

EXCAVATIONS AT BISHOPSTONE

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PREFACE

The subject of this report is a site with an exceptionally long history of human occupation. This has, to some extent, been elucidated as the result of archaeological excavations between 1967 and 1975, directed by Mr. David Thomson and subsequently by the writer. In introducing this report it may be useful to say something about the layout adopted. It opens with a short introductory section in which the site, its topography and the history of the excavations are outlined. There follow five sections dealing with the main periods of occupation: Neolithic, Bronze Age, Iron Age, Romano-British and Anglo-Saxon. Each of these period sections includes a description and discussion of the relevant artifacts. When reference is made to an artifact it is followed by a number in brackets which relates to the illustration and catalogue of finds in *that* section, unless of course some other section is specifically mentioned. Concluding each of these period sections, excepting the Bronze Age, is a general discussion in which reference is made to the environment, economy and contemporary settlement pattern. The Anglo-Saxon section is followed by a review of the historical background bringing the history of occupation in the area up to more recent times. Following the broadly chronological part of the report are two sections on aspects which cross the boundaries between periods, firstly the associated field system, and secondly the environmental and economic evidence. Finally there is a short section on absolute dating. Our aim in adopting this layout has been to give sufficient information in each section to enable it to be read and consulted independently. It is also hoped that the general reader will be able to gain a reasonable idea of the history of the site simply by reading the introductory section and the general discussions of each period.

Our research has been based not simply on the Bishopstone site but has extended to the area within which it lies. To this end field surveys have been conducted on the downland between the rivers Ouse and Cuckmere. These surveys provide the basis for discussion of the settlement patterns. It must however be emphasised that the surveys are far from complete, and the distribution maps presented here should be regarded as interim reports on work which will, one hopes, be continued. Other aspects of this area study have been the excavation of a Romano-British site in Newhaven, a full report on which appeared in the *Sussex Archaeological Collections*, vol. 114, and a survey of the historical evidence relating to the area around Bishopstone. A section of this report deals with the historical evidence in so far as it is relevant to the site and the Anglo-Saxon settlement pattern. Aspects of the archaeology and history of this area which it has not been possible to include here will, we hope, form the subjects of separate notes and articles.



ACKNOWLEDGEMENTS

At the end of nearly a decade of field research considerable debts of gratitude are owed to a great many people who have, by their co-operative efforts, made it possible. This applies particularly to the landowners, John Willett and Geoffrey White, owners of the farmland on Rookery Hill and, in the case of Mr. Thomson's excavations on the Harbour View Estate, Edward Drewery, the developer. The excavations were organised by the Brighton and Hove Archaeological Society in association, during the last two seasons, with the Sussex Archaeological Field Unit. Grants were provided by the Department of the Environment, through the Field Unit, the Brighton and Hove Archaeological Society and the Sussex Archaeological Society. Annual appeals brought many donations from individuals and societies for which we are grateful. Administration of the excavations was by Mr. J. Makin, helped by Messrs. J. Holmes, K. W. Suckling, W. Gorton and others. Much benefit to the research accrued from the presence of C. M. Green as assistant director, Miss E. Guy, Mrs. S. Farrant and Miss J. Foster who took special responsibilities. Processing of the considerable volume of finds was supervised by Miss Peggy Norman and Miss Sue Hamilton, and earlier in the excavations by J. Biggar and J. Palmer. Photography was the responsibility of Mrs. B. Westley and in 1972 that of David Robinson. A survey of the site was prepared by Mr. E. W. O'Shea. A great many people assisted with excavation and finds processing; among them were Misses M. Barnes, A. George, M. Nichols, T. Patten, I. Winthrope, Mrs. M. Moloney, Messrs. M. Mander, O. Pearcey, A. Sayers, J. Sharpe, C. Skeggs, P. Wilkinson, Mr. and Mrs. Suckling, and the Westley and Stevens families.

The study and processing of the finds was facilitated by Brighton Museum which provided three rooms at Preston Manor, for which we have to thank Misses M. Waller and Caroline Dudley. It is in Brighton Museum that the finds described in this report are to be housed. Preparation of the report was financed by the Sussex Archaeological Field Unit, and special thanks are due to Peter Drewett for arranging this and for other help. The report owes much to the specialist contributors who are named elsewhere. Mr. Green and Miss Hamilton were responsible for the illustrations in their own sections and also did drawings for other sections. Mrs. Lysbeth Drewett drew the flints and Anglo-Saxon finds. In preparing his own sections of the report the writer has benefited very greatly from the voluntary assistance of two people in particular, Brenda Westley who typed the report and contributed background research, and Jennifer Foster who mounted the drawings and checked the manuscript at all stages, providing many improvements. The writer would also like to acknowledge the help and encouragement of local archaeologists, amongst them the late G. P. Burstow, the late Dr. Ratcliffe-Densham, also Messrs. Eric Holden and D. C. Haselgrove. The writer also records his indebtedness to his parents who have done much to facilitate this research. Dennis Haselgrove has assisted with reading the proofs and Dr. K. D. Thomas kindly read the sections on the Field system, the environmental and economic evidence, but the author is responsible for any errors.

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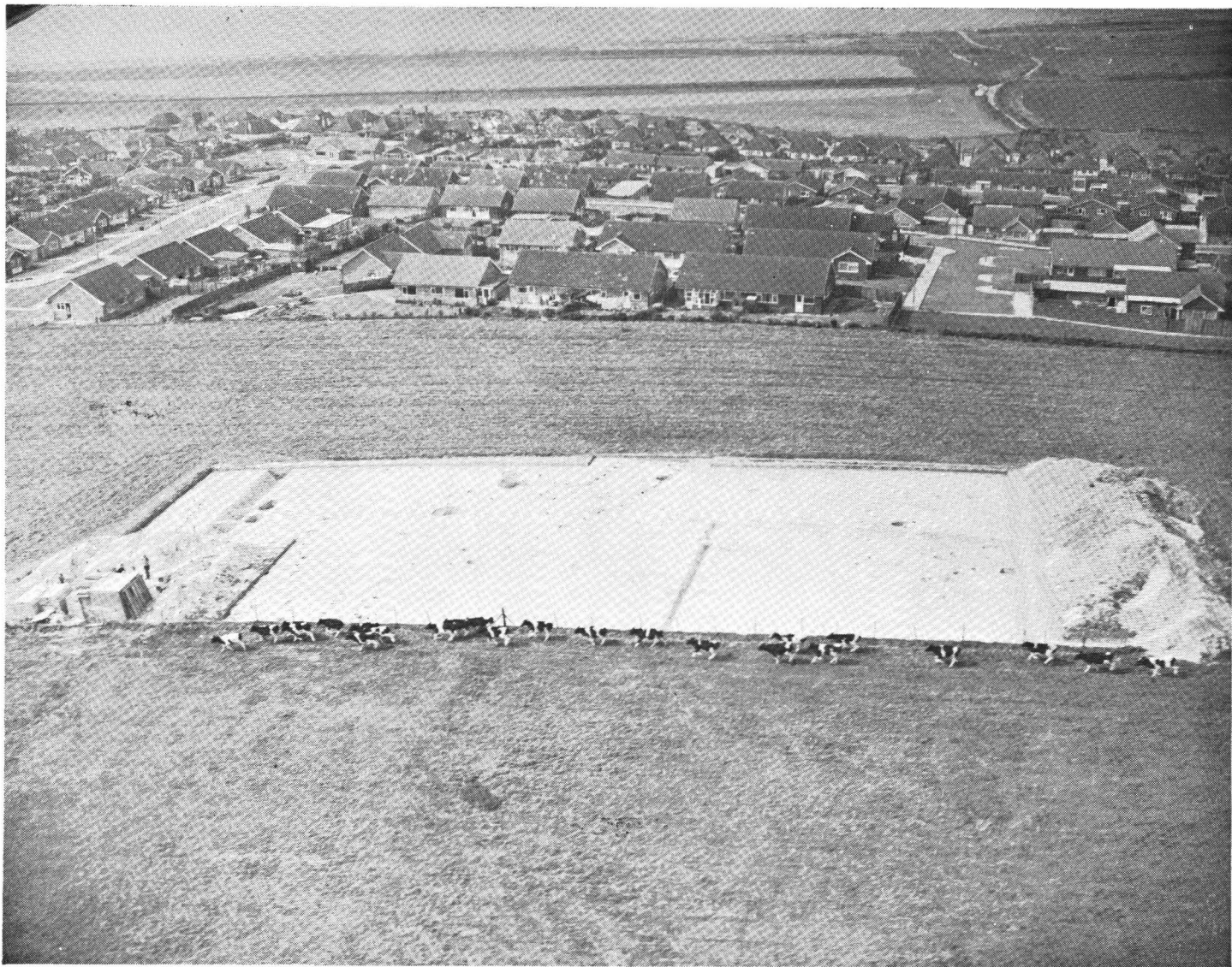


PLATE I. Aerial view of the 1975 excavation from the east. On the lefthand side of the excavation is the Iron Age ditch, on the righthand side, the Romano-British ditch. (Photo: S. Adams)

EXCAVATIONS AT BISHOPSTONE, SUSSEX

by Martin Bell

This hilltop in East Sussex which overlooks the English Channel was occupied for much of the time between the beginning of the third millennium B.C. and the sixth century A.D. Neolithic occupation is represented by a series of pits, one of which contained an interesting group of flint tools, with associated environmental evidence. There is then a hiatus with only slight traces of occupation in the Bronze Age. During the early Iron Age a small farming settlement was established near the crest of the hill. Unenclosed in its primary phase, it was later surrounded by a rectangular enclosure, outside which were fields. Excavation showed that the latter were cultivated intermittently from the Neolithic to Romano-British periods. The Iron Age structures were mostly of the four- and six-post types. Occupation continued throughout the Romano-British period in the early part of which a rectangular enclosure was laid out. The fifth century A.D. saw the establishment of an Anglo-Saxon settlement of rectangular buildings and sunken huts, which covered part of the earlier settlement and spread out over the former fields. On the edge of the settlement was a contemporary cemetery. Each period has produced evidence of the environment and economy. Studies of land and marine mollusc assemblages are included, and an attempt is made to classify pottery and clay objects on the basis of their contained minerals and to pinpoint possible clay sources.

INTRODUCTION

The surface of Rookery Hill shows very little trace of its long history of settlement. There are eight round barrows, of probable Bronze Age date, along the top of the spur, but the only other obvious feature is a sizeable positive lynchet on the south slope. Discovery of the site was purely by chance when, in September 1967, an estate of bungalows was under construction on the west side of the hill. The builders disturbed a group of skeletons and reported their discovery to the Sussex Archaeological Society. Excavations for that society, under the direction of Mr. David Thomson, revealed a pagan Saxon cemetery. To the north east of this Mr. Thomson found traces of Anglo-Saxon buildings. Subsequently, when work on the cemetery was completed, excavations were undertaken on adjoining farmland. Here Mr. Thomson discovered further Anglo-Saxon buildings, and an earlier Iron Age and Romano-British settlement. Cleaning and assessment of the cemetery finds is not yet completed, but some reference to Mr. Thomson's Anglo-Saxon discoveries is included. As for the Iron Age and Romano-British periods, the results of Mr. Thomson's work have been incorporated, with his permission, into an account of the present writer's subsequent excavations which forms the body of this report.

Having assisted Mr. Thomson with his excavation of the settlement sites, the present writer took responsibility for the excavations at the beginning of 1969. Soon afterwards the Brighton and Hove Archaeological Society offered to act as the co-ordinating body, and organised annual

excavations between 1970 and 1972, and in 1974 and 1975.¹ The academic reason for these further excavations was the site's obvious potential for the study of rural settlement and economy over a long period. Some urgency was given to this research by the fact that two and a half hectares of the site which had escaped building was being eroded by the plough. The chalk surface was scored by deep plough grooves, and large pits and ditches were marked on the soil surface by quantities of pottery and shell eroded from them. Subsequently it was discovered that parts of several Anglo-Saxon buildings had been destroyed by ploughing before the excavation. It was in recognition of the very real threat which ploughing poses to downland sites with shallow soil that the final two seasons of excavations were largely financed by the Department of the Environment. This was done through its agent in the county, the Sussex Archaeological Field Unit, which worked in association with the Brighton and Hove Archaeological Society during the 1974-5 seasons.

TOPOGRAPHY (Fig. 1)

Rookery Hill is a south facing spur on the dip slope of the South Downs. The bedrock is Upper Chalk mantled by a thin layer of silty soil. There are patches of Clay-with-Flints to the east of the area excavated. The chalk surface is fairly hard and smooth and facilitates excavation. It is however interrupted at intervals by solution pockets containing remnants of now denuded Eocene strata including ferruginous flint conglomerate, sand and occasionally pebbles.

To the west of the hill is the Ouse Valley which is here joined by a smaller valley to the east leading up to the present village of Bishopstone and the hamlet of Norton. Thus the hill is surrounded on three sides by low-lying alluvial land. The spur rises to 50m., and has a good view of Seaford Bay and the English Channel. The excavated area is today 1km. from the shoreline, but rather different conditions probably obtained in prehistory. Indeed, during the periods in question, the Ouse valley is likely to have been so different from what we see today that it is necessary to review briefly the geomorphological history of the area in order to understand the site's environment and the resources available to its occupants.

The basic topography of the area is the result of erosion under the extreme conditions of the Pleistocene glaciation. During the last stage of this, the Devensian, sea level is thought to have fallen by as much as 100 metres,² which forced the river Ouse to incise a deep channel into the chalk. Boreholes show that sediments in this buried channel attain a maximum depth of 25.87m. below O.D. in the vicinity of Newhaven Town railway station.³ The Post-Glacial rise in sea level would have resulted in flooding of the incised channel to form an inlet perhaps not unlike the present-day Chichester and Langstone harbours. Near the river mouth the Flandrian deposits consist of clays and silts with occasional bands of organic matter. The organic fraction becomes more pronounced where the valley widens out into the Vale of Brooks just south of Lewes, and here a rather more detailed sequence of Flandrian events has been identified. This is the result of deep augering by D. K. C. Jones, and two pollen analyses by Anne Thorley, the

¹ For interim reports see: M. G. Bell, *Bishopstone excavations 1968-71* (University of Sussex Arch. Soc., 1972); M. G. Bell, 'Excavations at Bishopstone, East Sussex,' in *Bulletin of the Inst. Archaeology*, No. 12 (1975), pp. 26-32; M. G. Bell, 'Further excavations on Rookery Hill, Bishopstone,' in *Bulletin of the Inst. of Archaeology*, No. 13 (1976), pp. 66-74.

² F. W. Shotton, 'The physical background of Britain in the Pleistocene,' *Advancement of Science*, vol. 19 (1962), p. 193.

³ I am grateful to the East Sussex County Council for providing details of boreholes, their positions are marked on Fig. 1.

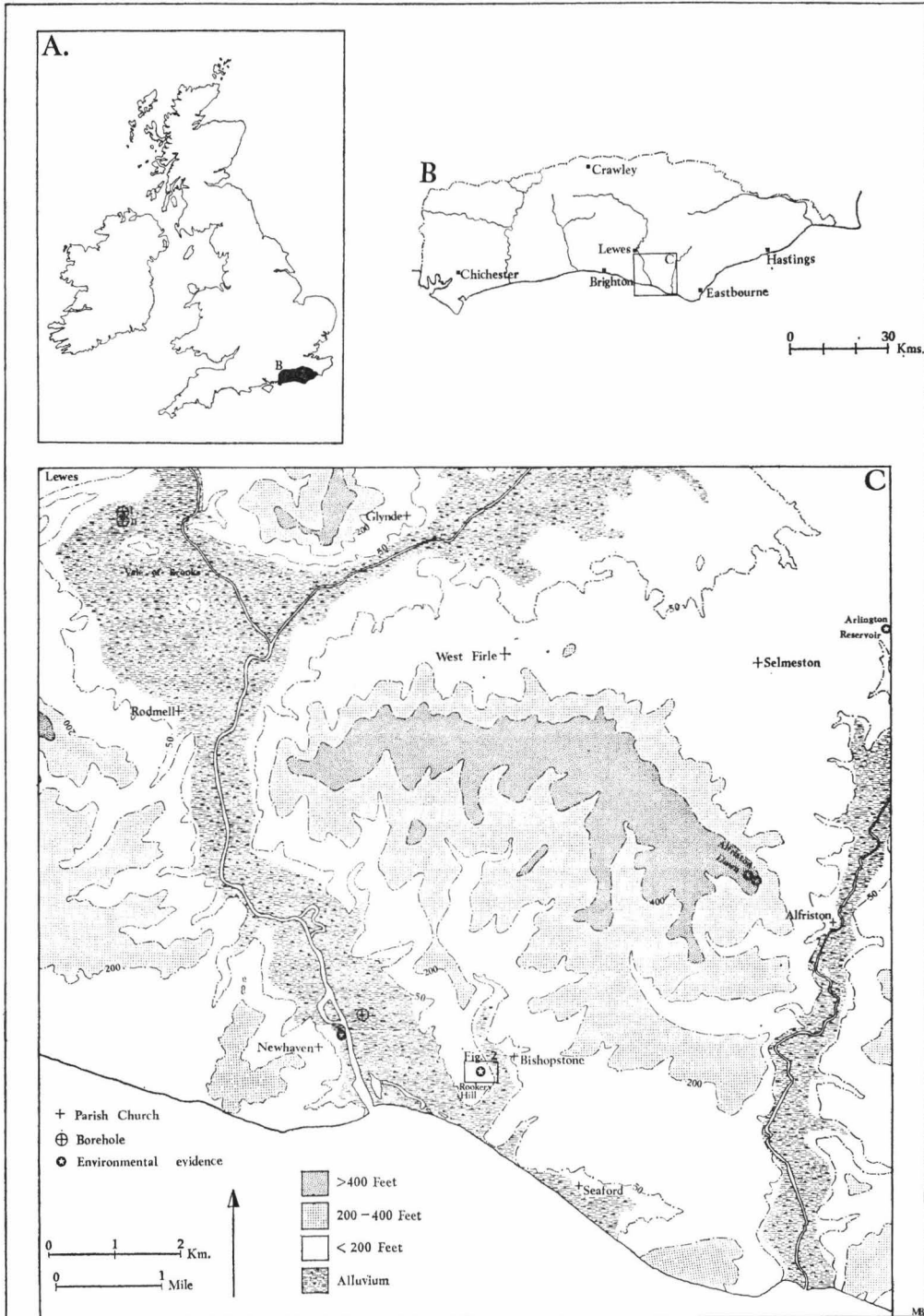


FIG. 1. Location of Rookery Hill, Bishopstone, showing sites which have produced information regarding the early environment of the region

positions of which are indicated on Fig. 1.¹ They have shown that the buried channel of the Ouse runs to the west of the Upper Rise, and thus diverges considerably from the river's present course.

Pleistocene deposits on the floor of the channel are overlain by peat from which three radiocarbon dates have been obtained. The lowest stratigraphically was near the middle of the Lewes I pollen diagram and gave a date of 6290 ± 180 BP (Birm.-168). The Lewes II pollen diagram is bracketed between a pair of dates, one of 5670 ± 170 BP (Birm.-167) from near the base of the peat, and another of 3190 ± 125 BP from the top. Thus swampy conditions prevailed and peat was forming in the Vale of Brooks between the Mesolithic period and about the middle Bronze Age. After this there appears to have been a slight fall in sea level followed by a transgression which turned the Brooks into a shallow tidal estuary. These conditions seem to have persisted through the late Saxon period and into the Medieval period when, as a review of the historical evidence shows,² the valley floor seems to have formed a tidal inlet.

In the Medieval period and probably earlier there was a shingle bar at the river mouth which would have aided the accumulation of sediment from the river's catchment. The growth of this bar also had the effect of forcing the mouth of the Ouse towards the east. In the Medieval period it ran to the south of Rookery Hill to enter the channel at Seaford, where, during the early thirteenth century A.D., a flourishing Cinque port developed. Silting of the harbour and further growth of the shingle bar meant that by the fourteenth century A.D. the port was in decline.³ Permanent drainage of the levels was only achieved after a new outlet for the Ouse was cut in the sixteenth century at Meeching, which consequently changed its name to Newhaven.⁴

It seems then that during most if not all of the time when Rookery Hill was occupied the surrounding levels formed a tidal inlet. There was probably fairly deep open water in the Mesolithic and Neolithic periods, but the rate of eustatic sea level rise in South East England decreased considerably after the early Neolithic,⁵ and from then onwards the general trend must have been towards progressively shallower conditions. The edge of the alluvium, and presumably that of the former inlet, is marked by a distinct break of slope. On the south west facing side of Rookery Hill this has the proportions of a degraded fossil cliff. The feature continues on a reduced scale round the south east and north east sides of Rookery Hill, and marks the site of a former inlet between the hill and Bishopstone village. Documentary evidence reviewed by Mr. Haselgrove below suggests that final reclamation of this inlet was only achieved in the fourteenth century.

THE EXCAVATIONS (Fig. 2)

The settlement area runs from the spur crest down to the 38m. contour. A scatter of pottery, flints, shells, foreign stone and bone covers an area of some 5 hectares (12 acres). This is bounded roughly by steeply sloping ground to the east and by the cemetery to the west. Artifacts become

¹ D. K. C. Jones, 'The Vale of Brooks,' and A. Thorley, 'Vegetational history in the Vale of Brooks,' both in R. Williams (ed.), *A guide to Sussex excursions*, Inst. of Brit. Geographers, Conference (1971).

² See discussion by D. C. Haselgrove in the section on Documentary Sources, p. 243.

³ F. G. Morris, 'Newhaven and Seaford: a study of the diversion of a river mouth,' *Geography*, vol. 16 (1931), pp. 28-33.

⁴ P. F. Brandon, 'The origin of Newhaven and the drainage of the Lewes and Laughton levels,' *Sussex Archaeological Collections* (abbreviated hereafter to *S.A.C.*), vol. 109 (1971), pp. 94-106.

⁵ A. V. Akeroyd, 'Archaeological and historical evidence for subsidence in Southern Britain,' *Phil. Trans. Royal Society Lond. A.*, vol. 272 (1972), pp. 151-169.

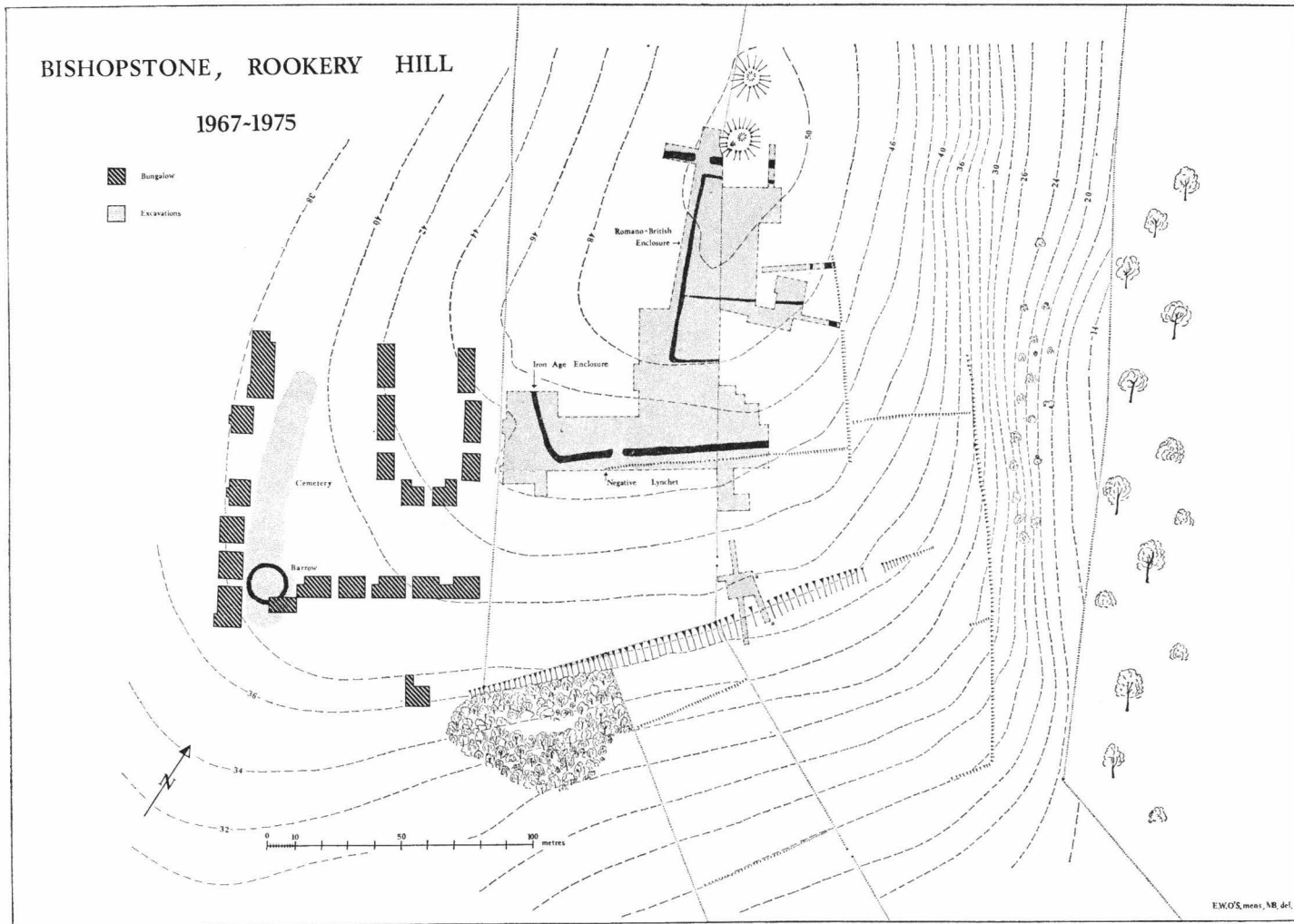


FIG. 2. General plan of the top of Rookery Hill, based on a survey by E. W. O'Shea. Contour heights in metres above O.D.

much less prolific north of a line joining the northern edge of the excavation and that of the cemetery, for here there is a very slight break in slope marking the edge of a shallow Pleistocene erosion feature. The southern edge of the distribution is marked by a positive lynchet. Of this large area about 1 hectare (2.5 acres) has been excavated, centred on G.R. TQ 46750072.

