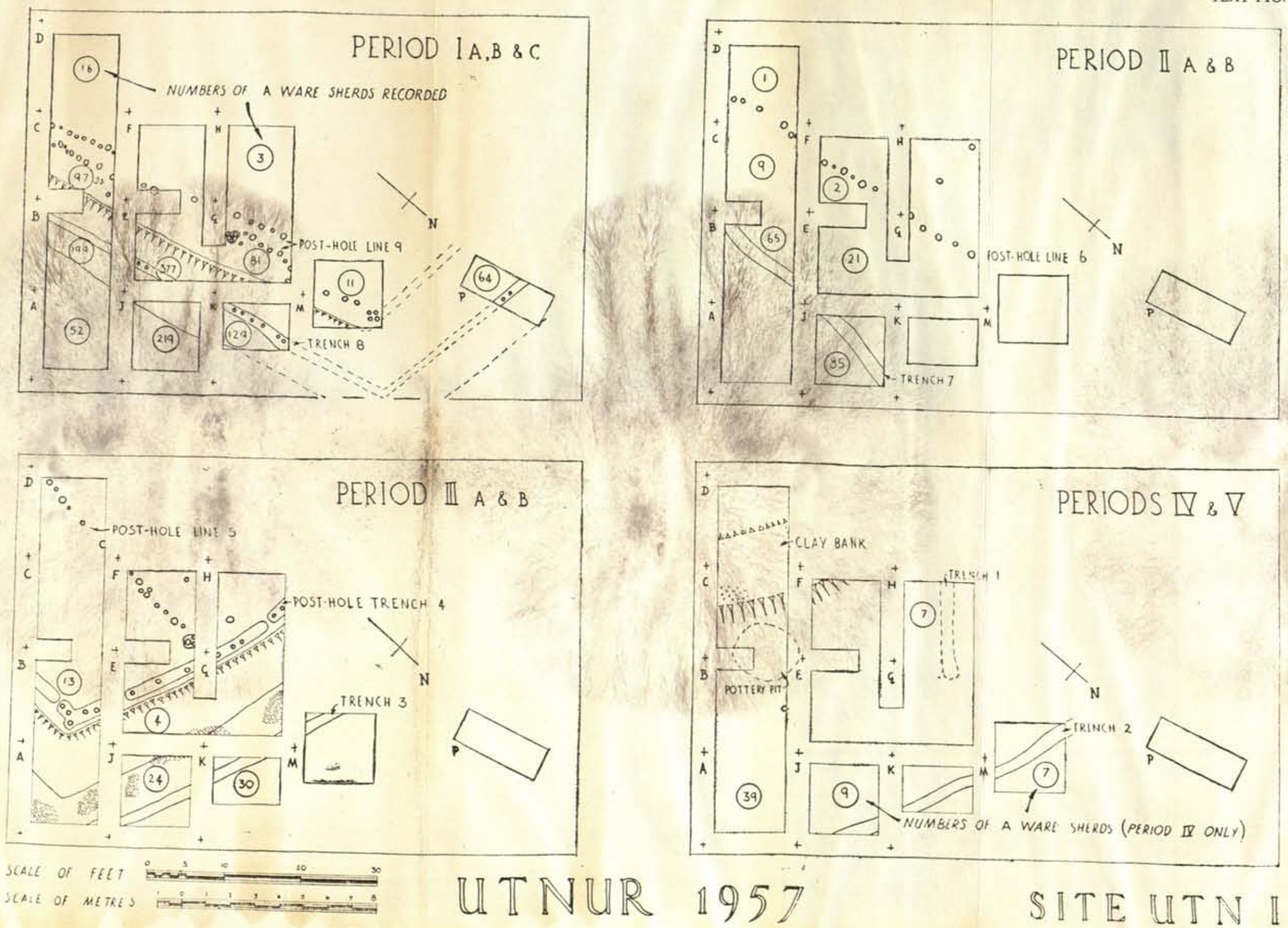
Early historic pottery (1:3)



Early historic pottery (1:3)



Stone blade industry.



UTNUR 1957

SITE UTN I

Main structural periods.