The site is divided by two fence lines, running NNW-SSE, into three distinct blocks of modern land usage. The westernmost is the Harbour View Bungalow Estate, which was laid out on land previously given over to arable. Over much of this area building and earthmoving had already taken place before the discovery of the site. The result was that areas available for excavation were limited and work was, of necessity, somewhat hurried. The central block is arable land on which the chalk bedrock was covered by a shallow ploughsoil between 15 and 25 cm. deep. The topsoil contained no stratified finds and was generally removed mechanically. The smooth plough-eroded chalk surface had then only to be trowelled clean and brushed before the archaeological features became visible. The eastern block consists of pasture, of apparently fairly long standing, with a short turf flora developed on a classic Rendzina soil profile. The top stone-free zone of this profile was also free of archaeological finds; these had accumulated, by the action of earthworms, in the stone layer near the base of the profile. It was from here that the majority of unstratified finds came, pottery in particular was more abundant and better preserved than in the ploughed parts of the site. The turf and top soil in the grassland areas were removed manually, revealing a rather weathered chalk surface.

Interpretation of sites such as this was profoundly altered by the publication in 1957 of Professor R. Atkinson's paper on the effects of weathering.¹ As a result it is now generally appreciated that there has been considerable erosion of many prehistoric sites, particularly those on chalk hill tops. Three main processes have been operative on Rookery Hill; one of them is solution, which Atkinson calculated could be responsible for the loss of some 50 cm. in 4,000 years. Then there is ploughing, which as 'Celtic' fields themselves show, can produce even more dramatic local erosion. But ploughing has probably only been operative on two-thirds of the site, and then only for perhaps 50 years in the Post-Medieval period. The third factor, and least easy to quantify, is hill-wash, the gradual movement of soil downhill generally as a result of the combined action of surface run-off and agriculture. If the figures for solution rates quoted by Atkinson are representative then the Neolithic ground surface may perhaps have been about 50 cm. above its present level. The implication of this is that excavated features, particularly the earlier ones, are only the bases of the deeper holes; shallower features may have been totally obliterated.

Erosion on this scale with only a shallow topsoil means that occupation surfaces are absent, and no overall stratigraphy exists to which features can be related. Stratigraphic relationships exist only where one feature happens to cut another. Usually, however, it is the artifacts contained in a feature which are responsible for its being related to one of the five main periods in the site's history.

¹ R. J. C. Atkinson, 'Worms and weathering,' *Antiquity*, vol. 31 (1957), pp. 219-233.

THE NEOLITHIC PERIOD

TREE HOLES (Fig. 3)

The earliest features on the site were 45 irregularly shaped subsoil hollows which are interpreted as tree or shrub root holes. They varied in depth between 10 and 50 cm., and the fill was broken chalk with small amounts of soil; the edges were often difficult to identify. In some instances the fill was cemented by a deposit of calcium carbonate, a characteristic which these features had in common with the Neolithic pits. Indeed there were indications that some at least of these hollows may have been contemporary with the Neolithic occupation. Particularly significant in this regard is Feature 707 (Fig. 6), an irregular bowl-shaped hollow with a fill of broken chalk rubble. At its base was a fragment of charcoal, and near the top a polished quartz diorite axe or macehead (S1) of probable Neolithic date. No. 602 contained two fragments of mussel shell, and 609 one fragment. No. 599 was of a similar shape to the other examples but contained a distinctive fill of orange brown soil and flints with chalk. Although otherwise appearing to be a perfectly natural hollow it contained two flint flakes. None of the hollows could be proved to be any later than the Neolithic occupation. When there was a stratigraphic relationship with an archaeological feature the hollow was always earlier. For instance, No. 864 was bisected by an early Iron Age ditch, and Nos. 52 and 257 by postholes of the same period; four other hollows were cut by later features.

It is difficult to escape the conclusion that most of the hollows resulted from tree or shrub growth prior to the Neolithic occupation. The fact that some contained artifacts suggests very strongly that removal of the trees or bushes coincided with the occupation. The presence of artifacts further shows that the roots of plants growing in the hollows were probably dug round and removed. Similar hollows at Rams Hill contained flecks of ash, which was also interpreted as the product of a primary clearance phase.¹ These general conclusions are supported to some extent by T. P. O'Connor's analysis of land molluscs from Neolithic pits 357 and 570. *Zonitidae* and other woodland species predominated in samples from the base of pit 570, but had declined in subsequent layers. In the post-Neolithic there was a predominance of open country species giving weight to the inference from the hollows that the hill top had been open and virtually free from woody species since before the Iron Age.

THE NEOLITHIC FEATURES (Figs. 3-6)

The Neolithic settlement, which showed no evidence of having been enclosed, was represented by a series of pits and other features. They were distinguished from later features by their fill which was often very hard packed and cemented by a deposit of calcium carbonate laid down by percolating water. Furthermore, soil in Neolithic features, and at the base of the lynchet profile, was dark orange/brown in colour, quite distinct from the present chalky light brown soil. Presumably this contrast is partly the result of progressive leaching of the top soil during Post-Glacial time. However the movement of mineral and organic matter down the soil profile

¹ R. Bradley and A. Ellison, *Rams Hill*, British Arch. Reports No. 19 (1975), pp. 48-51.

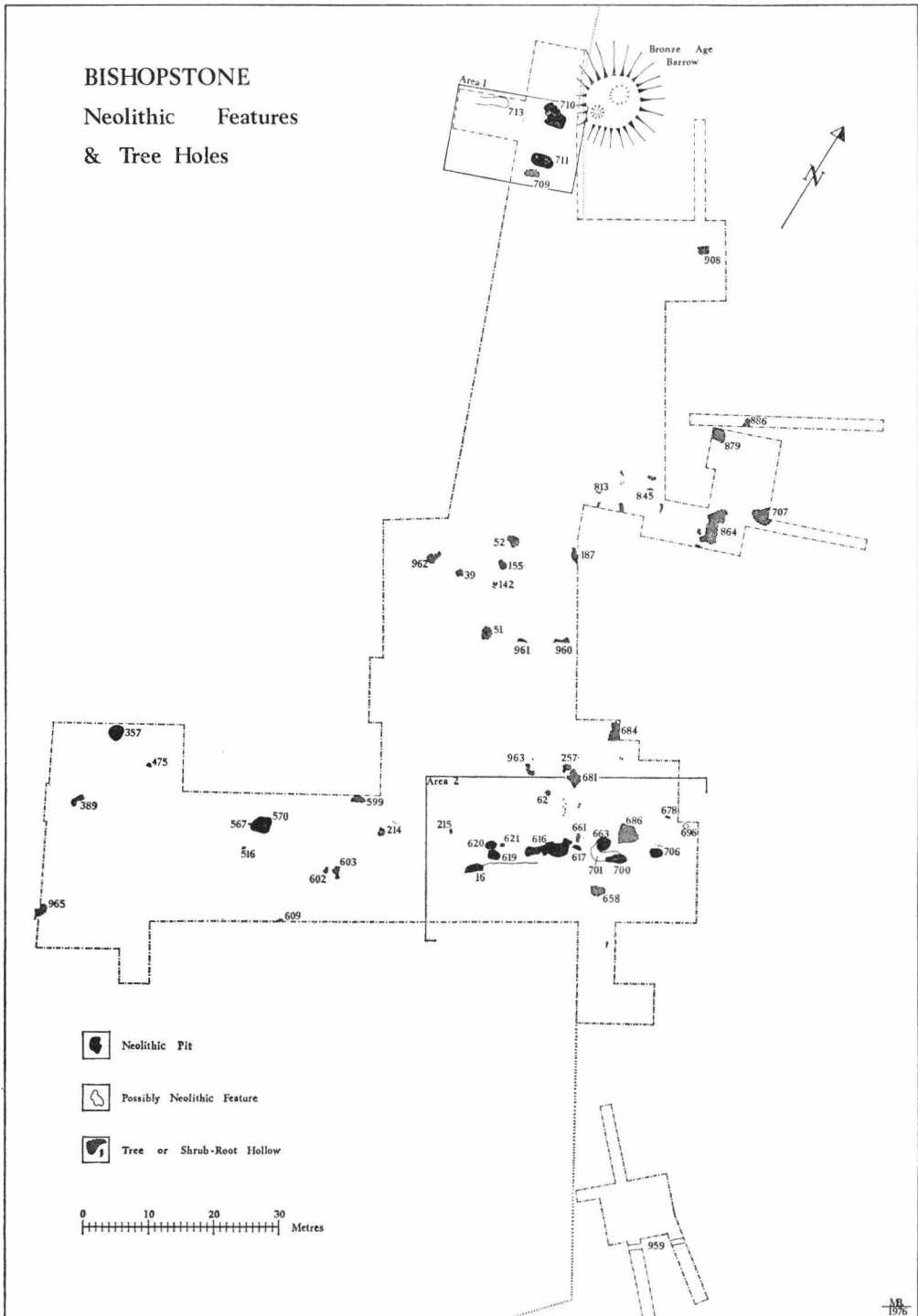


FIG. 3. Plan of the Tree or Shrub-holes and Neolithic features

may also have enhanced the rich colour of buried sediments, particularly those at the base of the lynchet.

For ease of cross reference the description of each feature is accompanied by a list of the published artifacts it contained, any other pieces particularly relevant to the feature's interpretation are also noted. A full list of the flint artifacts and by-products from each feature is given in Table 1.

The features can be divided into six fairly distinct types:

(a) *Large pits*

These are circular or oval, neatly and regularly cut with straight sides. There were two such features and they deserve separate consideration.

Pit 357 (Fig. 4 and Plate II)

Many of the conclusions about the character of the Neolithic occupation and its economy are based on this, the most productive feature. It was of roughly circular shape with more or less vertical sides and 85 cm. deep. The floor was flat, and cut into it was at least one distinct antler pick mark. A thin primary silt consisted of grey chalk material in which were tiny pieces of charcoal which had probably been comminuted by trampling. Before much weathering could occur the pit was backfilled with 50 cm. of chalk rubble containing large numbers of mussel shells. Once the backfill was within 30 cm. of the present chalk surface it was allowed to weather for a short period, after which three small hollows were scooped in the unconsolidated sediment. The largest of these, about 1m. by 60 cm. and 12 cm. deep near the centre of the pit, was a hearth. Charcoal of grasses, twigs and wood was abundant, and pieces of chalk and a serrated blade also showed the effects of heat. The two other scoops were at the periphery of the feature and were between 10 and 20 cm. in depth, they had no obvious function. Following this brief episode the pit was filled to the top of the surviving portion with chalk lumps and dark brown earth. Finds were abundant throughout the fill but particularly so in this top layer. Published artifacts from the feature are flints 1-60, pottery vessels 1-17, and a saddle quern, S3. Environmental evidence included land and marine molluscs and carbonised plant remains discussed below. The feature is dated by a radiocarbon determination on charcoal from layers 4-7, 2510 ± 70 bc (Har-1662).

Pit 711 (Fig. 5)

The largest of the Neolithic features was an oval pit of depth 1.54m. with virtually straight sides and a flat bottom. Before weathering of the edges could occur the pit was infilled with chalk rubble and soil which contained comparatively few artifacts. These included flints 75, 79, 81 and 86; a rubber S6, and three Neolithic sherds. Cut into the top of this feature during the Iron Age was Pit 712 which contained some residual Neolithic material.

A further, though rather shallower, Sussex example of this pit type is that found by Dr. Curwen on New Barn Down.¹ Such pits are generally thought to have been used for storage,² but they are surprisingly large for that purpose.

¹ E. C. Curwen, 'A late Bronze Age farm and a Neolithic pit-dwelling on New Barn Down, Clapham, nr. Worthing,' *S.A.C.*, vol. 75 (1934), pp. 153-156.

² N. H. Field, C. L. Matthews and I. F. Smith, 'New Neolithic sites in Dorset and Bedfordshire with a note on the distribution of Neolithic storage pits in Britain,' *Proceedings of the Prehistoric Society* (abbreviated hereafter to *P.P.S.*), vol. 30 (1964), pp. 352-381.

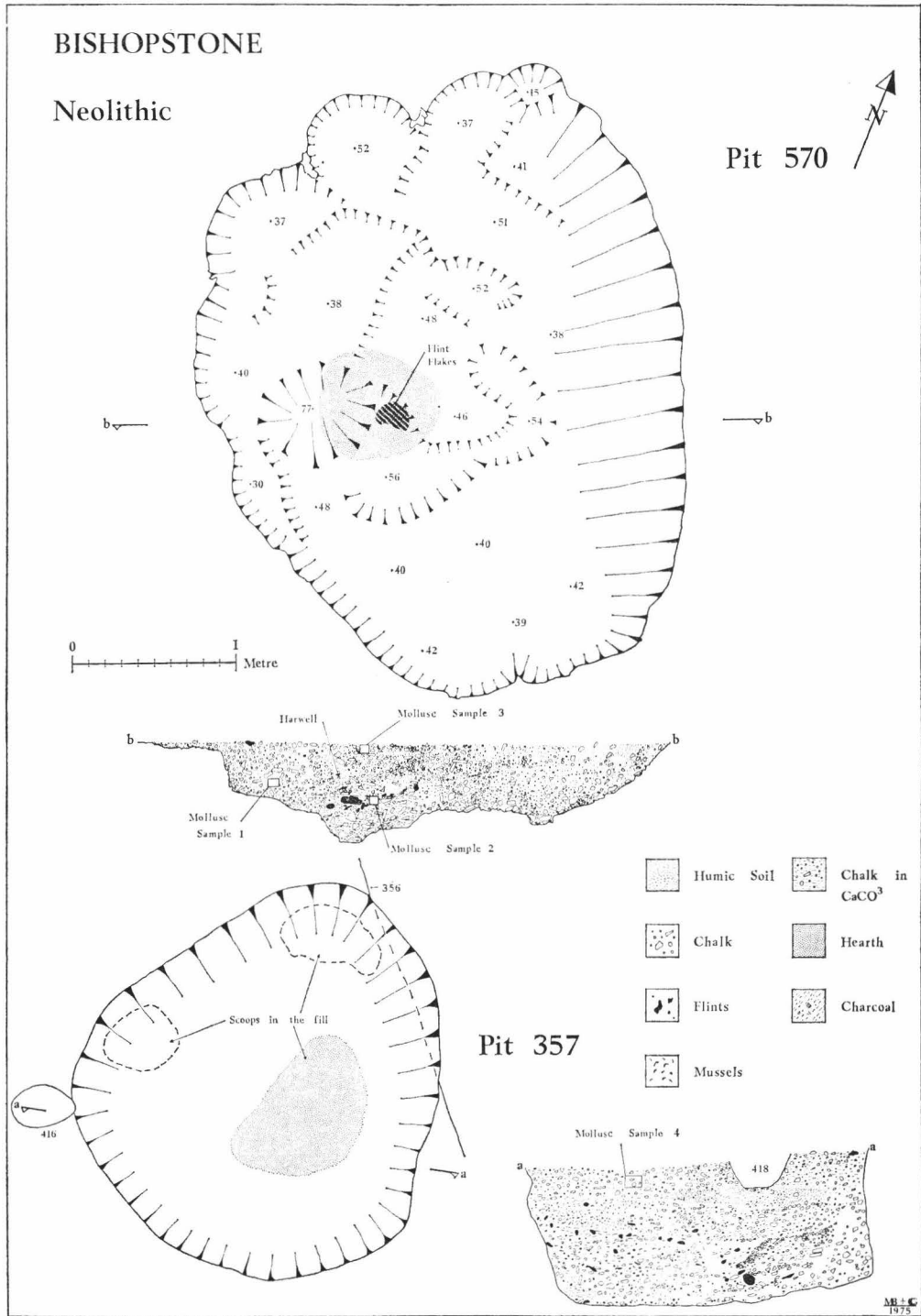


FIG. 4. Plans and sections of Neolithic pits 570 and 357

(b) Irregularly shaped pits

Two features apparently formed by the intersection of roughly excavated scoops.

Pit 570 (Fig. 4)

An approximately oval feature, most of which was only about 40 cm. deep. In one area the pit diggers had encountered a solution pipe filled with sand and flints. Here they dug down 77 cm. to extract the orange stained flints, flakes from some of which were found in the feature. Once the pit had been made it was allowed to weather and 30 cm. of sterile chalk rubble accumulated. Experience during the excavations showed that this would have been achieved during one or more heavy winters. After this a hearth 70 cm. by 60 cm. was made in the deepest part of the weathered hollow. Small amounts of ash and charcoal were surrounded by a few flints, which showed sooting rather than fire damage. It was around this hearth that the only artifacts were found; 62 flakes, a retouched piece and 8 nodules from which flakes had been struck. Although the flaking technique was similar to that in the other features the absence of pottery or artifacts of recognisable types means that the attribution of this feature to the Neolithic must remain speculative. The small amount of charcoal and the absence of intense burning showed that the hearth had only been used on a single occasion, after which weathering again resumed but now with rather more dark soil between the pieces of chalk rubble. Land molluscs from this feature are discussed by T. P. O'Connor below.

Pit 710 (Fig. 5)

A feature of very irregular shape beside a later round barrow. The southern half was oval in shape with tapering sides and a depth of 1.5m., the northern part was a series of intersecting scoops about 50 cm. deep. At the bottom of the southern section was a thin primary silt of dark top soil which may once have been turf. Above this was broken chalk rubble, on top of which was a small hearth marked by a patch of ash and flints. The remainder of the feature was then filled with chalk rubble and dark soil. Like its near neighbour 711, this pit contained little domestic refuse; a probable axe roughout (64) came from the hearth and other illustrated finds are flints 83, 84 and 95 and a sandstone rubber (S5). A layer of flints at the base of the ploughsoil covered part of the pit and roughly coincided with its outline. Associated pottery indicated that this was of Iron Age or later date, and had been preserved here as a result of slumping into the Neolithic feature.

This type of pit lacks the clean cut sides and regularity which might be expected were it used for storage. The method of digging irregular intersecting scoops is reminiscent of that found in causewayed camps and long barrow ditches.¹ This resemblance may imply a shared function as quarries for material as opposed to neatly fashioned subterranean structures.

(c) Gullies (Figs. 5 and 6)

These share the scoop method of digging with the last type. Such features are Nos. 16, 616, 701 and 713; they varied in depth between 6 and 30 cm., and contained chalk rubble and a little soil. Much of 16 had been removed by the Iron Age ditch, but it produced flint tools Nos.

¹ For instance see:- P. Drewett, 'The excavation of an oval burial mound of the third millennium b.c., at Alfriston, East Sussex, 1974,' *P.P.S.*, vol. 41 (1975), pp. 119-152.

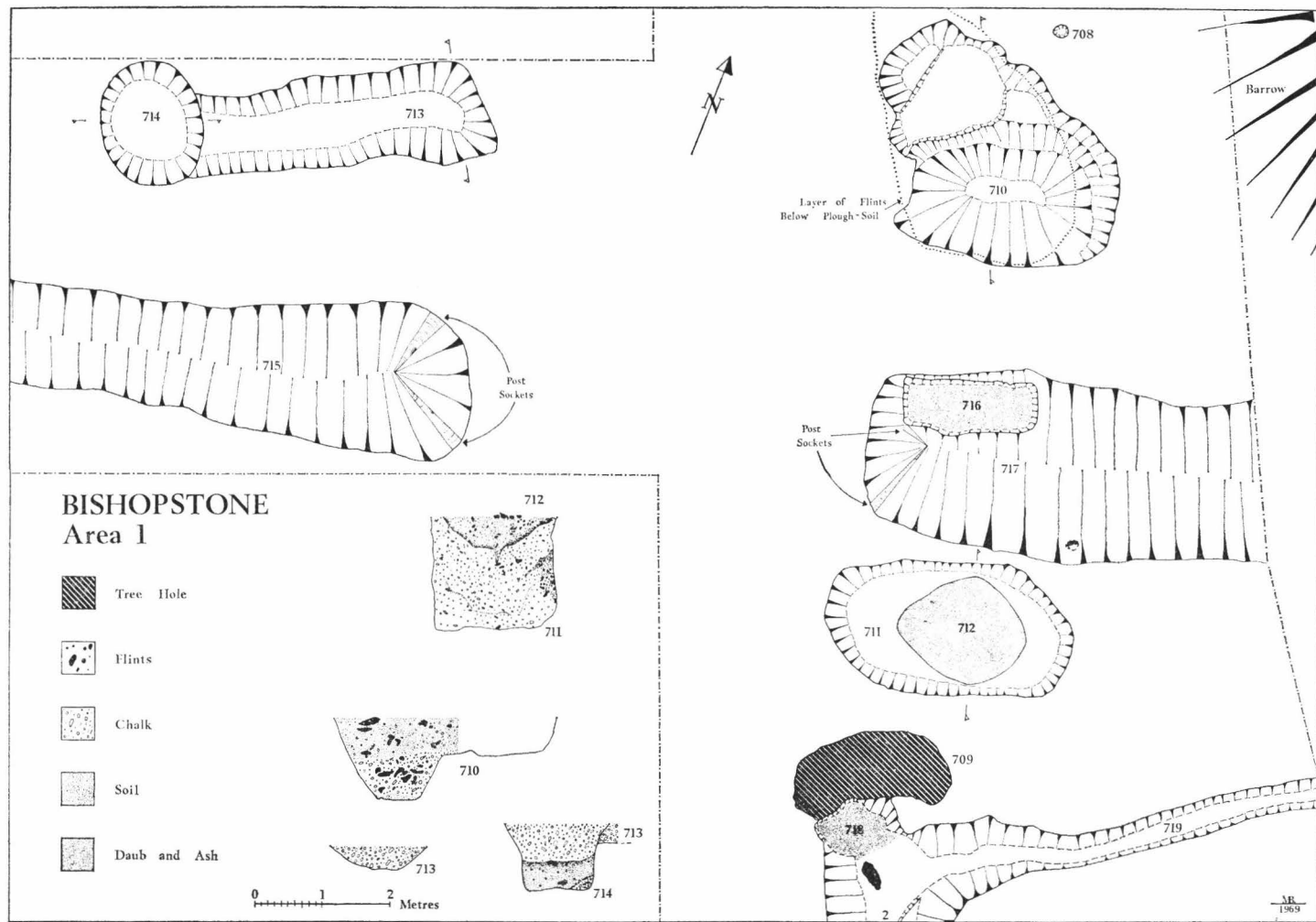


FIG. 5. Features of all periods in area 1, on the north edge of the excavation

76, 100 and 111, and a sherd of Neolithic type A pottery. Rather more productive was the adjacent feature 616 with 112 by-products and 14 tools which included Nos. 77, 82 and 92. On a similar alignment to these two was a shallow gully, No. 701, which joined pits 663 and 700. These two pits were Neolithic and had an identical fill to 701 which however contained no finds. Feature 713 also lacked artifacts but its fill was similar to that of the Neolithic features; an Iron Age pit (714) which had removed its western end contained 13 by-products, a notched piece and a sickle segment (87).

Presumably these gullies were quarries for chalk or, less likely on the Downland, drainage channels. The evidence allows us to go no further but it is perhaps worth recording the presence of similar gullies parallel to the walls of rectangular buildings on continental Neolithic sites.¹ It may well be that on badly eroded chalk sites all that would remain of rectangular buildings are these fugitive traces.

(d) *Small pits* (Fig. 6)

There were six of these: Nos. 619, 620, 663, 696, 700 and 706. They were circular or oval in plan and bowl-shaped in profile. The diameter varied between 2m. and 84 cm., and the depth between 50 cm. and 28 cm. With the exception of 620 all produced flintwork but only one artifact, No. 78 from Pit 706, is illustrated. Pits 619, 663, 696, 700 and 706 contained Neolithic sherds of type A, and 620 produced a sherd of type C. In addition a flake of foreign stone, possibly from a polished axe or pebble (S2), was found in Pit 700, and in Pit 706 was a sarsen rubber (S4).

It seems likely that these were storage pits. They are of similar size and profile to the majority of the 200 pits at Hurst Fen most of which, it was argued, were used for the storage of cereals.² A rather different function is suggested in the specific case of Pit 663. At the base of this was a layer of puddled chalk with apparently a little clay to indicate that it might have been used for the collection and storage of water.

(e) *Ditch* (Fig. 106)

A single example, Feature 959, located beneath a positive lynchet. The short length of ditch found in two adjoining trenches diverges to the west of the present lynchet line. On its downhill side it has been truncated by a negative lynchet but the approximate original dimensions may be reconstructed as 70 cm. wide by 60 cm. deep. The fill was chalk rubble cemented by calcium carbonate; it contained 222 by-products and one utilised piece. It is assigned to the Neolithic period on the basis of the lynchet stratigraphy which suggests that this ditch lay at the edge of a Neolithic field; it will therefore be further discussed in the section on the field system.

(f) *Small scoops* (Figs. 3 and 6)

There were two of these. No. 516 was 45 cm. in diameter by 4 cm. deep and contained a single flake. The second was No. 617, 1.5m. by 70 cm. and 20 cm. deep, in which were 8 by-products and one utilised piece.

¹ For Bandkeramik examples see: *Palaeohistoria*, vol. 6-7 (1958-9), where a number of sites in the Dutch province of Limburg are discussed, notably Sittard, pp. 33-120 and Geleen, pp. 121-162.

² J. G. D. Clark, E. S. Higgs and I. H. Longworth, 'Excavations at the Neolithic site at Hurst Fen, Mildenhall, Suffolk, 1954, 1957 and 1958,' *P.P.S.*, vol. 26 (1960), pp. 202-245.

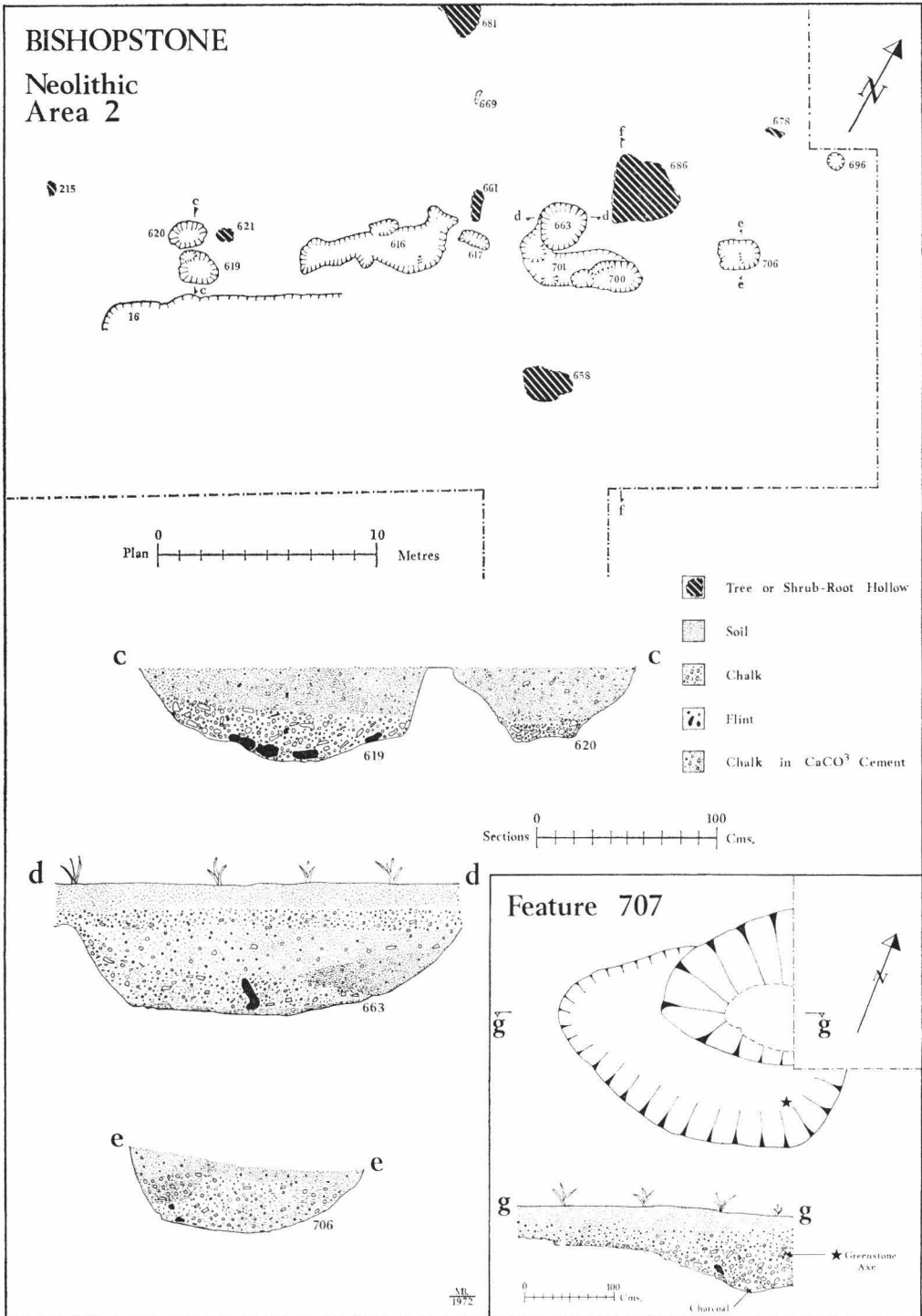


FIG. 6. Plans and sections of Neolithic features in area 2 and feature 707

Having discussed the various types of feature it now remains to review their distribution on the site. In so doing we must bear in mind that other features have almost certainly been totally eroded away. The clearest nucleation is that of gullies and all the small pits in the south east corner of the excavation. Considering what has already been said about the possible function of these gullies, this might be interpreted as the remains of a domestic area. It should however be emphasised that the features were not particularly rich in pottery or food debris. A second group of Neolithic features on the northern edge of the excavation also displayed a notable paucity of domestic refuse except for flints. By far the richest source of all classes of material was the seemingly fairly isolated Pit 357. Further conclusions about the disposition of features are necessarily subjective. However, the central area is free of all except tree or shrub root hollows. In fact the Neolithic features seem to be round the periphery of the excavations, roughly disposed on the line of the later Iron Age enclosure, and just possibly therefore forming a rough circle of diameter about 115m.

THE NEOLITHIC POTTERY (Fig. 7)

Pit 357 produced 153 sherds derived from a minimum of 32 vessels which form the basis of this account. There were only 17 other sherds of pottery found in the remainder of the Neolithic features. However the overall total is augmented by 181 pieces from post-Neolithic contexts and from the lynchet.

Six sherds were examined in thin section by C. R. Cartwright and A. J. Woods. On this basis, and by visual inspection of the remainder of the sherds, it was possible to identify four distinctive fabric types. The percentage occurrence of these fabric types is given in terms of the Pit 357 assemblage.

Type A (Vessels 1-14, 18-20)

Predominant amongst the pottery was that with a filler of coarse calcined flint. These accounted for 87% of the sherds, or 62.5% of the vessels. The sherds were generally poorly fired and roughly finished. The clay used contained minute quartz grains and grains of iron oxide, both of which occur naturally in clays within 2 km. of the site.

Vessel 1 is a round-based bowl with a prominent carination round its girth made by pinching. It is surprisingly thin and roughly finished, with large pieces of calcined flint projecting from the surface. The interior is oxidised orange, as is the zone above the carination. Towards the base the vessel has been blackened by sooting, suggesting perhaps its use over a fire.

Vessel 2, the only decorated member of this type, is thin bodied and poorly finished. The decoration consists of roughly incised lines which are transverse along the flat top of the rim, and approximately vertical of variable length on the outside of the vessel.

Vessel 3. A fragment from a raised lug with vertical perforation. The ware is black and poorly fired, with traces of a smoothed and somewhat burnished surface in places. Use has had the effect of burnishing the perforation.

Vessel 4. A thick sherd by comparison with the other vessels, it has a red oxidised exterior surface below which the vessel is grey to black. The surface is poorly preserved, and very irregular. The impression is of a rusticated finger-printed design, but certainty is impossible with so fragmentary a sherd.

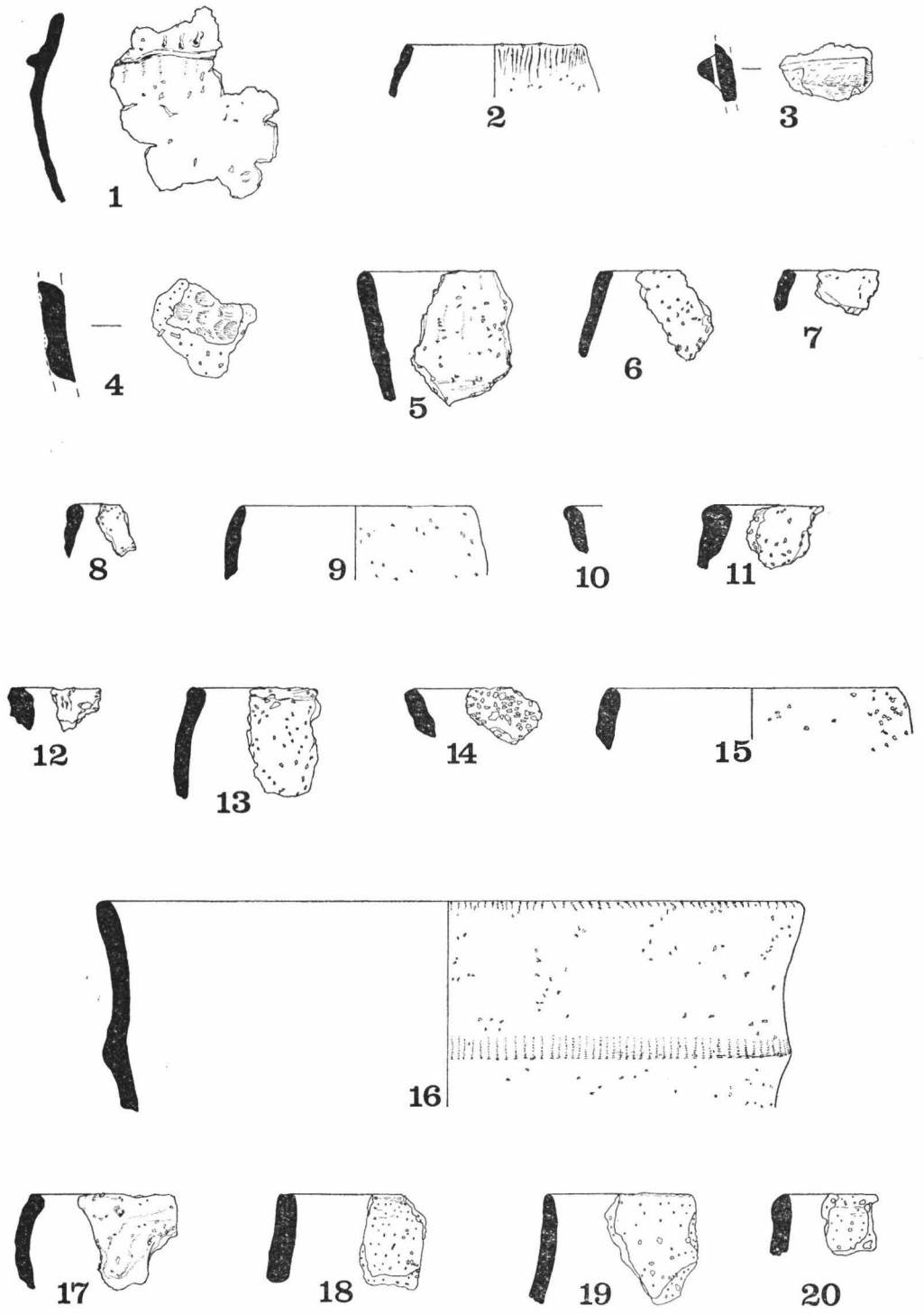


FIG. 7. The Neolithic pottery

Vessels 5-10. Plain rimmed sherds from bowls with apparently straight sides. No. 8 has a slightly thickened rim made by drawing the vessel up and folding it over on the body, a process which resulted in a slight flaw visible in the rim section. A much thicker, flat-topped, rim is represented by Vessel 11. One rim from the assemblage, No. 12, was everted, here again the rim was made by folding the body back on itself. Vessel 13 has a slight external bead to the rim.

The following other Neolithic features produced sherds of Fabric A:— 700, 4 pieces; 619, 3 pieces; 696, 2 pieces; 711, 2 pieces; and Nos. 620, 616, 663, 706 and 16 each contained one sherd. Three residual sherds of this type are illustrated, Vessel 18 from Anglo-Saxon Structure XLVIII, and Vessels 19 and 20 from the Iron Age enclosure ditch; all are plain rims from bowls.

Type B (Vessels 14 and 15)

These are sherds with a predominant filler of shell. They account for 6.5% of the sherds, or 31% of the vessels. The shell fragments are quite large and evidently deliberate inclusions. None of the pieces was, however, sufficiently large for identification, but some fragments seemed likely to be mussel shells. This is not surprising if the vessels were made locally, in view of the quantity of these shells in Pit 357. Some doubt is cast on a local origin for type B sherds by the identification of fragments of crushed limestone in all four of the sherds of this type which were thin sectioned. This could indicate that the shell is fossil, bearing in mind examples of fossil shells found in Iron Age pottery at Bishopstone, and in Neolithic contexts at Windmill Hill and elsewhere.¹ Two examples of type B, Vessels 14 and 15, have been examined by Dr. John Cooper of the British Museum (Natural History). He suggests that very fossiliferous limestone might originate in the Newhaven outlier of the Woolwich and Reading Beds. However none of the diagnostic fossils found in the Iron Age ceramic were present, and the metamorphosed limestone identified by Caroline Cartwright in one sherd is not from this or any other known source in the locality. Other constituent minerals in the type B sherds are iron oxides and quartz.

Vessels 14 and 15 are plain rim sherds, apparently from straight sided bowls.

Type C (Vessel 16)

Included in this type are nine sherds from a single vessel, which represents 5.9% of the sherds, and 3.1% of the vessels. It is a finer ware, with regular sized calcined flint filler of medium to fine sand grade. The body is well fired and a surface burnish is preserved in places. The clay used appears to have contained quartz grains, some feldspars and opaque iron oxides, nothing in fact which needs to suggest an origin for the clay any great distance from the site itself. Such inclusions are to be expected in clays derived from the Cretaceous Beds.

Vessel 16 is an open mouthed carinated bowl with faint decoration of parallel vertical lines on the carination, and similar oblique lines round the rim. It is reduced black on the interior, and with a yellow/orange colour on the exterior, well fired and very well finished by comparison with other vessels. Two sherds in a similar, though not identical, fabric came from Pits 711 and 620.

¹ I. F. Smith, *Windmill Hill and Avebury* (1965), pp. 43-84.

Type D (Vessel 17)

Represented by a single sherd which accounts for 0.65% of the sherds, and 3.12% of the vessels. The fabric is sandy with large pieces of calcined flint, which in several instances project from the surface of the vessel. The minerals present indicate a fairly local origin. Vessel 17 is a plain rim sherd from a small bowl or cup.

Discussion

Base sherds were absent and the dominant component of the group is the round-based open-mouthed bowl, two examples of which have a carination. Decoration is sparse, being confined to simple designs on two of the thirty-two vessels. Generally similar vessel forms are seen in causewayed camp contexts. Both Whitehawk and the Trundle produced sherds decorated like Vessel 16.¹ Vertically perforated lugs like Vessel 3 were found at Whitehawk² and the cup Vessel 17 is similar to forms at Whitehawk and Windmill Hill.³ One anomaly in the group is the rusticated Vessel 4. Similar sherds do occur at Whitehawk, but there they are generally thought to be associated with the early Bronze Age occupation.⁴ As a whole the Bishopstone pottery belongs to a tradition of round based rather sparsely decorated bowls, which typify what Smith has recently called the earlier Neolithic.⁵

It is particularly interesting that four types of fabric are present in so small a group of pottery. Particularly so since the metamorphosed limestone fragments in type B appear to preclude a local origin in that case. The variety of fabric type could be a result of trade in Neolithic pottery such as Peacock has identified in South West England.⁶ Equally it could reflect the different geological zones which the inhabitants of the site visited in the course of their economic or sociological activities.

THIN SECTION EXAMINATION OF THE NEOLITHIC POTTERY by C. R. Cartwright and A. J. Woods

Six sherds were examined in thin section in the hope that it would be possible to identify the mineralogical components of the filler and the clay used. These sherds represented each of the fabric types identified.

Fabric A. Vessel 3. The major filler is of rounded flint fragments. Infrequent minute quartz grains are scattered throughout the anisotropic clay matrix, and there are iron mineral inclusions. Clay with natural inclusions appears to have been used directly, with the only addition being that of crushed flint fragments.

Fabric B. Body sherd. The main constituent of this sherd was shell, probably mussels, which appear in thin section as long lath-like fragments. Patches of lighter clay and possibly 'grog' occur sporadically in the anisotropic clay matrix. Several large rounded pieces of slightly metamorphosed limestone occur. By comparison with the other sherds this contains a greater concentration of small mineral fragments, predominantly quartz, one large magnetite fragment was noted. In general the quartz grains are small, rounded to sub-angular, the larger exhibiting wavy extinction.

Fabric B. Body sherd. Inclusions of shell fragments are blade-like in form, and apparently aligned parallel to the surface of the sherd. There are also small quartz grains, and a small number of larger grains, a few limestone pieces, and some rounded shell and limestone fragments, which appear to be associated. Patches, streaks and rounded areas of iron staining occur throughout. In this sherd, as in most of the other Neolithic sherds, firing was insufficient to remove the carbon, and this has resulted in a characteristic red/black colour revealed in fragmentation of the sherd body. Low firing temperature is also indicated by the presence of shell which splits at high firing temperatures, due to the expansion of its contained water.

¹ E. C. Curwen, 'Excavations in Whitehawk Camp, Brighton,' *S.A.C.*, vol. 77 (1936), Figs. 1 and 2; and E. C. Curwen, 'Excavations in the Trundle, Goodwood, 1928,' *S.A.C.*, vol. 70 (1929), Figs. 1 and 8 p. 50.

² E. C. Curwen, 1936, op. cit., Fig. 2.

³ E. C. Curwen, 1936, op. cit., Fig. 28, and I. F. Smith, 1965, op. cit., Fig. 15.

⁴ R. P. Ross Williamson, 'Excavations in Whitehawk Neolithic Camp, near Brighton,' *S.A.C.*, vol. 71 (1930), Plate 8.19; and E. C. Curwen, *The archaeology of Sussex* (Second ed. 1954), p. 116.

⁵ I. F. Smith, 'The Neolithic,' in C. Renfrew (ed.), *British prehistory* (1974), pp. 100-136.

⁶ D. P. S. Peacock, 'Neolithic pottery production in Cornwall,' *Antiquity*, vol. 43 (1969), pp. 145-149.

Fabric B. Body sherd. Numerous shell fragments in an anisotropic clay matrix. Some fragments were aligned to the surface of the sherd. Small infrequent quartz grains exhibit irregular extinction. There are sporadic crushed limestone fragments.

Fabric B. Body sherd. The inclusions are broadly as above. Rounded limestone fragments were noted.

Fabric C. Vessel 16. Abundant filler in this sherd subdivides into four major categories. Of these the largest fragments are angular to rounded flint pieces. There are numerous quartz grains, usually simple, but two are composite. Some of the larger grains exhibit wavy extinction, and most are rounded. Small amounts of feldspar and opaque iron minerals also occur.

Fabric D. Vessel 17. Numerous very small angular single quartz grains occur in this sherd body, together with a few angular fragments of flint and patches of iron staining. The thin section shows the quartz grains to be in line, which presumably reflects the way the pot was made.

THE FLINT INDUSTRIES¹

Flint tools and waste were common not only in Neolithic features but also in Iron Age, Romano-British and Anglo-Saxon contexts throughout the excavated area. The vast majority from the later contexts were Neolithic in type, but there were also a few pieces of Beaker and Bronze Age date. Much basic information about the industries is contained in Table I. This gives the contents of each of the sixteen Neolithic features, the collective contents of three Bronze Age features, and lists residual flints from Iron Age and later contexts.

The retouched tools have been divided into twenty-one types, and with two exceptions² there is an illustration of each type, the illustration numbers being given in the final column of the table. The hope is that this form of presentation will contribute eventually to the development of a type series for the British Neolithic as a surer basis for the comparison of tools, and thus of activities undertaken, on a variety of sites.

Consideration of the character and function of the Neolithic assemblage, the raw materials exploited and the ways in which tools were utilised depends on the stratified groups, largely in fact on that from Pit 357.

PIT 357

The Raw Materials

Examination of the flint artifacts and waste from all over the site showed that the raw materials had been derived from five distinct sources. Each of these types was represented in Pit 357 from which the percentage occurrence of each type was calculated.

Despite the fact that five sources of raw material were being exploited the vast majority, some 97.39% of the 769 pieces, were of Type A. The body (core of the nodule below the cortex) is patinated white with areas of light blue, and the cortex is a white/brown colour. No distinction can be made between these and the flints which occur naturally on the site, some of them may well have been found during the making of the pit itself.

Raw material of Type B accounts for some 1.43% of the pieces. The body of the flint is similar to Type A. What distinguishes it is that the protuberances of the nodule are a little

¹ I am grateful to Mrs. Rosemary Rendall who catalogued flints from the 1969-70 excavations, and to Dr. M. H. Newcomer for helpful advice.

² These are two poor examples of 'beaked pieces' and one possible burin.

TABLE 1. The flint industries. The numbers of the illustrated tools from each Neolithic feature and each tool type are given in the bottom and right hand columns. Illustrated pieces not listed in the bottom column are from Iron Age and later contexts or the lynchet.

	Neolithic Features																		Bronze Age	Iron Age and later	Lynchet	Total	Illustration Nos.
	357	570	516	599	16	619	616	617	663	700	706	696	686	710	711	959							
Wholly cortical flakes	} 661	-	1	-	30	7	18	-	3	34	1	1	-	4	8	-	1	154	47	309	-		
Partially cortical flakes		46	-	2	-	14	42	2	25	17	16	1	-	39	39	56	6	1690	472	2467	-		
Wholly non-cortical flakes		16	-	-	13	9	18	3	8	8	5	1	-	18	28	49	4	791	448	1419	-		
Chips	-	-	-	-	8	2	24	2	-	-	-	-	-	1	10	94	-	149	63	353	-		
Cores	3	8	-	-	-	1	6	-	3	2	4	-	-	-	3	17	-	84	9	140	-		
Hammerstones	9	-	-	-	-	-	4	1	-	1	1	-	1	-	2	6	-	52	6	83	-		
Flake axe	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1		
Polished axe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1+	62, 63		
Axe roughout	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	64		
Choppers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	2	65, 66		
Leaf arrowheads	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	7	2, 3, 67-71		
End scrapers	10	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	27	12	50	4-13, 72-75		
Side scrapers	1	-	-	-	1	-	1	-	-	-	1	-	-	1	1	-	-	17	7	30	14, 76-80		
Hollow scrapers	-	-	-	-	-	-	2	-	-	-	-	-	-	2	1	-	-	5	-	10	81-85		
Serrated flakes	43	-	-	-	-	1	3	-	-	1	-	-	-	-	2	-	-	10	7	67	15-57, 86		
Blade segments	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	7	14	58, 87-91		
Backed knives	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	2	1	4	92-94		
Bifacially flaked knife	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	95		
Fabricator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	96		
'Rod'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	97		
Notched pieces	-	-	-	-	-	-	2	-	1	2	2	-	-	1	4	-	1	33	14	60	98		
Awls	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	1	3	99-100		
Tranchet flake or axe frag.	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	2	101		
Beaked piece	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	2		
Burin	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-		
Discoidal & thumb nail scraper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	1	8	102-103		
Barbed & tanged arrowhead	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	104		
Other retouched pieces	5	1	-	-	1	1	4	-	4	1	1	-	-	3	1	-	-	86	50	158	59-61, 105-116		
Other utilised pieces	34	-	-	-	-	-	2	1	-	4	-	-	-	-	3	1	-	82	45	172	117		
Total	770	71	1	2	54	35	128	9	44	70	31	3	1	72	103	223	13	3206	1195	6031	Tool total 427		
Illustration Numbers	1-60	-	-	-	76, 111 100	-	77, 82 92	-	-	-	78	-	-	64, 83, 75, 79 84, 95, 86, 81	-	-	-	-	-	-	-		

battered as the result of transport by running water. The nodules lack the all-over battering and rolling of beach cobbles, yet there is no obvious riverine source which would have been available in the Neolithic. Since they are of a flint similar to that available on the site, the most likely source is the river/estuary cliff which runs round three sides of Rookery Hill. Such material may well have been available at the base of the cliff some 370m. south east of the pit.

Type C was represented by five pieces, 0.65% of the total; they had a green-brown stained cortex showing them to be derived from a Tertiary solution hole, one of which was cut into by Pit 357. Alternatively they could have come from an outcrop of Clay-with-Flints, such as occurs some 270m. west of the pit.

Three flakes were of Type D, 0.39% of the assemblage. The surface of the nodule exhibits heavy rolling and battering showing that these are flakes from beach boulders. They would, one imagines, then have been available near the foot of Rookery Hill.

So far as we can tell, the raw material of Types A-D, which collectively account for 99.86% of the pieces in Pit 357, was obtained locally; this is probably not the case with Type E which has been carefully compared with the remainder of the assemblage and found to have a distinct white body with areas of light brown staining. The single artifact in question is a flaked axe which seems likely to be a flint-mine product. This axe has been analysed by the British Museum Research Laboratory as part of their flint analysis programme.¹ The programme is designed to analyse flint axes for a selected group of trace elements and, by a suitable statistical treatment of this data, to assign them to the most likely sources among a selected set of flint-mines and surface workings.² Unfortunately the final results of this analysis were not available in time for inclusion in this report.

Microscopic Analysis of the Traces of Wear

The flints from Pit 357 were distinguished from the remainder of the Bishopstone assemblage by an almost complete absence of damage such as might result from weathering on a ground surface; delicate edges were intact and the ridges between flake surfaces seldom showed signs of rounding. This makes them a suitable subject for microscopic study of the method of tool production and the traces of their utilisation. The tools were examined under a binocular microscope at magnifications of between X4 and X25. Direct sunlight provided the optimum conditions particularly for the detection of polish. The scope of this study is naturally restricted by the low magnifications used, and by the fact that the tools are patinated. The latter reduces the potential for micro-wear studies since scratches, like those interpreted with such skill by Semenov,³ are seldom visible on patinated tools. It was however possible to detect areas of polish, utilisation, and sometimes even fine retouch not immediately visible to the naked eye.

Of these, utilisation, better called edge damage, is the least easy to interpret. Frequently it is argued that this may be the result of events after abandonment of the piece, but in this well preserved and generally undamaged assemblage that would not seem to be a major caveat. When observed under the microscope certain edges, or parts of edges, both retouched and unretouched, had regular chips on both surfaces. This sometimes coincided with polish and was apparently a result of utilisation. An extreme case was the very heavy chipping of the edge of certain end scrapers.

¹ I am grateful to Mr. G. de G. Sieveking for arranging this analysis.

² G. de G. Sieveking et al., 'Prehistoric flint mines

and their identification as sources of raw material,' *Archaeometry*, vol. 14 (1972), pp. 151-176.

³ S. A. Semenov, *Prehistoric technology* (1964).

Bishopstone Pit 357

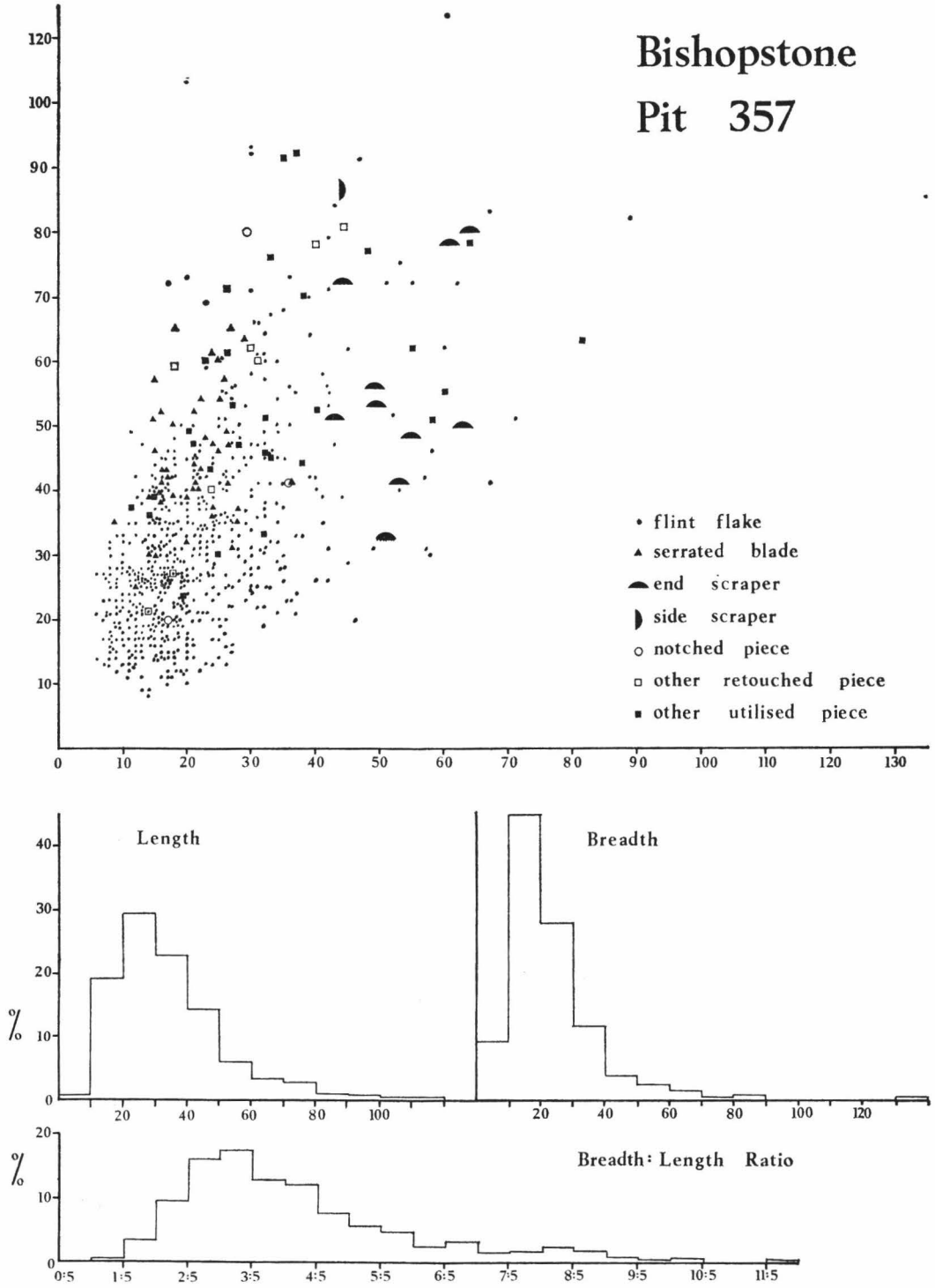


FIG. 8. The Neolithic flint industry from pit 357; measurements of flakes and tools (in mm.)

Two distinct types of polish or gloss could be recognised. The first was an edge polish confined very largely to a narrow band on the retouched margins of tools, most notably on serrated blades. This type was clearly the result of utilisation of the tool. The second type consisted of small areas of brilliant gloss which was not restricted to the working edges of artifacts. It has been noticed on the protuberances of bulbs of percussion and near the edges of pieces, areas in fact which might well have been polished during use. Conversely it also occurred on one flint which showed no sign of *débitage*, let alone retouch. Such a piece might arguably have been used as a palette or rubber, but the issue remains to be settled by work at higher magnifications. It may in fact be that these small areas of brilliant gloss represent anomalies in the microcrystalline structure of the flint.

When the edges of tools were magnified it was possible, on a serrated blade for instance, to compare areas of the edge which were as fresh and sharp as when they were made, with other areas where the teeth were worn and rounded. Such comparisons begin to make possible an assessment of the tasks which resulted in the degree and types of wear observed. The specific results of this examination are discussed below under the various types of tools, and the traces observed are indicated by symbols on the drawings.

The Flakes (Fig. 8). The 754 waste flakes and flake tools were all measured for length, breadth and breadth: length ratio according to the method now widely used for the comparison of Neolithic assemblages.¹ Length was taken to be the greatest measurement on the axis of percussion, and breadth the greatest measurement at right angles to the latter. The breadth and length statistics of each piece are presented on a scatter diagram, which has the advantage of giving actual measurements and enables the dimensions of tool types to be compared with those of the waste. The graph is divisible into three main areas:—(i) short narrow pieces, few of which are tools, in the bottom left hand corner. (ii) An area of longer narrow pieces often retouched to form serrated flakes. (iii) Larger pieces of roughly equal dimensions some of which are scrapers. Other retouched pieces, most of which are probably knives, and utilised pieces show a less restricted size range but do have a tendency to lie at the long moderately narrow end of the range.

The same series of measurements are presented as histograms which have been compared to graphs of assemblages from Alfriston long barrow,² the old land surface at Broome Heath,³ the primary levels at Windmill Hill⁴ and Late Neolithic levels at Durrington Walls.⁵ There is a very good general similarity between the series from Pit 357 and the Windmill Hill group. The majority of the flakes were smaller in both dimensions than those from Alfriston, Broome Heath and Durrington Walls. A rather anomalous feature of the Bishopstone assemblage is the number of flakes (18%) with a breadth:length ratio of more than 5:5; this curious 'tail end' to the distribution might of course be a function of the raw material.

A good proportion of the flakes retained some cortex on their dorsal surface; 54.9% were wholly non cortical and 45% were partially cortical. Pieces with a wholly cortical dorsal surface were not individually counted but were very few. The impression given is that cores were reduced by working systematically round the periphery in such a way that many of the removals had cortex on one half of their back. Pieces partially backed by cortex seem to have been favoured for tools since the proportion of partially cortical material among the tools (52.2%) is greater than that of partially cortical material among the waste (43.7%).

Cores. A remarkable feature of this pit group is the paucity of cores, three only, giving a core to waste flake ratio of 1:277. This will be discussed below in connection with cores found elsewhere on the site.

Hammerstones. Two intact examples, one of which was large and probably used as an anvil. Seven fragments were present.

TYPOLOGY (Figs. 9-13).

All the retouched tools from Pit 357 are illustrated with the exception of three pieces with only very small areas of retouch. Where no mention is made of the raw material it is of Type A. The description of each type is followed by its percentage importance in the Pit 357 toolkit. Two figures are given, the first being the percentage of the 63 retouched tools, and the second the percentage of the 98 retouched and utilised pieces. Hammerstones, though perhaps tools *sensu stricto*, have been excluded.

¹ I. F. Smith, 1965, *op. cit.*, pp. 89-91: and G. J. Wainwright and I. H. Longworth, *Durrington Walls: excavations 1966-1968*, Report of the Society of Antiquaries (1971), pp. 156-181.

² P. Drewett, 1975, *op. cit.*, pp. 131-2.

³ G. J. Wainwright, 'The excavation of a Neolithic settlement on Broome Heath, Ditchingham, Norfolk, England,' *P.P.S.*, vol. 38 (1972), pp. 46-68.

⁴ I. F. Smith, 1965, *op. cit.*, pp. 89-91.

⁵ G. J. Wainwright and I. H. Longworth, 1971, *op. cit.*, p. 163.

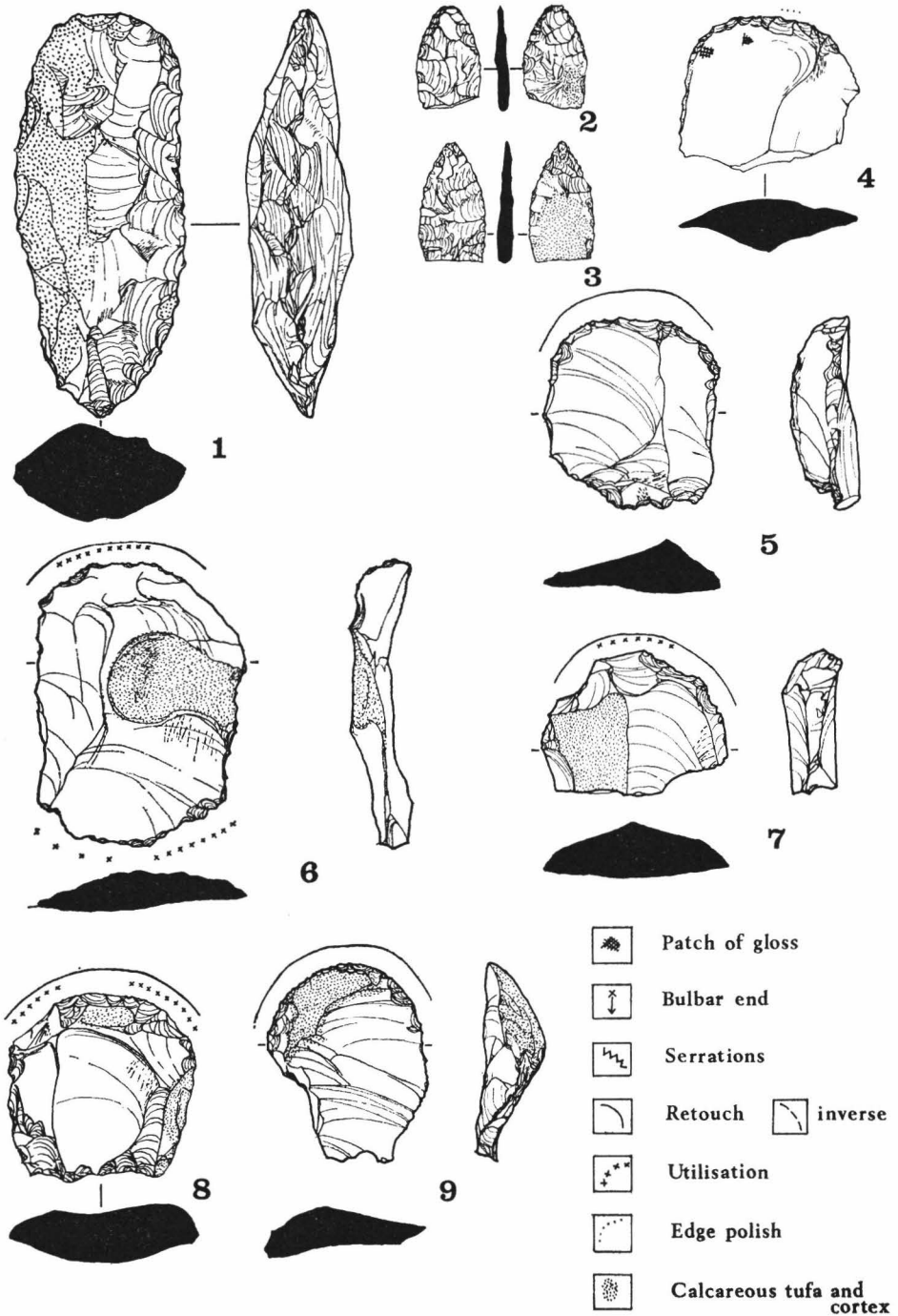


FIG. 9. The Neolithic flint industry from pit 357, nos. 1-9, with a key to symbols. Scale $\frac{1}{2}$

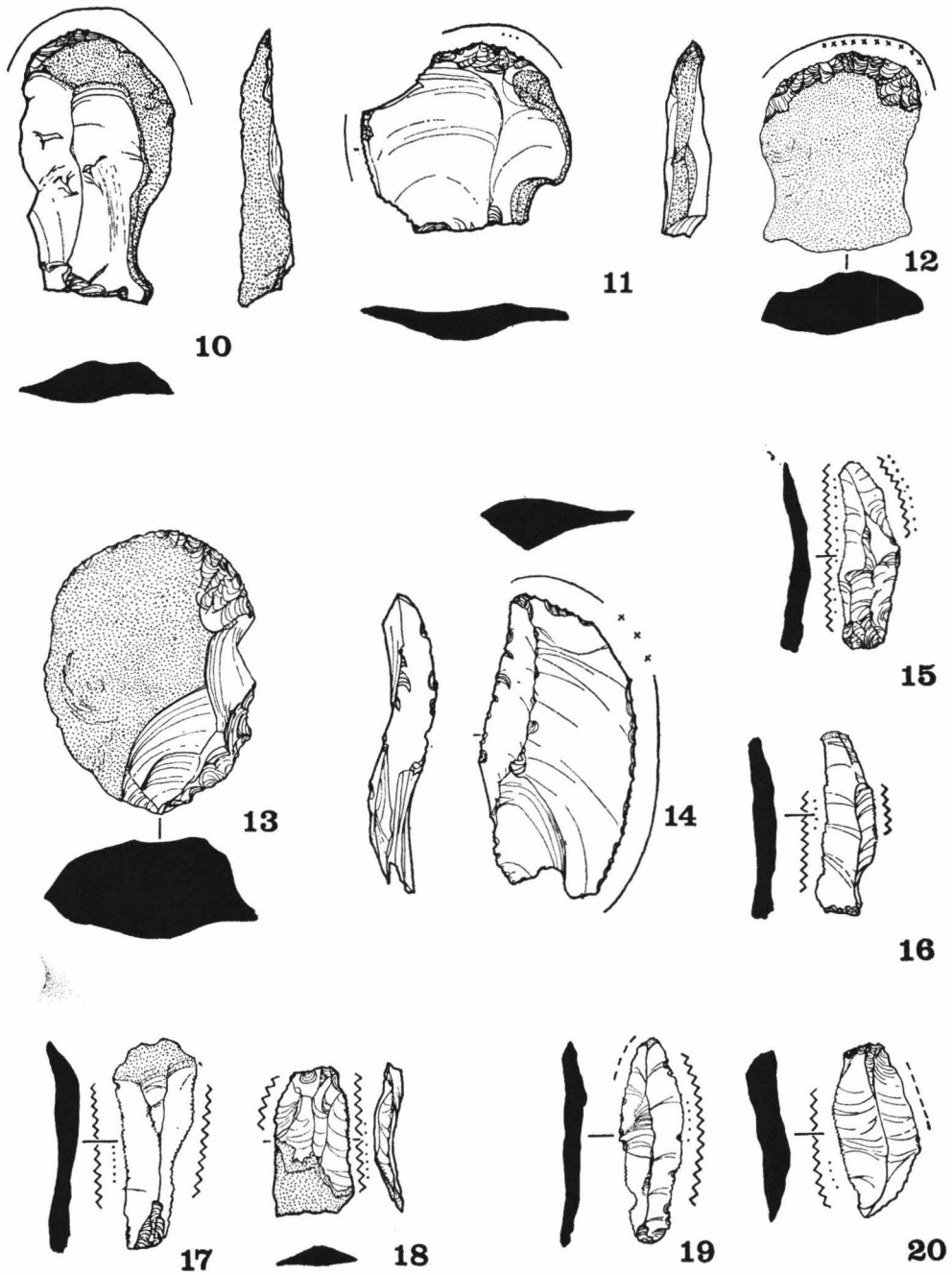


FIG. 10. The Neolithic flint industry from pit 357, nos. 10-20. Scale $\frac{1}{2}$

Axe (1) A chipped axe without any trace of polish. The piece is wholly non-cortical but part of the surface is obscured by a deposit of calcium carbonate. The flint is Type E and as the sole representative of this type the axe is likely to be a flint-mine product.¹ 1.5% of retouched tools and 1% of retouched and utilised pieces.

Leaf Arrowheads (2 and 3). Two very neatly made thin examples, both with breakages at one end and calcium carbonate over part of the surface. 3.1% of retouched tools and 2% of the retouched and utilised pieces.

End Scrapers. (4-13). These were made on pieces which fall at the large end of the size range, and which are generally nearly as broad as they are long. Nos. 4 and 7 had the bulbar end missing. No. 6 was double ended, that is to say the distal end was retouched, but both this and the proximal end showed signs of heavy edge damage. Extensive damage to the scraping edge was also seen in number 7, where use had rounded the ridges between retouch scars, and on Nos. 11 and 12. No. 4 had two small patches of brilliant gloss near the edge on the dorsal surface; in addition there was a small area on a protruding part of the bulbar surface, and a small area of polish on the scraping edge. Nos. 8 and 11 had very small areas of possible polish on the scraping edge.

One possible explanation for the heavy edge damage on some of these pieces and the gloss on three examples is that they were used for woodworking. They account for 15.6% of the retouched tools and 10.2% of the retouched and utilised pieces.

Flake with edge retouch, possibly a side scraper (14). A flake with a steeply retouched convex side. The retouch is interrupted by an area of edge damage, and the bulbar end of the piece is missing. 1.5% of the retouched tools and 1% of the retouched and utilised pieces.

The serrated flakes (15-57). Forty-three pieces which form the dominant tool of the Pit 357 assemblage. They are mostly made on parallel-sided blades with small platforms. The retouched sides are generally fairly straight, but in seven instances they are slightly concave. Thirty-four of the examples (79%) are partially cortical. They are all of raw material Type A, with the exception of No. 34 which is of Type C.

The pieces are retouched with between 8 and 20 tiny serrations to the centimetre, the average being eleven. The serrations were always made from the ventral surface, presumably by cutting into the blade with another flint. In the case of Nos. 22, 38 and 48, the serrations were particularly carefully and neatly made. In these and other instances the worked edge showed little wear, and the denticulations were neat 'V'-shaped or narrow 'U'-shaped notches with some sharp edges intact. Others, for example 25 and 27, were heavily worn and damaged by use. On several examples there were one or two undamaged denticulations at one end of the retouched area as if they had been protected by a handle. Other denticulations on the same piece were frequently rounded, worn and occasionally chipped. A comparison of worn and unworn denticulations on the same tool showed that most of the implements had been used fairly extensively, but in a way which had caused rounding rather than secondary chipping of the edge. On pieces where both edges were serrated one generally exhibited more wear than the other.

In at least five examples the bulbar end was removed, and in one instance there was a break at the distal end. These pieces, particularly No. 35, may have been elements in composite sickles or knives. Others of the blades are likely to have been held in the hand as suggested by five pieces with inverse blunting retouch on the edge opposite the serrations, and three pieces with direct blunting retouch. Seven pieces retouched on one side with serrations showed signs of utilisation on the other edge. Three of the serrated blades, Nos. 55-7, also had notches, 55 had a small inversely retouched notch in the middle of the serrated edge. 56 had a small retouched notch on the proximal end of the serrated area. 57 is perhaps best referred to as a composite tool with two quite large retouched notches at the distal end, one straight serrated edge and the opposite convex edge showing edge damage, furthermore the bulbar end of this piece has been snapped off.

Thirty-four of the serrated flakes (79%) have a narrow band of polish along the teeth. In the majority of cases this was only as wide as the teeth were deep, about 0.25mm; two examples Nos. 22 and 57, had more extensive polish over the surface. Edge polish on Neolithic serrated blades was recognised in the late 1920's by Dr. E. C. Curwen who, as a result of his pioneering experiments, concluded that it was the product of cutting a plant material rich in silica.² Narrow bands of polish, like that noted on the Bishopstone tools, was thought by Curwen to be caused only by use on wood. But recent experiments by Dr. M. H. Newcomer have produced similar narrow bands of polish on flint sickle segments used to cut cereals.³ We may conclude that these serrated blades were probably used for the cutting of grasses. That this was an important activity on the site is shown by the fact that they account for 67% of the retouched tools, and 43% of the retouched and utilised pieces in Pit 357.

Blade segment (58). This piece has had both its bulbar and distal ends removed. The right hand edge on the illustration has numerous small chips, mostly on the ventral surface, and presumably as a result of utilisation. The opposite edge is retouched. This and the ridges on the dorsal surface are heavily worn and rounded by use, which is also manifested by an area of edge polish on the retouched area. The piece seems likely to be a segment from a sickle or knife. It forms 1.5% of the retouched tools and 1.0% of the retouched and utilised pieces.

Other retouched flakes (59-61). Four flakes (three illustrated) had one retouched side. In the case of No. 59, the opposite side of the blade had suffered edge damage and at its distal end was an inversely retouched notch. No. 60 simply had direct retouch and edge damage down one straight side. No. 61 had direct retouch on part of one side and inverse retouch down the whole of the other side. These pieces account for 4.7% of the retouched tools and 3% of the retouched and utilised pieces.

¹ See section on the raw materials above, p. 19.

² E. C. Curwen, 'Prehistoric flint sickles,' *Antiquity*, vol. 4 (1930), p. 179, and 'Agriculture and the flint sickle in Palestine,' *Antiquity*, vol. 9 (1935), pp. 62-66.

³ I am grateful to Dr. Newcomer for discussing this question with me.

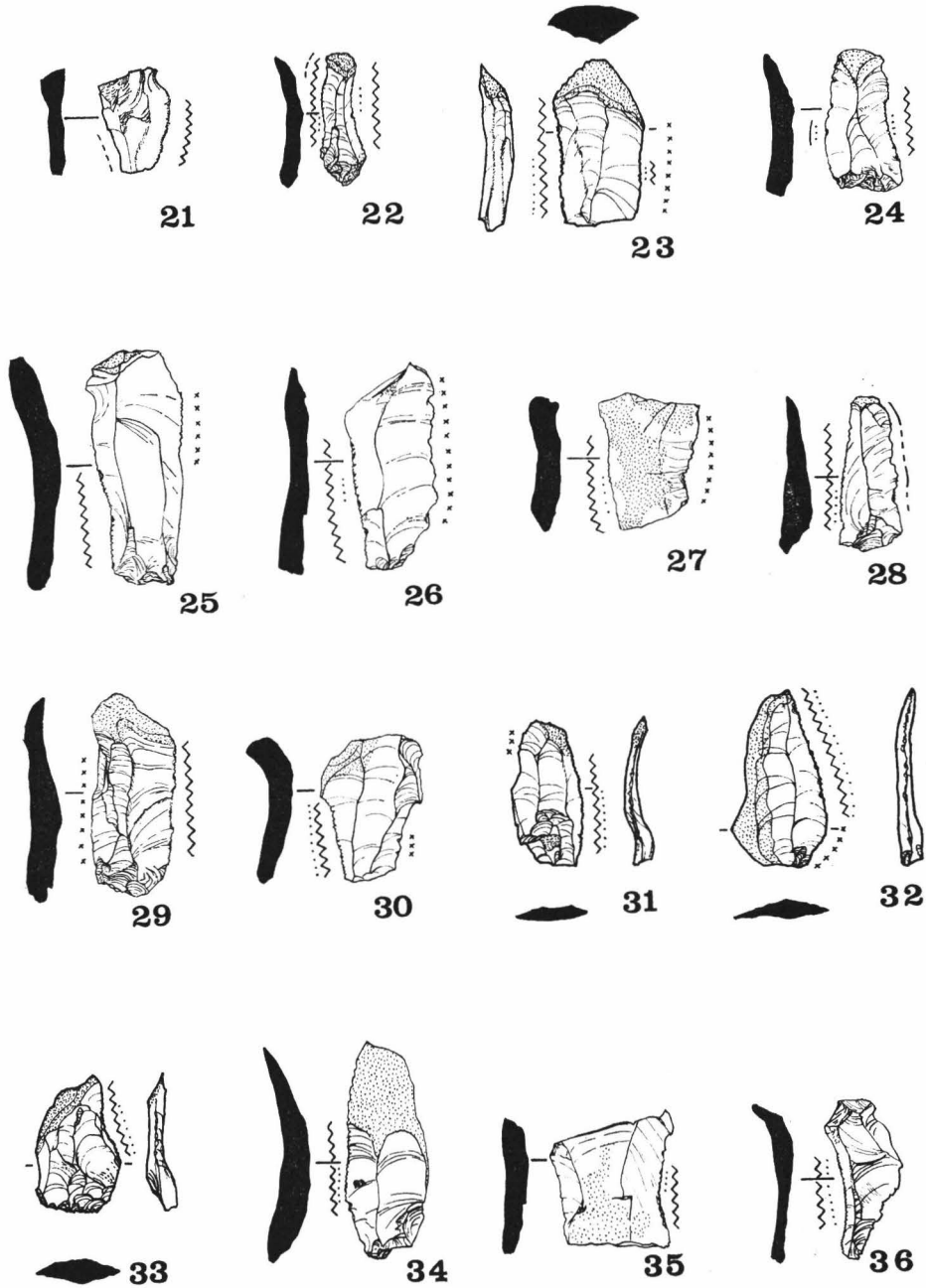


FIG. 11. The Neolithic flint industry from pit 357, nos. 21-36. Scale $\frac{1}{2}$

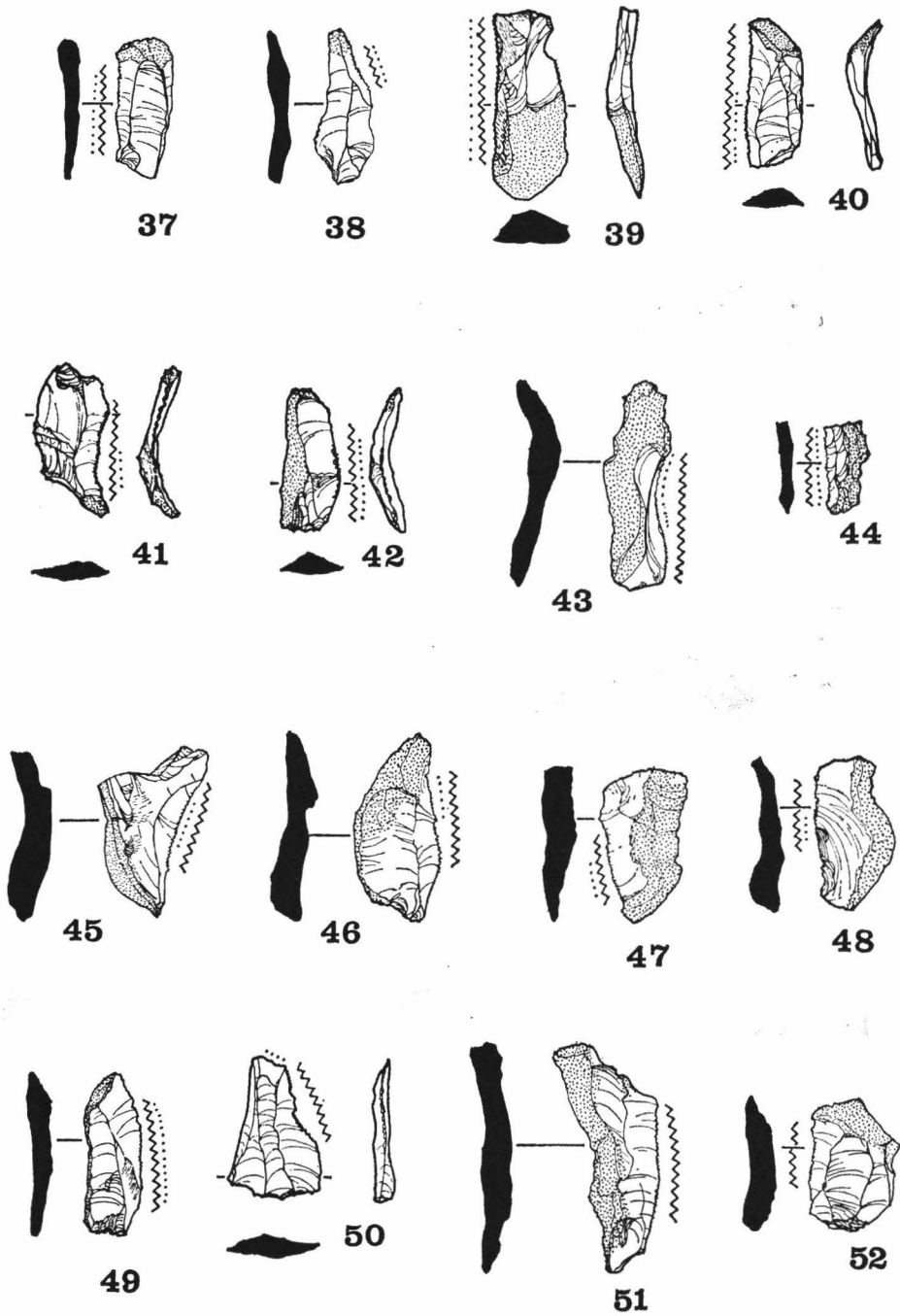


FIG. 12. The Neolithic flint industry from pit 357, nos. 37-52. Scale $\frac{1}{2}$

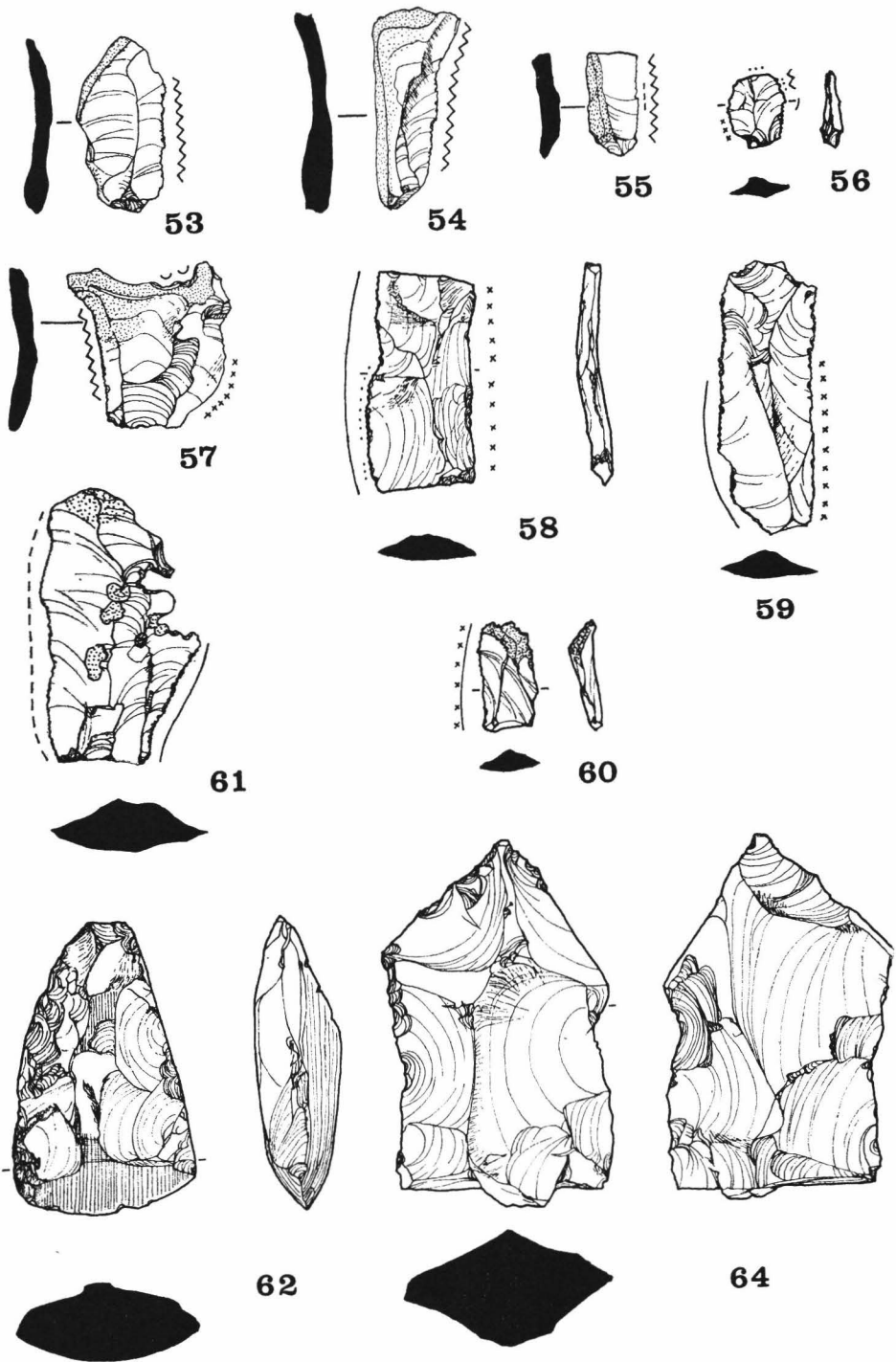


FIG. 13. The flint industry, nos. 53-61, from pit 357; no. 64, pit 710; no. 62, Iron Age ditch. Scale $\frac{1}{2}$

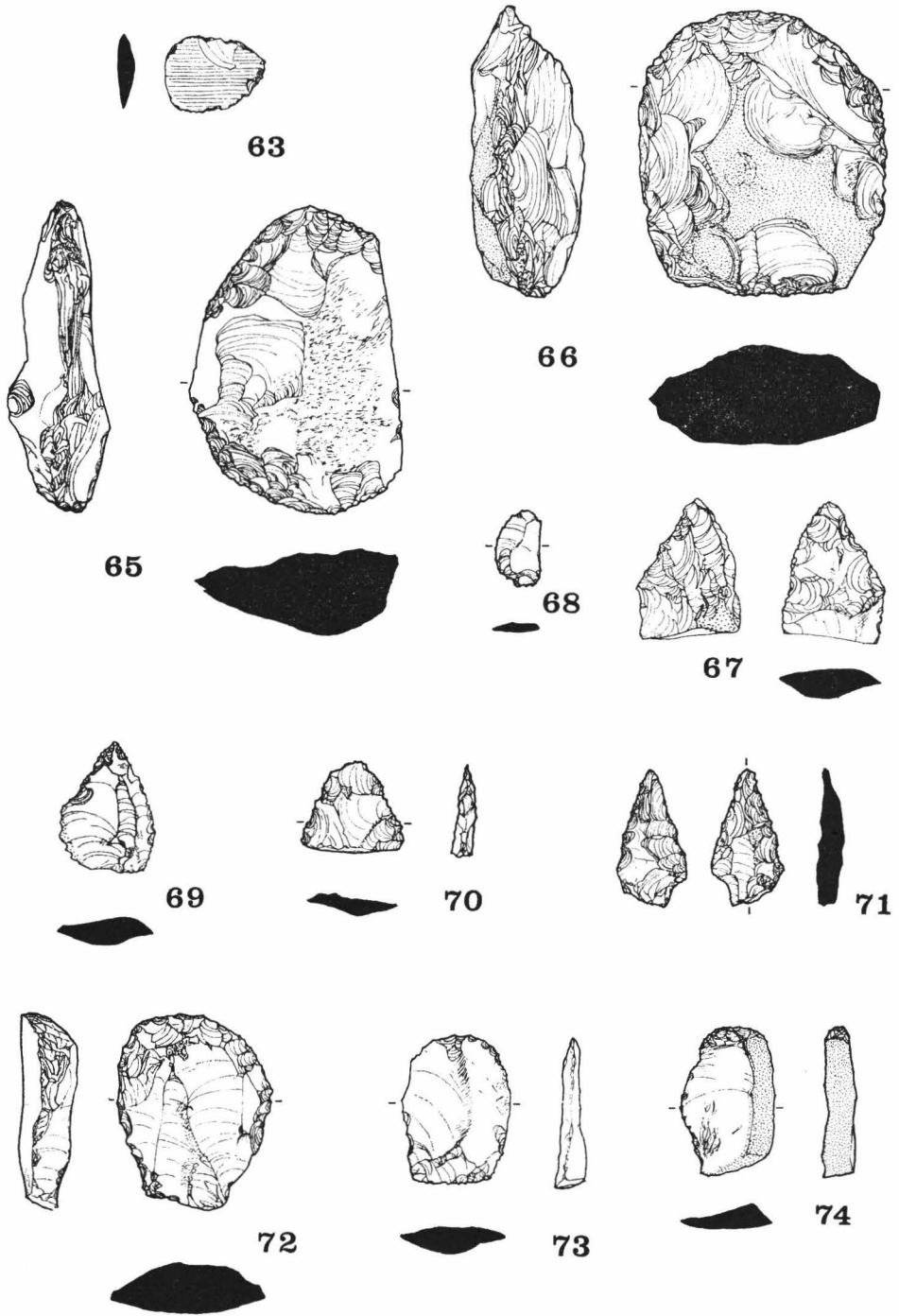


FIG. 14. The flint industry, nos. 63 and 65-74 (nos. 63, 67 and 69 from the lynchet and the remainder from Iron Age and later contexts). Scale $\frac{1}{2}$

'Utilised pieces'. Thirty-four pieces, none of which show extensive signs of damage or abrasion. They do, however, have regular small chips removed from one or more edges, presumably as a result of the utilisation of that edge. Further identification of the causes of this edge damage might result from microscopic studies, which have not yet been undertaken on these pieces. They account for 34% of the retouched and utilised pieces.

FLINTS FROM OTHER NEOLITHIC AND LATER CONTEXTS (Figs. 13-18)

Because of its excellent preservation, and thus suitability for studies of the traces of wear, the Pit 357 group has been independently reviewed. In doing so remarks have been made about the size of flakes, raw materials, use, etc., which are broadly applicable to the industry as a whole and need not be repeated. Other pits did not produce large or exceptionally well preserved assemblages and they are discussed together with derived flints from later contexts, the overwhelming bulk of which are also Neolithic. The contents of each of the sixteen Neolithic pits is given in Table 1, and where pieces discussed come from one of these their findspot is recorded in the text. The number of examples of each tool type given in this section does not include those from Pit 357. Microscopic studies have not been made of these flints, although in some cases polish was noticed.

By-products

Throughout the industry there is a clear predominance of partially cortical flakes—58%, with 33% of wholly non-cortical pieces and 7% wholly cortical pieces. There seems to have been a distinct preference for partially cortical pieces when producing blade based tools. Carefully prepared cores were few, most had multiple platforms, and débitage generally took place bifacially from the equator of the piece, with the flake scar of one removal being used as the striking platform for the next. Most cores had been worked right down to small fragments, just as many were at Windmill Hill.¹

The ratio of waste flakes to cores is 35:1, which is comparable with the figure of 30:1 from Hurst Fen,² but significantly smaller than figures of 57:1 and 78:1 for different contexts at Broome Heath.³ All these figures are in dramatic contrast to the ratio of 277:1 from Pit 357. This suggests that débitage did not generally take place in the vicinity of that pit, a conclusion which is supported by the high proportion (10.9%) of tools to waste flakes.

The number of retouched tools from the entire site is 427, thus 7% of all pieces were converted into tools. This is a rather high total compared with 5.6% at Hurst Fen,⁴ and 3% from the major group B at Durrington Walls,⁵ implying that some of the Bishopstone tools may have been made outside the excavated area.

Axes (62-64). Four pieces which are in a raw material visually similar to that encountered on the site. No. 62 is a polished flint axe with a series of scratches, presumably made during polishing, clearly visible along the axis of the piece. On the cutting edge resharpening has left a slight bevel. The axe was then reflied leaving only the cutting edge and small areas of polish. Two flakes from the reworking of just this kind of implement were found in the lynchet soil, and one (63) is illustrated. Dr. M. H. Newcomer, who has examined them, suggests that they are likely to be the products of deliberate débitage rather than damage during use. No. 64 is a rough bifacially flaked possible axe roughout from beside a hearth in Neolithic Pit 710.

Choppers (65 and 66). Large circular implements of ovate section, bifacially flaked at the periphery which is much battered by use. Neither piece was stratified so they may be residual Palaeolithic tools, but similar pieces are known in Neolithic contexts such as the flint-mines, where they have been called pseudo-palaeoliths.⁶

Leaf-Shaped Arrowheads (67-71). Two distinct types are present; Nos. 67, 70 and 71 with shallow flaking over nearly the whole of both surfaces, and Nos. 68 and 69 with smaller areas of secondary flaking at the edges. No. 69 is bifacially flaked at the tip, whereas 68 is bifacially flaked at the base and could represent an early stage in making a tanged arrowhead. Nos. 67 and 70 are early Neolithic leaf forms, but 70, which is broken at the proximate end, might possibly be a later transverse arrowhead.

End Scrapers (72-75). Forty examples of the same general size range as those from Pit 357 (Fig. 9), the majority are made on partially cortical flakes. One exceptionally thin example (No. 73) is illustrated. Three examples, including No. 72, had traces of brilliant gloss on their ventral surfaces. Only 75 is from a stratified Neolithic context, Pit 711.

Side Scrapers (76-80). Defined as pieces with steep scraper-type retouch along the main axis. Of the illustrated examples, Nos. 76-79 are from Neolithic pits, and No. 80 came from Feature 712, an Iron Age hearth made in the top of Neolithic Pit No. 711.

Hollow Scrapers (81-85). Ten pieces with steep scraper retouch resulting in a concave scraping edge. They are distinguished from notched pieces where the retouched concavity is usually only about 10mm. wide. Some examples, like 81, appear to have been heavily used. This tool type was discussed under the name of horned scrapers by Graham Clark, who suggested that they were particularly predominant in a restricted area near Seaford.⁷ Nos. 81-84 are from Neolithic contexts.

1 I. F. Smith, 1965, op. cit., pp. 87-89.

2 J. G. D. Clark et al., 1960, op. cit., p. 214.

3 G. J. Wainwright, 1972, op. cit., p. 48.

4 J. G. D. Clark et al., 1960, op. cit., p. 214.

5 G. J. Wainwright and I. H. Longworth, 1971, op. cit., p. 158.

6 E. C. Curwen, 1954, op. cit., pp. 122-128.

7 J. G. D. Clark, 'Some hollow-scrapers from Seaford,' S.A.C., vol. 68 (1927), pp. 273-276.

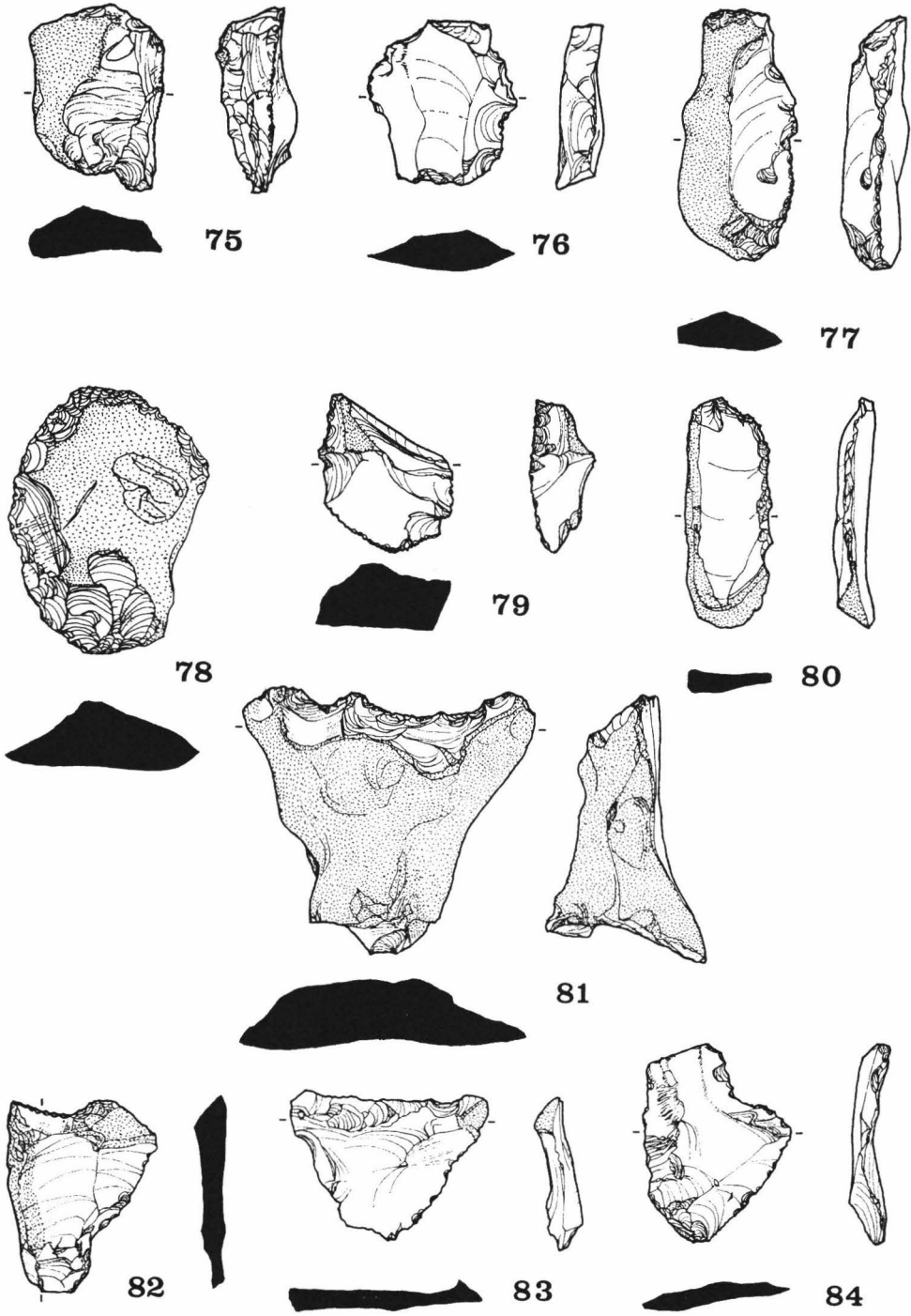


FIG. 15. The flint industry, nos. 75-84. Scale $\frac{1}{2}$

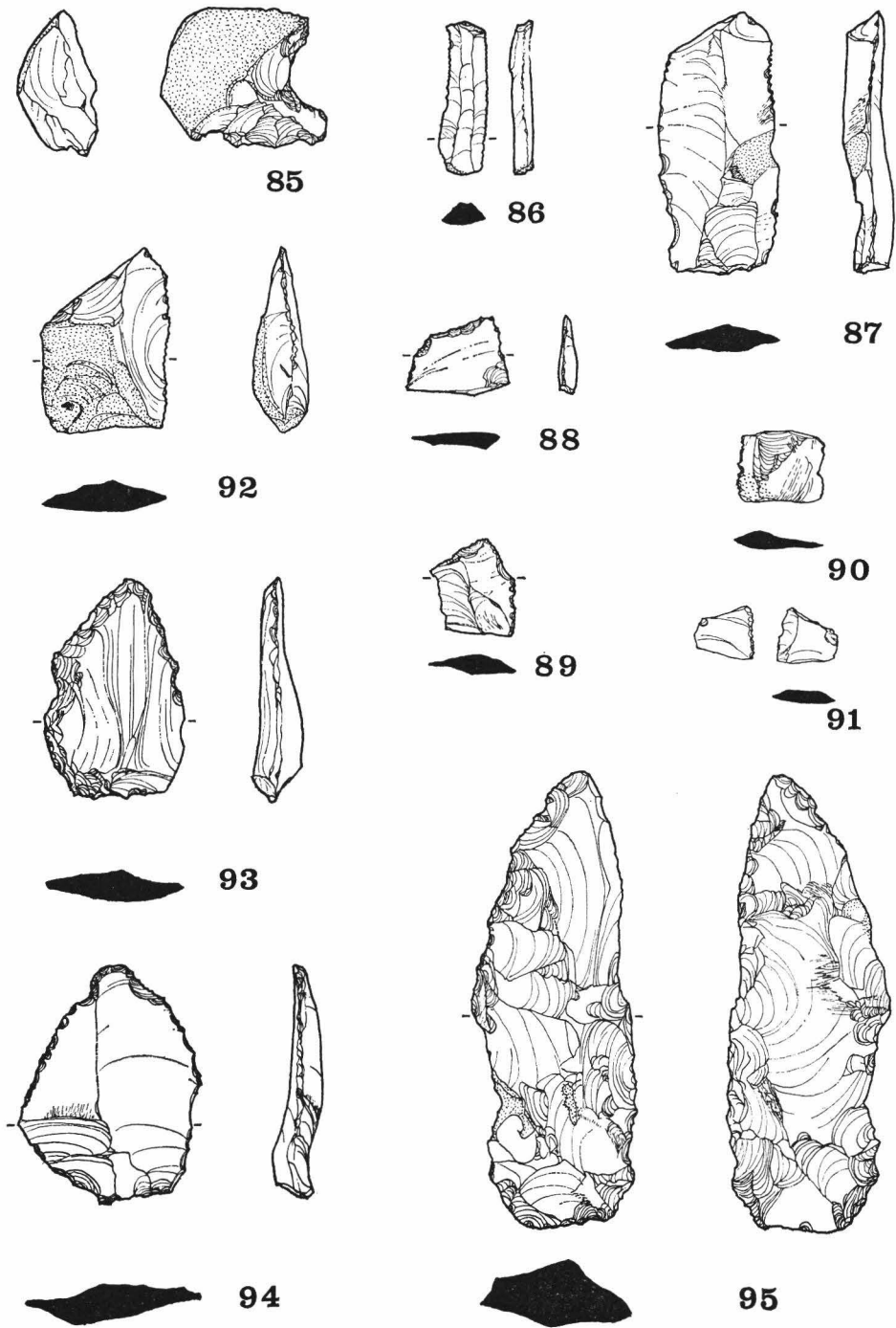


FIG. 16. The flint industry, nos. 85-95. Scale $\frac{1}{2}$

Serrated Flakes (86). Twenty-four pieces in addition to those from Pit 357. The illustrated example, the bulbar end of which has been removed, is from Neolithic Pit 711.

Blade Segments (87-91). Thirteen pieces with the bulbar and distal ends missing. No. 87 is probably a segment from a composite sickle. Part of one edge is retouched and polish covers the ventral surface, with small areas on the dorsal surface. This is in contrast to the very narrow band of edge polish recorded on serrated flakes. It was found in Iron Age Pit 714 which cut through Feature 713, of probable Neolithic date. The remainder of the pieces are trapezoidal segments, one or more sides of which are retouched. Some may be of Mesolithic date but gloss on the surface of No. 88 reminds us that they would make excellent sickle segments. It is interesting therefore that seven examples, including 90 and 91, were found stratified in the lynchet.

Backed Knives (92-94). Four examples of what seems to be a distinct artifact type within the British Neolithic. One side of the flake is generally straight and the other meets it at the distal end at an angle of approximately 60°. One side, usually the latter, exhibits steep blunting retouch; the other is generally not retouched but shows signs of utilisation. No. 92 is from Feature 616.

Bifacially Flaked Knife (95). A rather roughly made example from Pit 710.

Fabricator or Pounder (96). One example of the ill-defined implement type generally called fabricators. It has been bifacially flaked from several ridges round its periphery, and is much battered at one end where it has been used as a pounder or hammer. It is from Iron Age post hole 524 and may not therefore be Neolithic.

'*Rod*' (97). A bifacially flaked piece with breaks at both ends, somewhat damaged by fire; from Iron Age Pit 15.

Notched Piece (98). Sixty pieces had retouched notches, the diameter of which was between 7 and 9mm. and the depth between 1 and 6mm. The majority were near the average of 8mm. wide by 2.5mm. deep. The notches are often somewhat worn and chipped by utilisation.

Awls (99-100). Three pieces have a retouched point which also shows edge damage as a result of use; No. 100 is from Neolithic Feature 16.

Axe Fragments or Tranchet Sharpening Flakes (101). The tips from two bifacially flaked axe-shaped objects. Possibly from a Neolithic flaked axe or from the characteristic Mesolithic tranchet axe. 101 is from the Iron Age enclosure ditch, a second example is from Neolithic Pit 710.

Beaked Piece. Two rather poor examples with roughly retouched protuberances; one is from Bronze Age Feature 19.

Burin. One possible example from Neolithic Pit 616.

Beaker Tool Types

Discoidal Scraper (102). A single example from the Iron Age ditch.

Thumbnail Scraper (103). One of seven examples of very small, neatly retouched scrapers, all from Iron Age and later contexts.

Barbed and Tanged Arrowhead (104). A single example with the tip and one barb missing.

Other Retouched Pieces (105-116). There were 153 other pieces with retouch, these could not be assigned to any well defined tool type. Functions may however be suggested for some. Nos. 111 and 115 have scraper-type retouch. Others have retouch and edge damage down one straight side and were perhaps knives (113 and 114). Of some considerable interest is No. 106, which is the bulbar end of a blade retouched unifacially down two sides. It was found in a fossil plough groove (Fig. 95), giving rise to speculation that it might have been part of some agricultural implement.

Utilised Pieces (117). One illustrated example out of 138 pieces which have edge damage of a regular type, i.e., one or more edges showing regular chipping whilst the remainder of the flint is undamaged.

GENERAL DISCUSSION OF THE FLINT INDUSTRIES (Fig. 19)

The excavations have identified a hierarchy of three contexts which are the basis for a discussion of the industries. The first is the Pit 357 group, well preserved and intensively studied; the second, the total Neolithic stratified industry including the first group; and the third is the entire site flint assemblage including both the first two groups. The proportions of each of the 22 tool types and 'other retouched pieces' are set out for visual comparison in pie graphs.¹

¹ For the exact figures on which they are based see Table I.

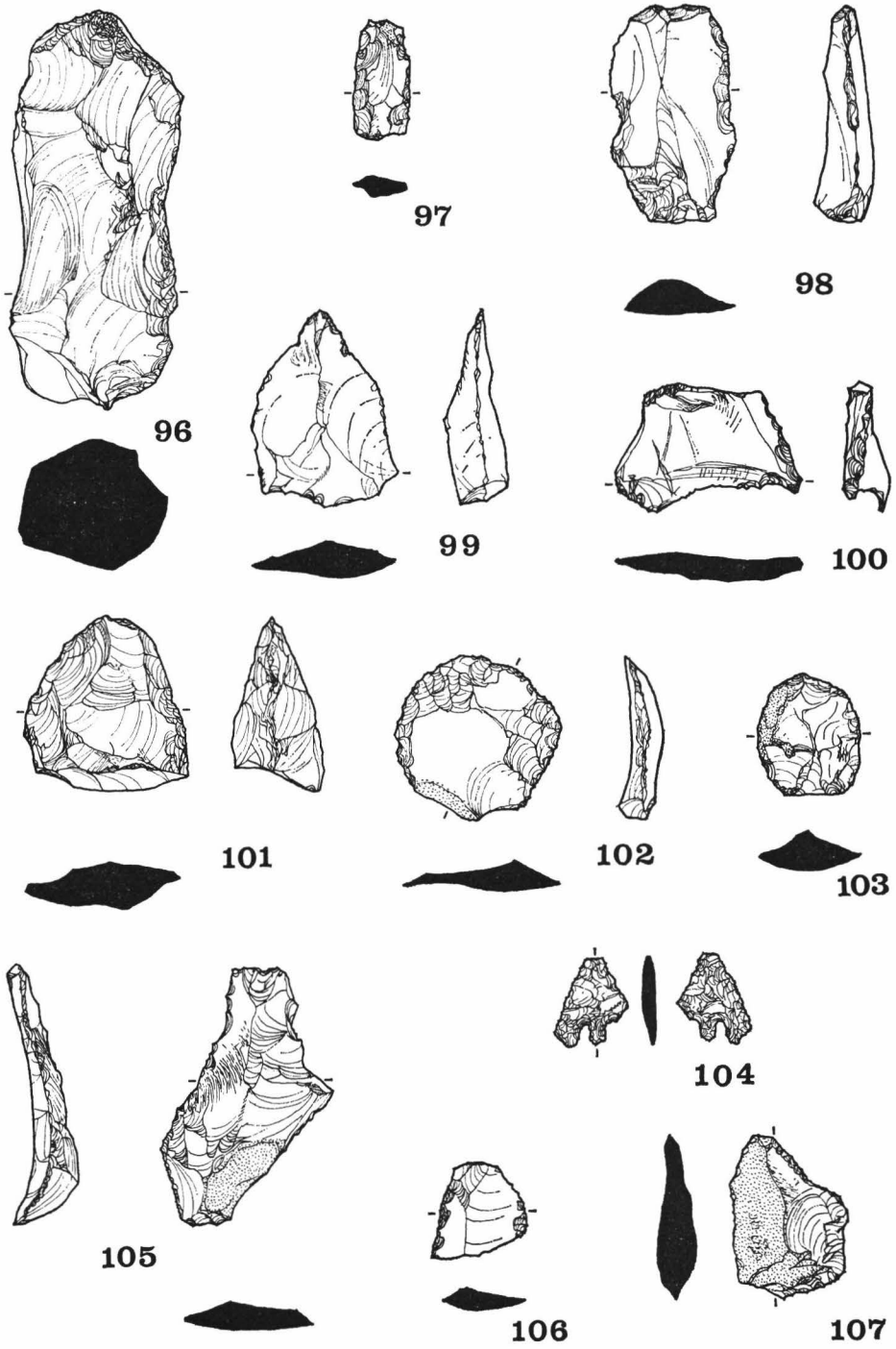


Fig. 17. The flint industry, nos. 96-107. Scale $\frac{1}{2}$

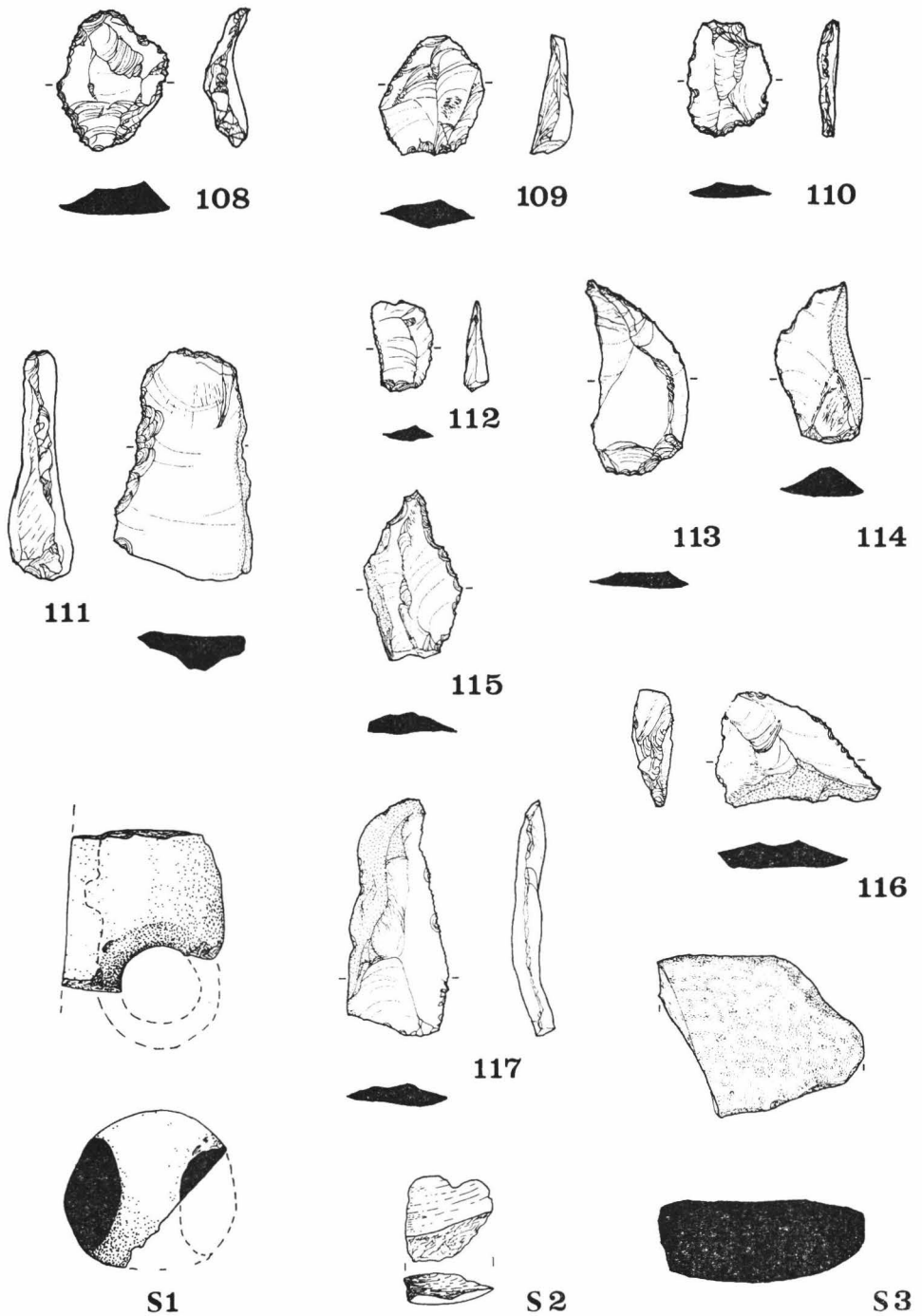


FIG. 18. The flint industry, nos. 108-117. Stone artifacts S1-S3. Scale: all $\frac{1}{2}$ except S3, $\frac{1}{4}$

The tool types reported from Neolithic features include those peculiar to the early Neolithic Windmill Hill Culture, and exclude those of the later Neolithic. Such an association with the early bowl-using cultures of the British Neolithic is, of course, supported by the pottery. As for the flintwork found in residual contexts, the vast majority suggests contemporaneity with the Neolithic features. It has presumably been eroded from them and from the now lost land surface with which they were associated. Certainly there is no clear evidence from tools or pottery of occupation during the later Neolithic. The nine tools of probable Beaker date confirm the evidence of Beaker pottery that there was some occupation in the area during that period. There were also thirteen pieces of flint found in Bronze Age features, Nos. 19, 698 and 614. Eleven of them were waste flakes, one was a notched piece and the other a beaked piece. Naturally a few of the pieces from residual contexts are probably also of this period, and we should not exclude the possibility that others are of early Iron Age date.

Preparatory to considering the typology of the Neolithic industries it is necessary to note that varying post-depositional histories make the three pie charts, and indeed Neolithic assemblages in general, rather difficult to compare. If the tools from Pit 357 had been chipped by later disturbance or lain on the soil for a period the minute serrations and gloss might have been lost. Such pieces will be underestimated in unstratified and field survey collections, whilst larger, more boldly retouched pieces, like scrapers, will probably be over represented.

When Neolithic tool typology and microscopic studies have become more advanced it should be possible, by studying the composition of an industry, to infer the range of activities carried out on a site. In the interim we can only make generalised suggestions, in this case based largely on Pit 357. The toolkit in the feature was dominated by 68.2% of serrated blades which, with the blade segment, seem likely to have been used in reaping cultivated cereals, the carbonised remains of which were particularly abundant in the pit fill. The second component of the group is the end scraper, some examples of which, it was suggested, were probably used to make wooden artifacts. The importance of these among Neolithic peoples has recently been emphasised by the discovery of fine wooden objects on the Somerset Levels.¹ The other retouched tools from the group seem to have been used to cut non-silica bearing materials, probably animal products which some of the scrapers were probably employed in preparing.

The assemblage from Neolithic stratified contexts is also dominated by serrated flakes (43.1%) with 'other retouched' and notched pieces taking second and third place. However when end and side scrapers are considered together, as on most sites, they take second place (14.5%). It is only when we come to the total flint assemblage that the picture really changes. The dominant component is 'other retouched pieces,' second come serrated flakes, followed by notched pieces. The combined total of the two scraper types (18.7%) does however top that of serrated flakes. The predominance of 'other retouched pieces' and the importance of scrapers in post-Neolithic features may in part be a reflection of the poorer preservation of this material.

The group from Pit 357 contained very few cores, and had a larger proportion of tools to by-products. It seems to have been a specialised toolkit for the cutting of plant stems. This specialisation is also reflected, to a lesser extent, by the whole Neolithic stratified assemblage. A similar emphasis on serrated flakes is seen at Windmill Hill, where they accounted for 40.2% of implements from primary levels in the ditch.² They were also relatively important at Hurst

¹ J. M. Coles et al., 'Prehistoric roads and tracks in Somerset, England'; 3: *The Sweet Track*, *P.P.S.*, vol. 39 (1973), pp. 256-293.

² I. F. Smith, 1965, *op. cit.*, p. 91.

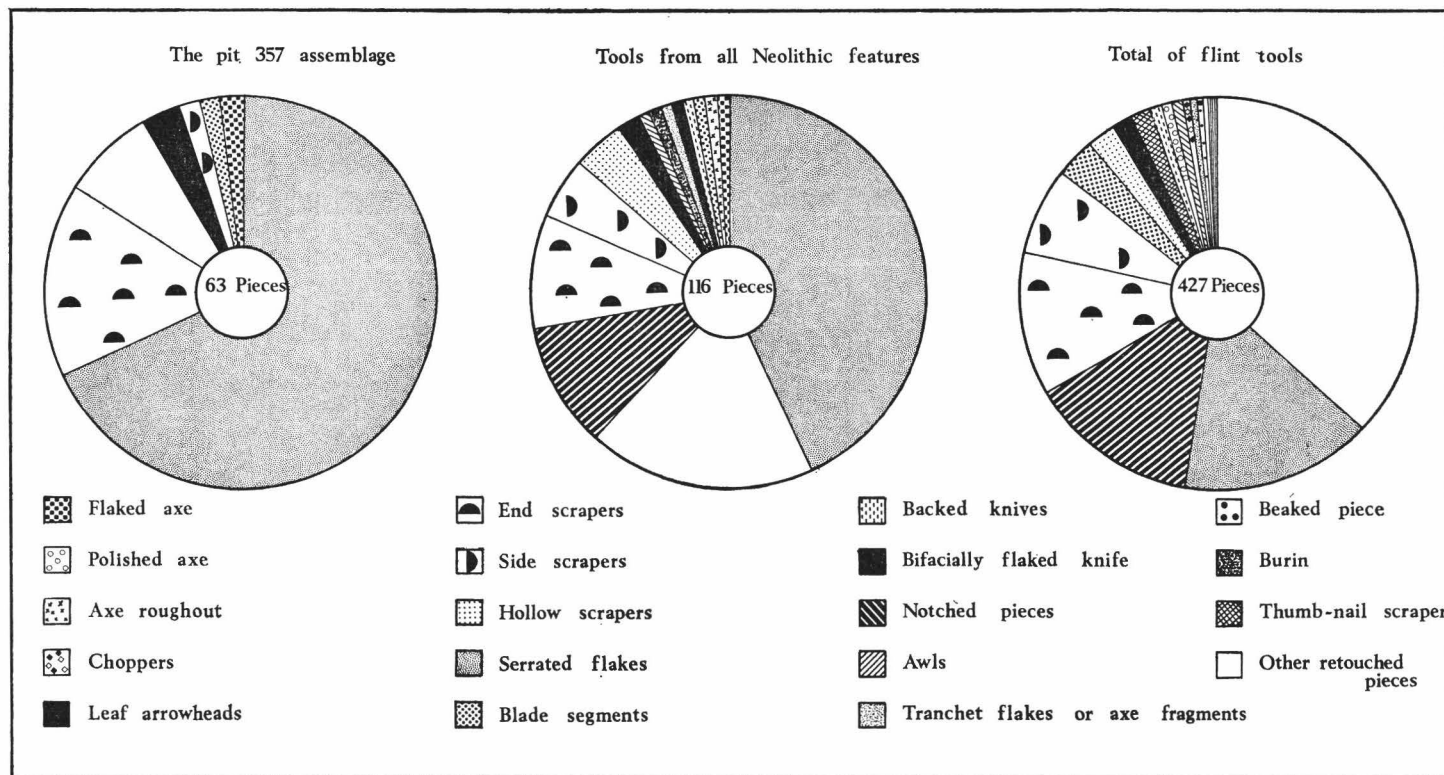


FIG. 19. Graphic representation of the proportions of tool types in the flint industry, based on figures in Table 1

Fen (c. 45%)¹ where an approximately equal number of scrapers were found. That scrapers, and the activities they represent, were not particularly important at Bishopstone may be gauged from further comparisons; the Broome Heath assemblage was dominated by 67% scrapers² and group B at Durrington Walls had 62%.³

STONE

STONE MACEHEAD (S1)

Fragment of stone macehead or battle-axe with an hour-glass perforation across which the implement has broken. It is polished over the surface and in the perforation but particularly so on the remaining surface at right angles to the perforation which may be connected with the implement's use. When reconstructed it has straight sides tapering to one or both ends. The section is virtually spherical. The marked convexity of the sides of the perforation suggest that it was made by pecking and grinding rather than by the use of a metal tubular borer. It was found in feature 707 interpreted as a tree hole, suggesting perhaps that it was an artifact used in clearance or cultivation. Although both ends are missing the fragment is more likely to be from a mace-head than a battle axe, the outlines of which are generally more angular. Parallels are from grooved ware and Fengeate ware contexts, so it is uncertain in this case whether the artifact is contemporary with the earlier Neolithic occupation.⁴ Dr. Ian Kinnes kindly arranged for a thin section examination of the implement by Dr. W. Cummins of Nottingham University. He reports that the rock does not belong to any of the petrological groups established so far. It may be classified as a quartz diorite, and described as follows:— The rock consists of plagioclase feldspar, green biotite, hornblende, augite, chlorite and quartz. The feldspar is zoned and considerably altered. The augite is altering to hornblende. Such a rock could have come from the South-West, or from Wales or from further afield. The implement has been given the number Sussex 156 in the records of the axe petrology survey.

Flake (S2). A flake from a polished axe or pebble. The raw material is a hard microcrystalline rock of dark olive green colour. This material is not, as far as the writer is aware, available in South East England. It was found in Neolithic pit No. 700.

Quern (S3). Part of a saddle quern with a slightly dished and polished upper surface which was originally fashioned by pecking; the convex lower surface shows no signs of pecking or polish. The raw material is a silicified sandstone containing bivalve fossils, it is probably of Eocene origin. Similar 'sarsen stones' are found scattered over the Downs. From Pit 357.

Rubbers (S4-S6). The first of these is a silicified sandstone of similar origin to S3. It has one smoothed surface and was found in Pit 706. S5 has two flat faces that are parallel, at least one of which has been heavily rubbed. Mr. F. E. Dimes, of the Geological Museum, London, identified it as a fine grained sandstone which may be of Coal Measure or Millstone Grit age. It was from Pit 710. S6 is part of a large broken pebble which after breakage, appears to have been much used as a rubber. Mr. Dimes describes it as not unlike a greywacke but no provenance can be suggested. It was found in Pit 711.

In addition to these stone artifacts Neolithic features produced a number of other rocks notably Eocene flint conglomerate, Tertiary ironstone, ferruginous sandstone, pebbles, sarsen and iron pyrites. All are available fairly locally, the first four at Castle Hill, Newhaven, the fifth on the beach and the remainder on the Downs.

Perforated shell (7). A broken shell of mussel (*Mytilus edulis*) with a hole on the umbo. The hole is of oval shape made from the outside and c. 2mm. in diameter. Rough edges suggest that this was not the result of chemical secretions by a carnivorous mollusc. Probably it was made by man as an ornament. From Pit 357.

GENERAL DISCUSSION OF THE NEOLITHIC OCCUPATION

The Neolithic artifact assemblage is of an essentially homogeneous character and belongs to the earlier Neolithic which spans very roughly the period between the mid-fourth millennium and about the middle of the third millennium. A radiocarbon date from pit 357, layers 4-7 of 2510 ± 70 b.c. (Har -1662) suggests that this feature may belong to the latter part of this period. On a general level the finds may be associated with the causewayed camp, flint-mine and long barrow continuum called by Piggott the Windmill Hill Culture.⁵ More specific parallels,

¹ J. G. D. Clark, et al 1960, op. cit., p. 217.

² G. J. Wainwright, 1972, op. cit., p.68.

³ G. J. Wainwright and I. H. Longworth, 1971, op. cit., p. 164.

⁴ F. Roe, 'Stone mace-heads and the latest Neolithic cultures of the British Isles,' in J. Coles and D. A. Simpson (eds.), *Studies in ancient Europe* (1968), pp. 145-172.

⁵ S. Piggott, *The Neolithic cultures of the British Isles* (1954), pp. 17-121.

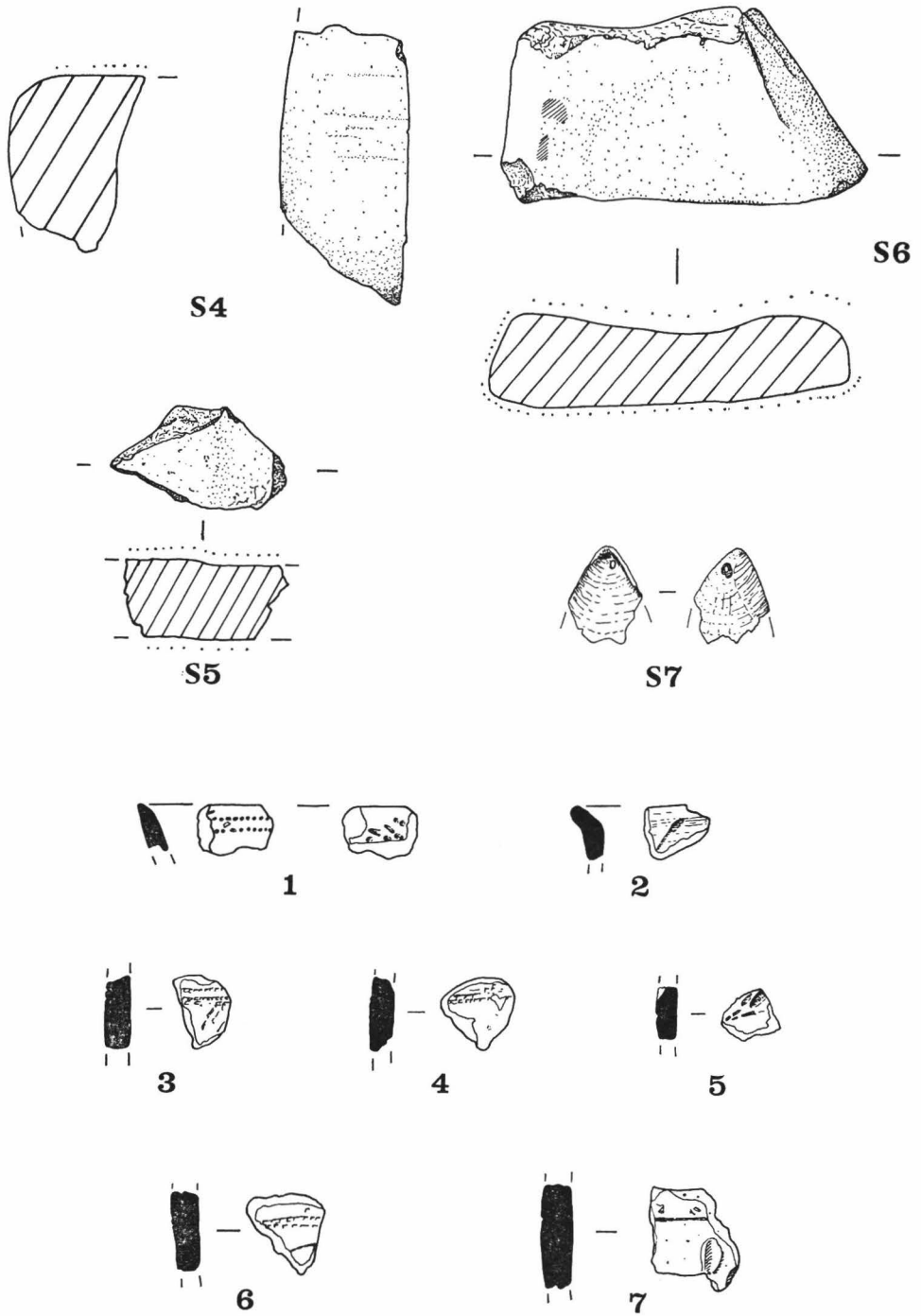


FIG. 20. Stone artifacts S4-S6; shell S7; beaker pottery 1-7. Scale $\frac{1}{2}$

especially for the pottery, are among the finds from causewayed camps at Whitehawk and the Trundle, both in Sussex.¹ The majority of the raw materials used were probably obtained within sight of the hilltop. However, the polished flint axe, probably from the flint-mines, the quartz diorite axe, pottery of non-local origin, and pieces of stone not naturally found in Sussex, testify to the wider contacts of these people.

The environment within which they chose to settle has to some extent been reconstructed from an analysis of land molluscs by Dr. K. D. Thomas and T. P. O'Connor. The latter's study of molluscs from the pits indicates that characteristically woodland species gave way to those of more open conditions during the life of the Neolithic settlement. Finds from the sub-surface hollows are a further indication that trees were being removed at the time of the Neolithic occupation. Dr. Thomas' study indicates a rather different picture in the environs of the lynchet. There woodland species were absent in the Neolithic levels and open country species dominant, showing that this part of the hillside had been cleared at an early stage. If, as the molluscs from the settlement suggest, trees did grow on the chalk in the vicinity of the pits, at least in the primary phases of occupation, then some indication of the tree species involved may be given by Caroline Cartwright's analysis of charcoals from Pit 357. In attempting this we must, however, be mindful of the words of caution of both Professors Godwin and Tansley about using charcoals, which are essentially artifacts, to reconstruct past environments.² The charcoals show that the shrub hawthorn was relatively abundant, and this may in part have accounted for the shady conditions reflected by the molluscs. Oak was of almost equal importance, though we have no way of telling where it grew. Other species which occurred were hazel, ash, yew and dogwood. Pollen analysis from the Vale of Brooks, near Lewes, has indicated that all except the last two species were components of woodland which covered the Downs thereabouts in the early prehistoric period.³

The aspect of the site's economy which was most in evidence was the cultivation of cereals, numerous carbonised examples of which were found in Pit 357. Study of these by Mr. J. R. B. Arthur shows that three species were cultivated, six-row barley (*Hordeum vulgare*), emmer wheat (*Triticum dicoccum*) and one other member of the wheat family (*Triticum* sp.). Associated with these crops were seeds of weeds with which they were infested, Common Orache (*Atriplex patula*); Fat Hen (*Chenopodium album*); Common Knotgrass (*Polygonum aviculare*); Chickweed (*Stellaria media*); Black Bindweed (*Bilderdykia convolvulus*) and a member of the burdock family (*Articum* sp.); all of which are common weeds of arable and waste land. We may preempt a later discussion of the field systems by noting that there was evidence of a Neolithic negative lynchet on the south slope of the hill. Presumably it was here, just outside the settlement site, that the crops were grown. Further confirmation of the importance of cereals comes from the flint tools. The stratified assemblage was dominated by serrated blades, many of which exhibited polish probably derived from cutting the stems of grasses. Some of the pits are likely to have been used for storage, largely of cereals, and saddle querns provide evidence of the final stages in the preparation of these crops.

The pastoral side of the economy was rather less in evidence; animal bones were not abundant and were poorly preserved, cattle, sheep/goat, pig and roe deer being the species represented. In the settlement's later phases, after cultivation represented by the negative lynchet had ceased,

¹ E. C. Curwen, 1936, op. cit.; and E. C. Curwen, 1929, op. cit.

² H. Godwin and A. G. Tansley, 'Prehistoric

charcoals as evidence of former vegetation, soil and climate,' *Journal of Ecology*, vol. 29 (1941), pp. 117-126.

³ A. Thorley, 1971, op. cit.

this area was given over to pasture. The negative lynchet was found to be covered by a buried soil containing a nucleation of Neolithic artifacts and a land mollusc fauna characteristic of short turf, which was probably maintained by animal grazing. It seems that this form of land use persisted until cultivation recommenced in the early Iron Age.

A third and important aspect of the Neolithic economy was the collection of marine molluscs. Predominant amongst these was the mussel, but oyster, cockle, pullet carpet shell, limpet, common cuttlefish and an estuarine species, *Scrobicularia plana*, were also present. Evidence has already been presented to suggest that during this period there were tidal inlets on both sides of Rookery Hill. The Neolithic settlement was therefore conveniently placed to combine agriculture with the collection of marine and estuarine produce. Of perhaps equal interest are two food resources made notable by their absence. Water sieving of most of the contents from Pit 357 failed to reveal any fish bones and a careful search for carbonised nut shells also produced negative results.

Consideration of the economy brings us finally to review what little evidence we have for the broader economic strategy of which this site may have been a part. Three features had a similar sequence of sediments which may have a bearing on this question. These were Pits 357, 710 and 570. In each case weathering and/or infilling of the pit was followed by the making of a hearth that was used on a single occasion, after which the accumulation of sediment continued. The evidence is very slender, but it may be indicative of a periodicity in the site's occupation, and as such we may set it beside similar evidence from causewayed camps.¹

The settlement was apparently unenclosed, one of very few excavated examples of this, probably the most common settlement type in the earlier British Neolithic. The only other Sussex Downland example to have been excavated is on New Barn Down and this produced a similar artifact assemblage.² The indications are that other unenclosed Neolithic settlements are marked by nucleations of flint tools on spots which were formerly the favourite haunts of the collectors. It now remains to review the evidence which these surface finds provide for the distribution of settlements in the environs of Rookery Hill.

THE NEOLITHIC SETTLEMENT PATTERN (Fig. 21)

The distribution of Neolithic settlements and barrows in this part of East Sussex has been the subject of a recent paper by Peter Drewett.³ This account is therefore confined to one or two aspects not fully covered in Drewett's broader survey but which are relevant to the results of the present excavations. The accompanying map is no more than an interim report of ongoing fieldwork in which the writer has been assisted by a number of friends.⁴ We have also drawn upon material in Lewes Museum⁵ and on previous archaeological research in the area, most notably that by Professor Grahame Clark during the 1920's.⁶ Mesolithic and Neolithic sites have, at this stage, been mapped together. This is partly because the date of many nucleations of flints is uncertain, and partly also because it is of interest to compare the types of site selected in the two periods. It should be emphasised that our recent survey and that of Professor Clark have both tended to concentrate more on the southern part of the mapped area. Wherever a section

¹ I. F. Smith, 1965, *op. cit.*, pp. 17-21.

² E. C. Curwen, 1934, *op. cit.*

³ P. Drewett, 1975, *op. cit.*, pp. 119-152.

⁴ These included Miss Peggy Norman, the Westley family and Mr. and Mrs. Suckling.

⁵ I am obliged to Miss F. Marsden for allowing me to examine material in Barbican House Museum, Lewes.

⁶ Professor Clark has kindly consented to our including on Fig. 21 sites marked on an unpublished distribution map, which he deposited in Barbican House in 1952.

Distribution of Mesolithic & Neolithic Finds

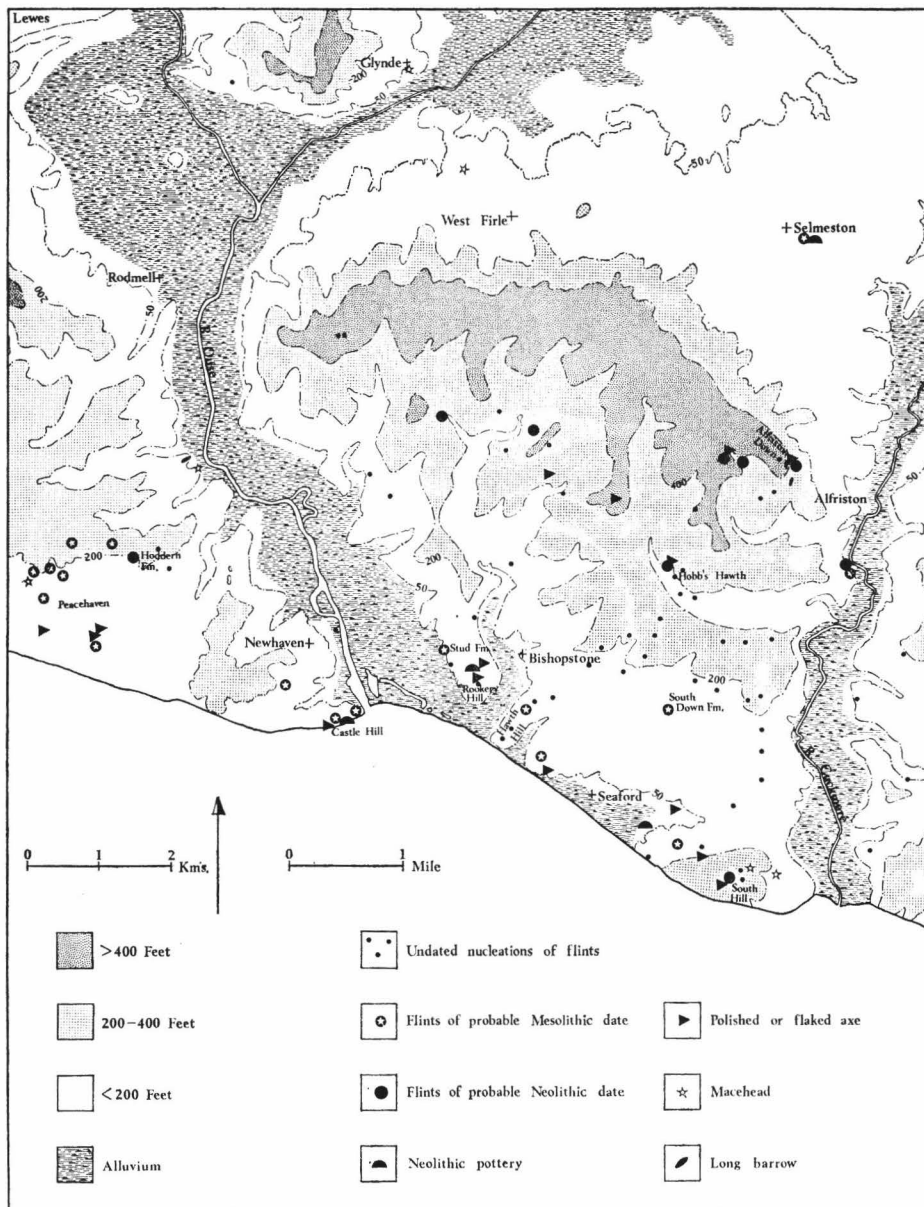


FIG. 21. The distribution of Mesolithic and Neolithic finds in the area around the site

of the northern part, the downland crest, has been surveyed in detail, as Alfriston Down was by Mr. Drewett in 1974,¹ it too has produced a scatter of findspots. Be that as it may, finds do seem to be much more prolific around the periphery of the alluvium at the mouth of the Ouse Valley and over low-lying outcrops of Clay-with-Flints now largely covered by Seaford and Peacehaven. The major Mesolithic sites identified to date are a complex found by Mr. J. B. Calkin at Peacehaven in the 1920's² and sites at Stud Farm (TQ 461010), Hawth Hill (TQ 473002), South Down Farm (TQ 493003) and Selmeston Sandpit.³ The presence of sites such as Stud Farm, Hawth Hill and numerous smaller examples beside the former estuary of the Ouse probably reflects to some extent the valuable resources it would have offered. These were resources which, as the marine Mollusca in Pit 357 show, continued to be exploited into the Neolithic period. However, if we may generalize from the results of the present excavation, then the main aspect of the Neolithic economy in this area was arable agriculture. A group of apparently unenclosed settlements may be identified upon which it is likely this economy was based. These were at Hoddern Farm, Piddinghoe (TQ 418024); Rookery Hill; Castle Hill, Newhaven; South Hill, Seaford; and Hobbs Hawth, Alfriston; the last three of which were noted in Mr. Drewett's survey. These sites are on the Downs between 125ft. and 225ft. O.D., and are suitably placed for farming the lower part of the dip slope. It is in this area that the majority of flint axes have been found, and it seems likely to have been cleared, partly perhaps in the Mesolithic, but largely for agriculture in the Neolithic. The process of clearance and then cultivation has been demonstrated during the life of the Rookery Hill settlement. At approximately the same time the area surrounding the Alfriston oval barrow, on the crest of the Downs, was open grassland with a few shrubs.⁴ It seems however that the whole area had not been cleared by this time for the Vale of Brooks pollen diagram suggests that the Downs round The Brooks may have been wooded until the middle Bronze Age.⁵ This may account, at least in part, for the paucity of sites and axes in that area.

¹ P. Drewett, 1975, op. cit.

² J. B. Calkin, 'Pigmy and other flint implements found at Peacehaven,' *S.A.C.*, vol. 65 (1924), pp. 224-41.

³ J. G. D. Clark, 'A late Mesolithic site at Selmeston, Sussex,' *Antiquaries Journal*, vol. 14 (1934), pp. 134-58.

⁴ P. Drewett, 1975, op. cit.

⁵ A. Thorley, 1971, op. cit.

THE BRONZE AGE PERIOD

Generally speaking this period represented a hiatus in the occupation of the part of Rookery Hill where excavations took place. However, the presence of a few residual artifacts and scattered features should be recorded.

Beaker Period

No features of this period were found and it was represented solely by a discoidal scraper, seven thumb-nail scrapers and a barbed and tanged arrowhead, which have already been discussed in the section on flint industries, and by residual sherds. Most of the sherds came from the Iron Age enclosure ditch on the southern side. Fifteen sherds had decoration indicating that they were almost certainly Beaker, but a much larger number were of similar fabrics or had weathered traces of similar decoration. Of the clearly decorated sherds nine were in a soapy ware without filler, two had fine flint filler and four contained shell. Combing was the predominant form of decoration, being found on fourteen vessels (Fig. 20, vessels 1-7); vessel 7 was also ornamented by finger impressions. The rim of vessel 1 had two rows of stab marks on the inside lip and ?combing on the outside. Due to the worn condition of some sherds it was often impossible to decide with certainty whether the design was combed or corded and it would be unwise to associate this small assemblage with any particular one of the recently defined British Beaker groups.¹

Barrows

Eight round barrows on the hill are of Beaker or, more probably, early Bronze Age date.² Six of these are in a line on the very crest of the spur and are well preserved bowl barrows. None has clear indications of a ditch and all appear to have been robbed. Two other barrows, on a slight shoulder which runs down from the spur crest to the south, have now been obliterated by housing. One of these, shown on the Ordnance Survey 6in. maps at T.Q. 46650048, is in an area built over before excavations began, but traces of the mound are still visible. The second was also shown on early editions of the 6in. maps, but in recent years had been obliterated by ploughing.³ In 1967 it was rediscovered and found to form the nodal point of the Anglo-Saxon cemetery in connection with which it will be more fully discussed. Suffice to say here that in the central area was a large robber pit and no primary interment was found. None of the other barrows has been excavated, but the southernmost of the surviving line lay just on the edge of the present excavations. On its west side the mound had been somewhat eroded by the plough, and excavations extended up to the edge of the preserved mound but no trace was found of a ditch nor any other features that could be associated with the barrow. Indeed the attribution of this barrow to the Bronze Age may be open to doubt because of the proximity of the Iron Age enclosure ditch.

¹ D. L. Clarke, *Beaker pottery of Great Britain and Ireland*, vol. I (1970).

² Listed in L. V. Grinsell, 'Sussex barrows,' *S.A.C.*, vol. 75 (1934), pp. 216-275, especially p. 272.

³ L. V. Grinsell, 1934, *op. cit.*, p. 272, records that it was ploughed in 1930 when he found two flint celts on the site.

Bronze Age Features (Figs. 24, 25 and 64a)

Six features provided pottery of fabrics 1a and 1b which are assigned to the Bronze Age. These features were also characterised by a fill of dark yellow/brown soil mixed with chalk and cemented by a hard deposit of calcium carbonate. A similar, though perhaps darker and harder, fill was encountered in Neolithic features.

Pit 17. Four irregularly shaped intersecting scoops in an area 2.6m. by 3m. They varied between 15 and 34cm. deep. Among the finds were vessels 15 and 16, a large body sherd of fabric 1b, nine flint flakes, a beaked piece and a notched piece.

Feature 698. A posthole 46 cm. in diameter, 35cm. deep and apparently recut. It contained two sherds of fabric 1a and two flint flakes.

Feature 659. A small feature 41cm. in diameter and 20cm. deep, which had been truncated by a negative lynchet of Iron Age or later date. It contained two sherds of fabric 1b.

Feature 660. Beside feature 659, it was 35cm. in diameter and 17cm. deep.

Feature 414. A carefully cut posthole 30cm. in diameter and 28cm. deep which contained three flint flakes and three large body sherds of fabric 1a.

Feature 227. A posthole 50cm. in diameter and 25cm. deep with a clear circular post cast 23cm. in diameter. It contained a flint flake and sherds of an angular shouldered bowl of fabric 1b.

*Bronze Age Pottery*¹ (Fig. 22)

This has a characteristic appearance and is classified as fabric type 1, the basic feature of which is a filler of gravel sized pieces of calcined flint varying in size between 0.5mm. and 4mm. Two subtypes of the fabric have been identified, 1a and 1b. 1a is liberally filled with flint and some sand, the surfaces are orange to dark brown and often grass-marked, the body sherds of such vessels are 1cm. or more thick. An example of this type, vessel 16, has been examined mineralogically by Miss S. Hamilton and C. R. Cartwright and is discussed in their sections on the Iron Age pottery. Subtype 1b had a sparser flint filler, the core of the sherds were black in contrast to the characteristically oxidized brown/purple surface. Generally it was better fired than type 1a and the sherds were usually under 1cm. thick. The mineralogy of both subtypes indicates that they are likely to have been made from fairly local deposits of Clay-with-Flints. In addition to the *in situ* pottery in Bronze Age features there was a larger number of these sherds in residual contexts, for instance they formed some 2% of the total assemblage in Iron Age features.

Vessel 8. Fabric 1a. Large body sherd from the rounded shoulder of an urn, grass marked on the surface. From the Iron Age ditch.

Vessel 9. Fabric 1b. Plain inturned rim from a small bowl decorated by a cable pattern on the top of the rim. From the Iron Age ditch.

Vessel 10. Fabric 1b. Body sherd with combed decoration on the surface. From the Iron Age ditch.

Vessel 11. Fabric 1b. Plain inturned rim from a small bowl with a cable pattern on top of the rim. From the Iron Age ditch.

Vessels 12-14. Fabric 1a. Thick body sherds ornamented by finger impressions directly on the body. From the Iron Age ditch.

Vessels 15. Fabric 1a. A large slightly biconical urn with a slightly beaded rim. From Pit 17.

Vessel 16. Fabric 1a. A similar rim to vessel 15 but from a more straight sided urn. From Pit 17.

Not illustrated. Fabric 1b. Five sherds of an angular shouldered bowl with a plain inturned rim. From Feature 227.

¹ I am grateful to John Barrett of Leeds University for discussing this material with me.

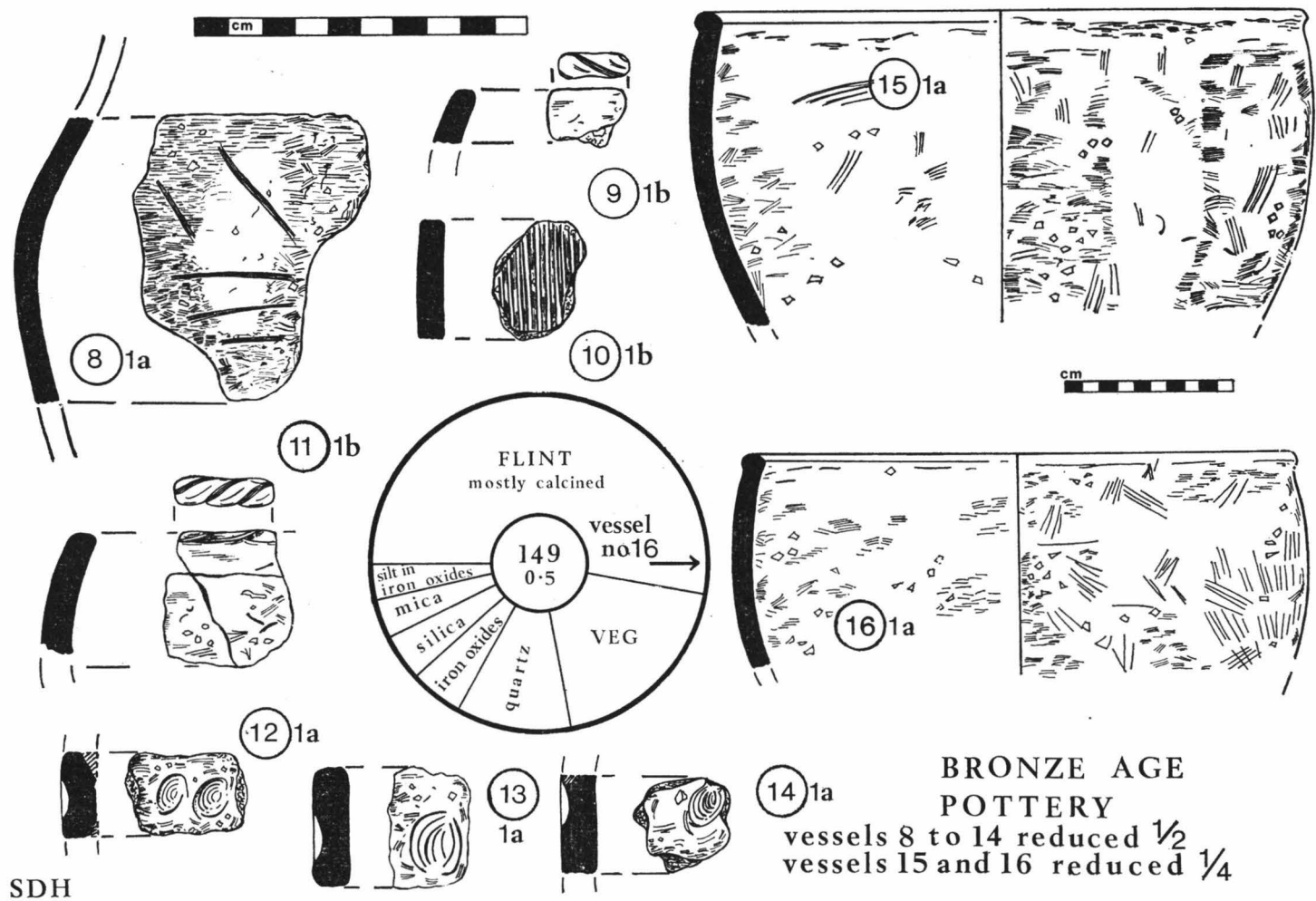


FIG. 22. The Bronze Age Pottery with a pie chart showing the composition of vessel 16

The two Bronze Age fabric subtypes were, generally speaking, used to produce vessels of different forms. Since their clays are of similar origin this may suggest that the subtypes have some chronological status. Urns like those in fabric 1a occur in middle Bronze Age cinerary contexts; a similar example was found 3km. to the south east at Fitzgerald Avenue, Seaford,¹ and another comes from Lancing.² The finger impressed ornament present on three vessels is also seen in middle Bronze Age contexts at Itford Hill cemetery-barrow³ and New Barn Down.⁴ The closest parallels for cable decorated rims of fabric 1b are from the late Bronze Age occupation at Highdown near Worthing⁵ and Castle Hill, Newhaven.⁶ This leads us to the conclusion that the small Bishopstone assemblage includes material of both middle and late Bronze Age date, represented by the successive fabric types 1a and 1b. The two types are not however entirely exclusive; one urn from Feature 19 is in fabric 1b and this hints, but does not prove, that the types may be part of a continuous development.

Discussion

The Bronze Age features were all on the southern edge of the excavations and were not apparently associated with the line of barrows. A similar distribution was shown by the residual sherds of Beaker and Bronze Age date which were mainly concentrated in the Iron Age enclosure ditch on the southern side. These distributions hint at the existence of Beaker and Bronze Age occupation of some kind to the south of the area excavated.

¹ V. Gerard Smith, 'An Iron Age and Romano-British site at Seaford,' *S.A.C.*, vol. 80 (1939), Fig. 1.

² S. Frere, 'A survey of archaeology near Lancing,' *S.A.C.*, vol. 81 (1940), Fig. 4b.

³ E. W. Holden, 'A Bronze Age cemetery-barrow on Itford Hill, Beddingham, Sussex,' *S.A.C.*, vol. 110 (1972), Fig. 9. 9 and 13.

⁴ E. C. Curwen, 'A late Bronze Age farm and a Neolithic pit-dwelling on New Barn Down, Clapham, Worthing,' *S.A.C.*, vol. 75 (1934), Figs. 10 and 19.

⁵ A. E. Wilson, 'Report on the excavations on Highdown Hill, Sussex,' *S.A.C.*, vol. 81 (1940), eg. Fig. 6.

⁶ C. F. C. Hawkes, 'The pottery from Castle Hill, Newhaven,' *S.A.C.*, vol. 80 (1939), pp. 269-92, particularly Fig. 1. Also unpublished finds in Barbican House Museum, Lewes.

THE IRON AGE PERIOD

This was a time of fairly intensive and perhaps continuous occupation on the hilltop. Artifact assemblages span the period between about the mid-first millenium B.C., and the Roman conquest. Three broad phases have been identified:—

- (a) A primary unenclosed phase.
- (b) An enclosed settlement.
- (c) A late Iron Age unenclosed phase.

A paucity of stratigraphic relationships means that in the majority of instances features were assigned to one or other of the phases on the basis of the pottery they contained. Naturally this means the shape and ' style ' of the vessels and the way in which they were finished and decorated, but also in this case the fabric type employed in its production. Nine main fabric types have been identified mineralogically by Miss Susan Hamilton, and certain of them have a chronological status. The quantity of pottery involved has made it impossible to tabulate the fabric types present in each feature, although all the pottery has been so typed and this information is available in record form. Instead there is a summary of the total assemblage from Iron Age contexts (Table Va) and the fabric types present in individual pits and ditches is given either in the text, or in the form of a pie chart beside the drawing of the feature. In the charts weight was the measurement used to compare the relative importance of each fabric type. At the centre of the pie charts two figures are given, the uppermost is the number of sherds in the feature, and the lower the total weight of those sherds in grams. The description of each feature is concluded by reference to the illustrated sherds and artifacts, and to any unillustrated finds of particular significance.

THE UNENCLOSED PHASE

Evidence for this phase rests primarily on three pits which are stratigraphically earlier than the enclosure.

Pit 423 (Fig. 30). One side of this feature was removed by the enclosure ditch, the diameter was 1.9m., and the depth 0.43m. The chalk rubble fill included 120 mussel shells, four unattached barnacles and ten sherds of Iron Age fabric 2a.

Pit 699 (Fig. 25). A feature of diameter 1.8m. and 0.61m. deep with a bowl-shaped profile. The southern side had been removed by the enclosure ditch, and there was a shallower extension of the feature to the west. A good range of pottery fabrics was present; eight sherds of fabric 4 included one from an angular shouldered vessel, No. 37. There were also seven sherds of 3c which included one from an angular shouldered bowl, No. 38. The remaining five sherds were of fabrics 1, 2a, 3a and 3b.

Pit 704 (Fig. 25). A shallow scoop 3.10m. by 1.5m. and maximum depth 0.30m., the southern side of which had been removed by the enclosure ditch. The fill contained five sherds of daub and six sherds of a fabric 3c bipartite vessel.

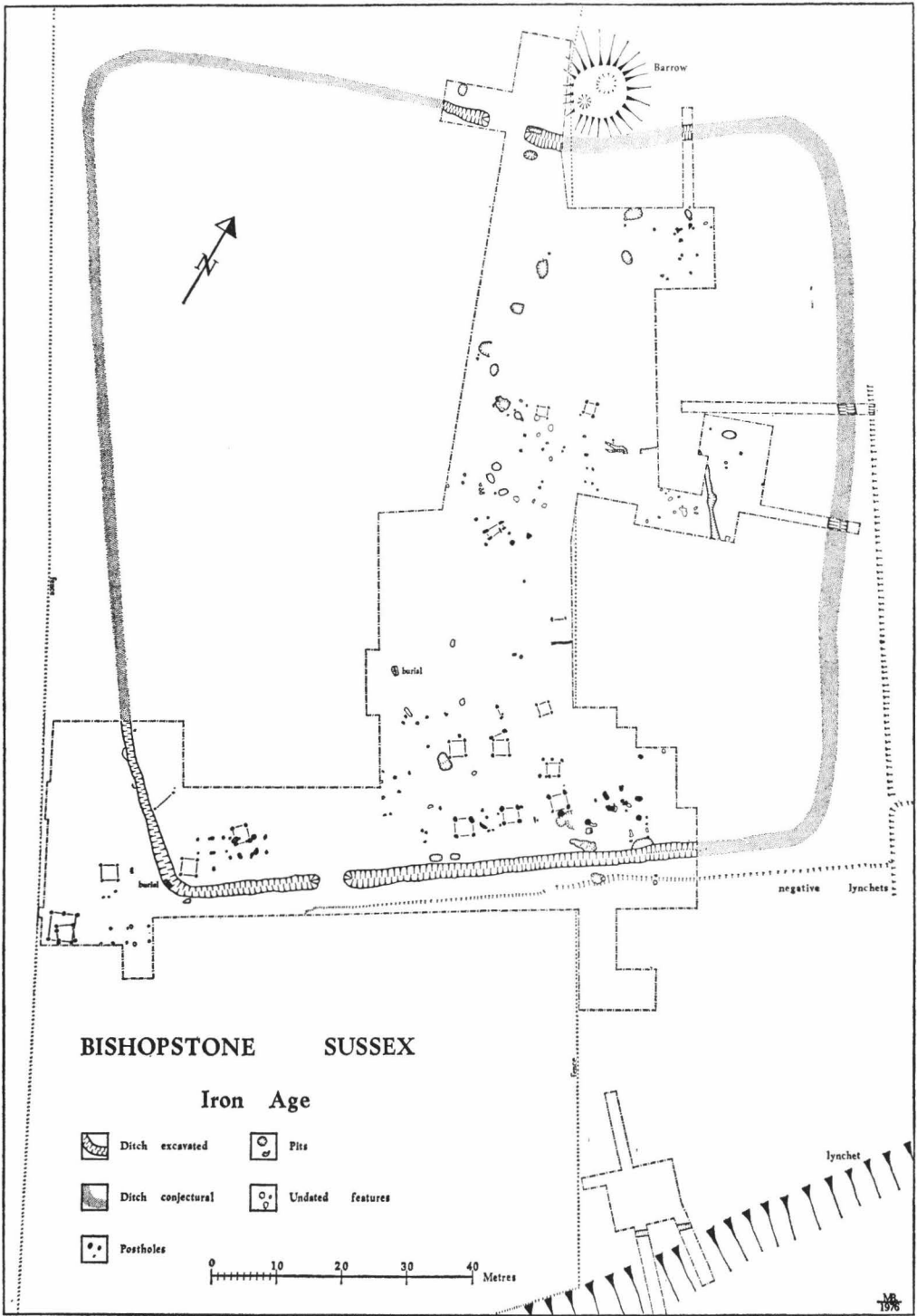






FIG. 23. General plan of the Iron Age site

BISHOPSTONE Iron Age

-  Posthole
-  Probable associations between holes
-  Pits
-  Undated features

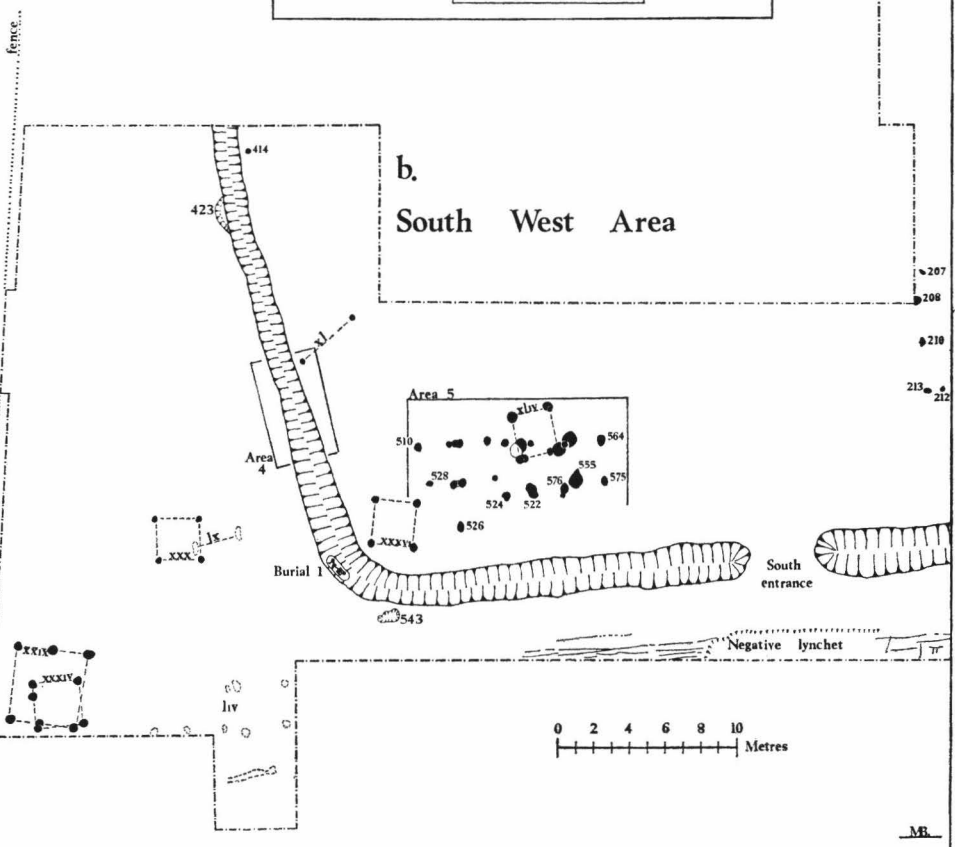
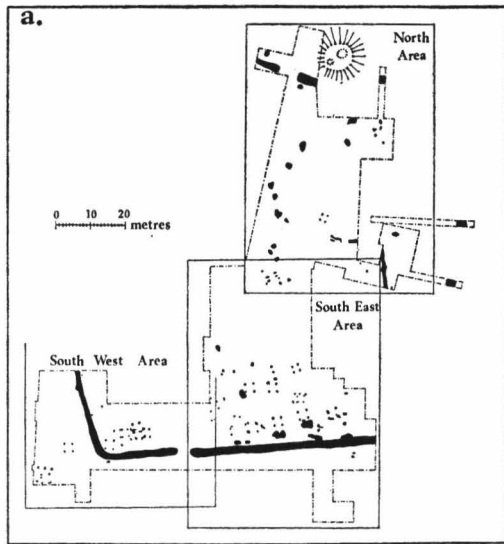


FIG. 24. Iron Age period (a) location of the area plans, (b) south west area

Sediments in these features, and the weathered nature of their edges, indicated that they had filled naturally, and were completely full by the time the enclosure ditch was dug. Were it not for the fact that they were cut by the enclosure ditch they could not have been isolated, for the pottery they contained was of types present in the later enclosed settlement (Table Va). It is reasonable to assume that other features were contemporary with them but stratigraphic proof is absent. However it does seem likely that features outside the enclosure may be associated with the unenclosed phase. This includes one pit (543), two four-post structures (XXX and XXXIV) and a six-post structure (XXIX). The structures will be more fully discussed in connection with those from the later phases.

Pit 543 (Fig. 30). A shallow scoop hollow 1.35m. by 0.74m. and 0.20m. deep. In the chalk rubble fill were 31 sherds of a fabric 2a plain rimmed bowl, and sherds of fabrics 1, 3a, 3b and 3c; there was also one corner of a triangular clay loomweight.

Equally, of course, features within the later enclosure might have belonged to the unenclosed phase; a possible example is Structure IX, a posthole of which contained a sherd from the same angular shouldered bowl as one found in Pit 699. The fact that the pre-enclosure and enclosed phases produced basically the same pottery fabrics and vessel forms implies that there was no hiatus between the two phases, and that soon after its establishment the settlement was enclosed. As for the foundation date of the Iron Age settlement, we may tentatively suggest the fifth or sixth centuries B.C., for the diagnostic vessels are similar to those of Professor Cunliffe's Kimmeridge-Caburn group.¹

THE ENCLOSURE (Fig. 2)

The early Iron Age enclosure was positioned just to the south of the brow of the hill. Here an approximately square area with rounded corners and sides of 110 metres was enclosed by a ditch, though no trace remained of any bank. Within the enclosure was about one hectare (2½ acres) of gently sloping ground, but on the eastern edge a narrow belt of steeper ground was included. Only on the southern side did the ditch follow the contours so far as its rather angular form allowed, elsewhere it ran at an angle to the contours or crossed them. There were two entrances marked by simple gaps in the ditch, a northern one virtually on the top of the hill on the 50m. contour, and a southern one on the 45m. contour.

No surface trace of the earthwork survived, nor did aerial photographs reveal its plan in any readily interpretable form. Thus reconstructions of its overall plan like Figure 23 are purely conjectural, based only on extrapolation from the excavated portions. The excavation of parts of four sides, one corner and two entrances may be thought to provide a reasonable basis for such conjecture, but it should be admitted that the reconstruction rests very largely on the assumption that the other corners are similar to the excavated one.

Equally uncertain is the relationship of the enclosure to the round barrow just outside its northern entrance; did the ditch curve slightly to avoid the barrow or did it run under the southern lip of the mound? Since the barrow was a scheduled monument and under no threat this problem was not examined with the spade. However the barrow is presumed to be Bronze Age, and if so was standing when the enclosure was made. There is a parallel situation in the barrow which stands outside the southern entrance to the Iron Age enclosure on Thundersbarrow Hill, Shoreham-by-Sea.²

¹ B. W. Cunliffe, *Iron Age communities in Britain* (1974), pp. 33-34.

² E. C. Curwen, 'Excavations on Thundersbarrow Hill, Sussex,' *Antiquaries Journal*, vol. 13 (1933), pp. 109-151.

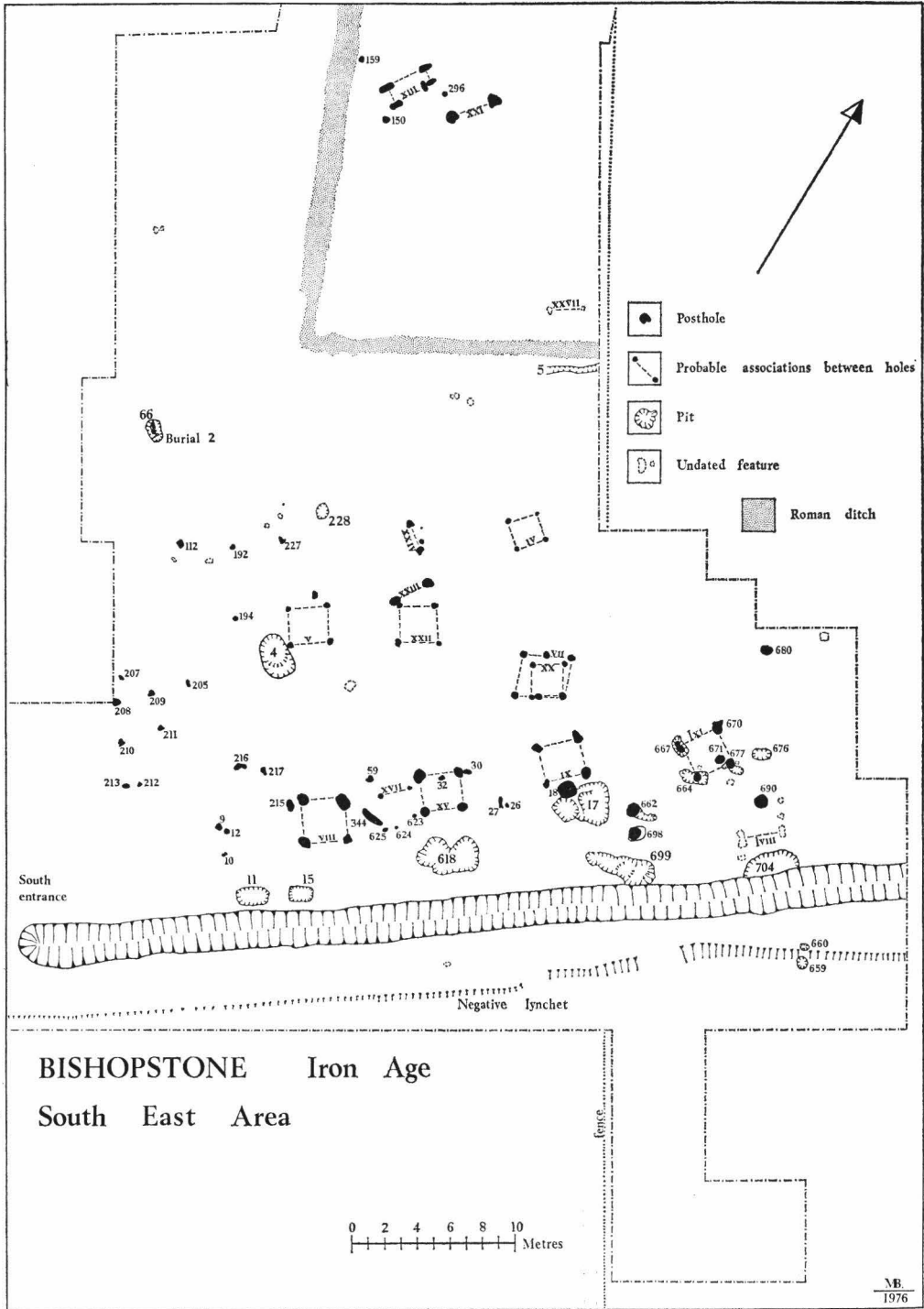


FIG. 25. Iron Age period. South east area

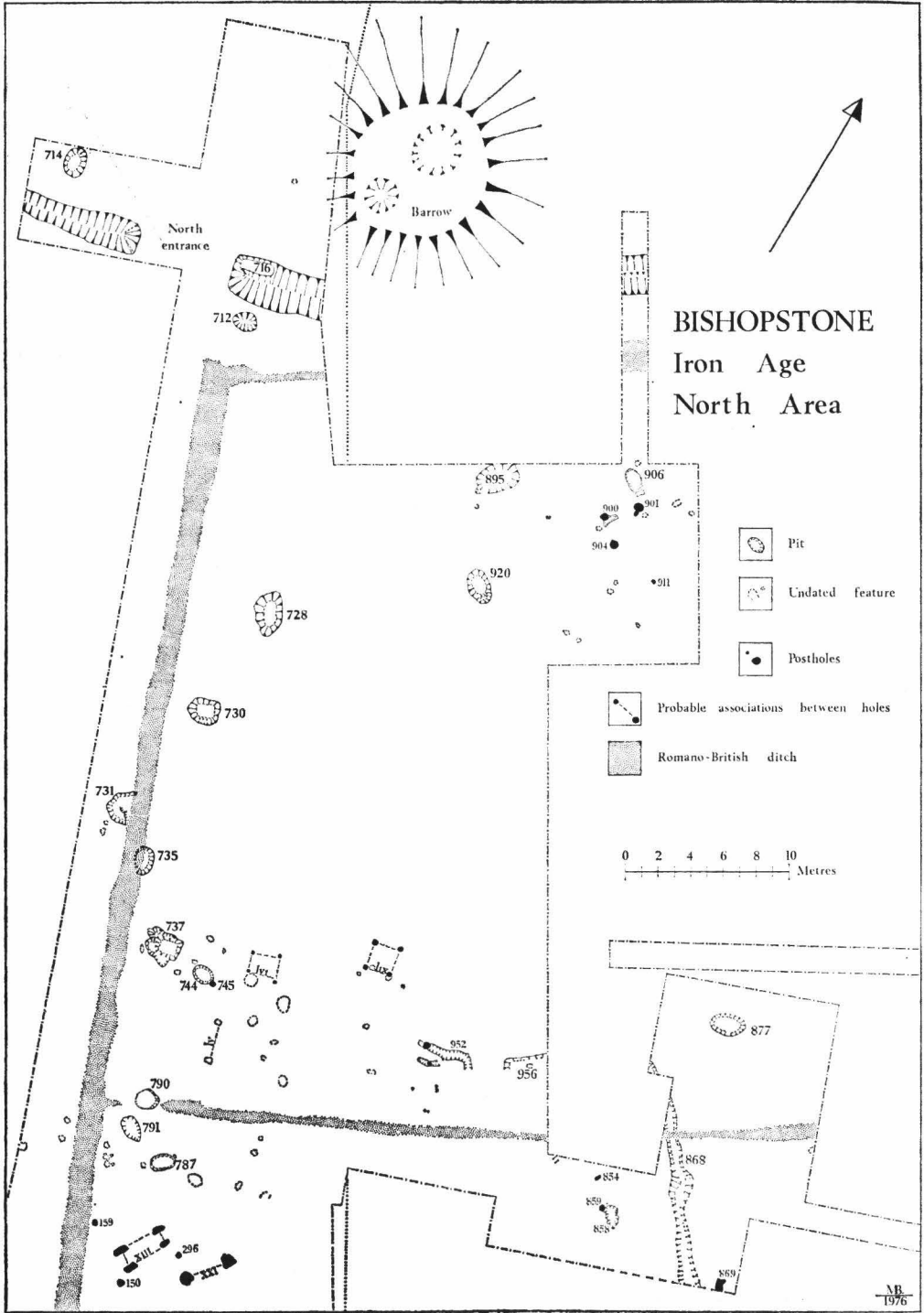


FIG. 26. Iron Age period. North area

THE DITCH

Each section cut across this feature showed the same basic V-shaped profile but its dimensions were more variable. The minimum dimensions were encountered on the west side of the enclosure where it was 1.4m. wide and 0.63m. deep. The ditch was at its most substantial on the east side of the southern entrance where it was 2.68m. wide and 0.90m. deep, whereas the west side of the same entrance was narrower, 2.3m. and 1m. deep. On either side of the northern entrance the ditch was of similar dimensions but it soon narrowed to the west. The enclosure's east side was particularly substantial when one considers that here the ground falls away more steeply. Maximum dimensions on this side were encountered in Section 19, where the width was 2.5m. and the depth 1.2m. Width dimensions of the ditch however are of limited individual significance because all sections showed recuts which had often increased the overall width.

Detailed consideration of the ditch's stratigraphy will begin with the area on either side of the southern entrance, where the sequence of layers is fairly typical (Fig. 27 and Plate VII). The most recent layer was 1a; brown humic soil with small chalk containing abundant flints. This was only about 30 cm. thick, and appeared to represent a shallow recleaning of the ditch which was restricted to a few metres on either side of the entrance. In this area it had cut into and removed much of layer 1b, which elsewhere extended right across to the southern edge of the ditch. Layer 1b was particularly rich in pottery and fired clay objects, fragments of which gave it an orange-red colour interspersed with particles of dark brown soil, burnt flints and beach pebbles. The depression in which this material lay was 15 cm. deep, and had resulted from settling of the ditch sediments after it had been infilled.

Underlying these thin superficial layers was the more extensive layer 2a, a mass of chalk rubble with very little soil. There was an absence of fine stratigraphy in the layer, quite large pieces of chalk being randomly disposed amongst smaller ones, suggesting that it represents a deliberate infilling of the ditch. The edge of 2a was marked by a thin band of soil with small pieces of chalk, 2b, which is interpreted as the product of weathering on the edges of a ditch recut. That the base of 2a represents a recut is also evidenced, on the western side, by the way in which 2a cuts 3. Presumably the recut had a fairly brief life as shown by the thin band of weathering products which could have accumulated in a few winters and perhaps much less.

Beneath this was layer 2c, loosely packed chalk rubble, the interstices between which were filled with soil. Then came the widespread and distinctive layer 3; a dark band of soil between 5 and 30 cm. thick, which the sections show was the base of a V-shaped recut. This soil mantled the ditch profile, some probably fell in from the edges of the ditch, more may have been blown in. Once some soil had been deposited it would quickly have been colonized by plants resulting in stabilisation of the profile, after which some natural soil development could have occurred. It would however be wrong to regard this as a fully developed soil, for if it were there would be a marked band of small chalk rubble at its base produced by the sorting activities of earthworms. Incipient traces of such sorting were seen in places, but the period which elapsed between the digging of the ditch and its being backfilled with layer 2c was insufficient for the formation of a well developed soil. Some explanation should perhaps be offered for regarding the base of layer 3 as the edge of a recut rather than a pause in the sedimentation of the ditch. Two pieces of evidence, in addition to its appearance in plan, are responsible for the former interpretation. In Section 11 it was unconformable with the dip of layer 4b, furthermore in Section 12 its steep angle of dip against the entrance would appear to preclude natural processes of slope development. Predating this supposed recut was layer 4, consisting of chalk rubble lying at all angles, and presum-

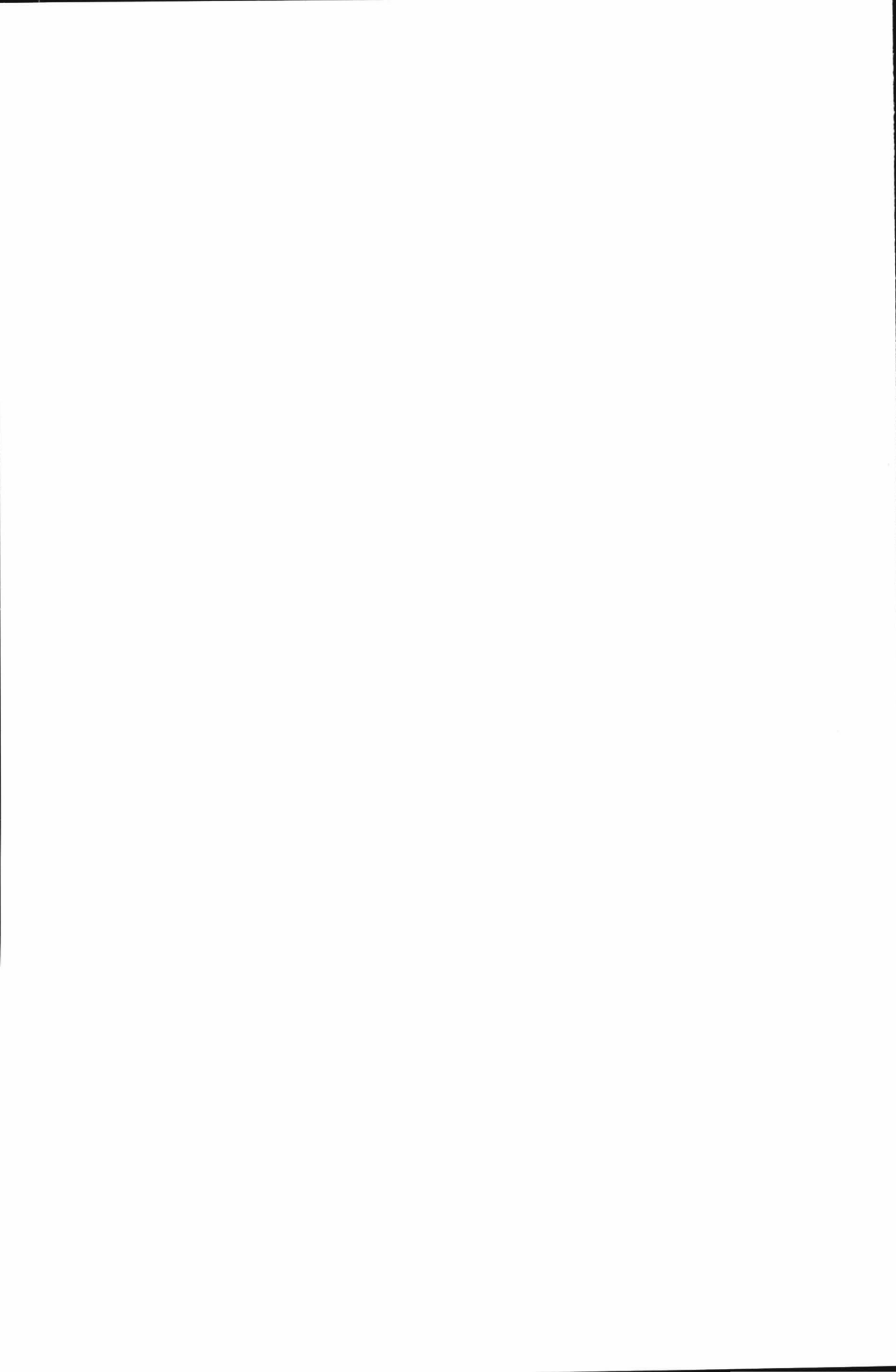
ably thrown in manually. Section 11 shows a band of more humic material, 4b, at its base which might represent a halt in the backfilling or the base of a further recut. Below this was the earliest layer 4c, largely chalk rubble and soil, probably a primary silt resulting from natural weathering of the ditch sides.

A remarkable feature of the ditch stratigraphy all round the enclosure was that most sections displayed a sequence of deposits similar to that just outlined. It remains therefore to record other particularly significant sections proceeding round the enclosure from the south entrance in a clockwise fashion. Fifteen metres west of this entrance a detailed plan was made of the surface of the ditch where it was overlain by an Anglo-Saxon building (Fig. 96). In this area layer 1a was absent and 1b consequently more extensive. This dark final fill, and the chalky layer 2a which underlay it, both show up clearly in Plate VI; also visible is the soil rich layer 3. However, as the sketch Section 21 shows, layer 3 divides into two distinct humic lenses lower in the profile. The uppermost of these had some of the sorting characteristic of a soil developed *in situ*, accordingly a sample, No. 5, was taken for analysis of land molluscs. This, and sample 6 from layer 1b of the same profile, showed rather severe and disturbed conditions, such as might be expected to result from arable agriculture. Possibly therefore some of this soil was blown into the ditch from surrounding fields.

An area of ditch on the west side of the enclosure shows the feature at its most narrow (Fig. 28). In part this may be the result of more extensive plough erosion hereabouts which has removed all but the basal few centimetres of layer 1b. The sections show clearly that the underlying layer of large chalk blocks (2) was a deliberate infilling of the ditch. On its outer edge, underlying 2, was an accumulation of large flints. In this length of ditch layer 3 was thicker and less structured than elsewhere, being in places mixed with chalk blocks that had presumably tumbled in whilst it was accumulating. Section 16 showed that in places it was divided into two distinct zones by a band of weathering products. A further unusual feature of the same section was that layer 4 was restricted to a thin band on the inside of the ditch, compared with for instance Section 15, where it was more extensive and had a thin band of primary silt, layer 5, at its base.

Continuing clockwise round the circuit, this brings us to the lengths of ditch on either side of the north entrance; these were, as we shall see, away from the main locus of early Iron Age settlement and finds were few. The normally artifact-rich layer 1 was replaced by a thin layer of small chalk rubble and soil. Below this were the characteristic layers 2 and 3 filling a distinctive V-shaped recut of the ditch. Layer 4a was large chalk rubble which appeared to have been deliberately deposited; this operation had however been interrupted by a period of weathering during which a lens of humus had accumulated. In contrast to the relative simplicity of the stratigraphy in this area was Section 18, also on the northern side of the enclosure. Here a step in the ditch profile marked the bottom of a recut, which was in turn cut by the V-shaped recut already noted on either side of the north entrance. Sections 19 and 20 on the east side of the enclosure both had the characteristic step in their profile caused by recutting of the ditch. In each instance the edge of the recut was marked by the soil-rich layer 3. Finally this brings us back to the southern side of the enclosure and to Section 17 (Plate V). Here layer 1 was well developed and rich in both pottery and objects of fired clay. Below this was a particularly thick and chalky layer 2 with a thin band of humic material, layer 3, at its base, and a primary silt of chalk and soil below this.

In none of the sections was any trace of an associated bank preserved, though one might easily have been obliterated by erosion and agricultural activities. The ditch sections did





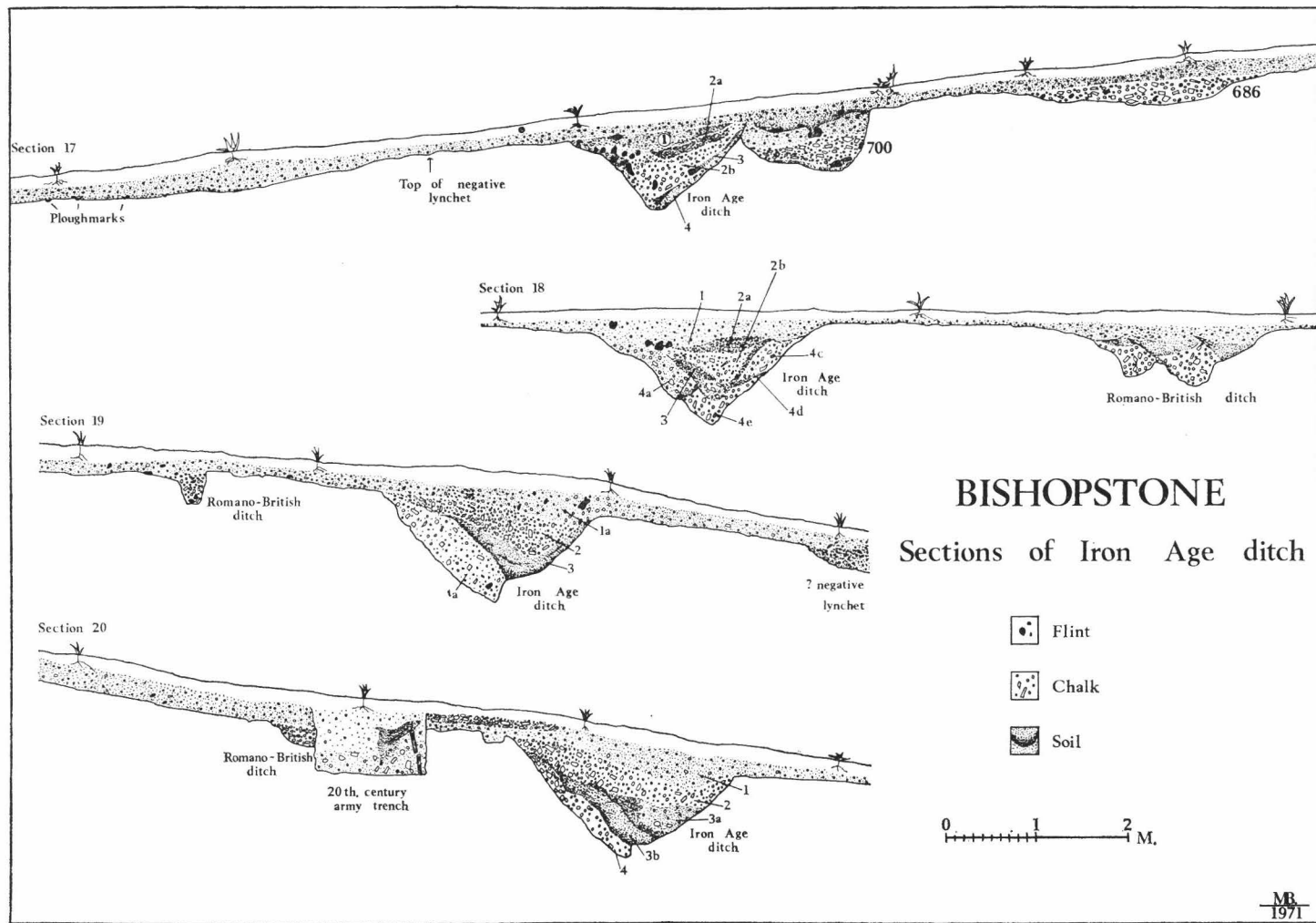


FIG. 29. Sections of the Iron Age enclosure ditch

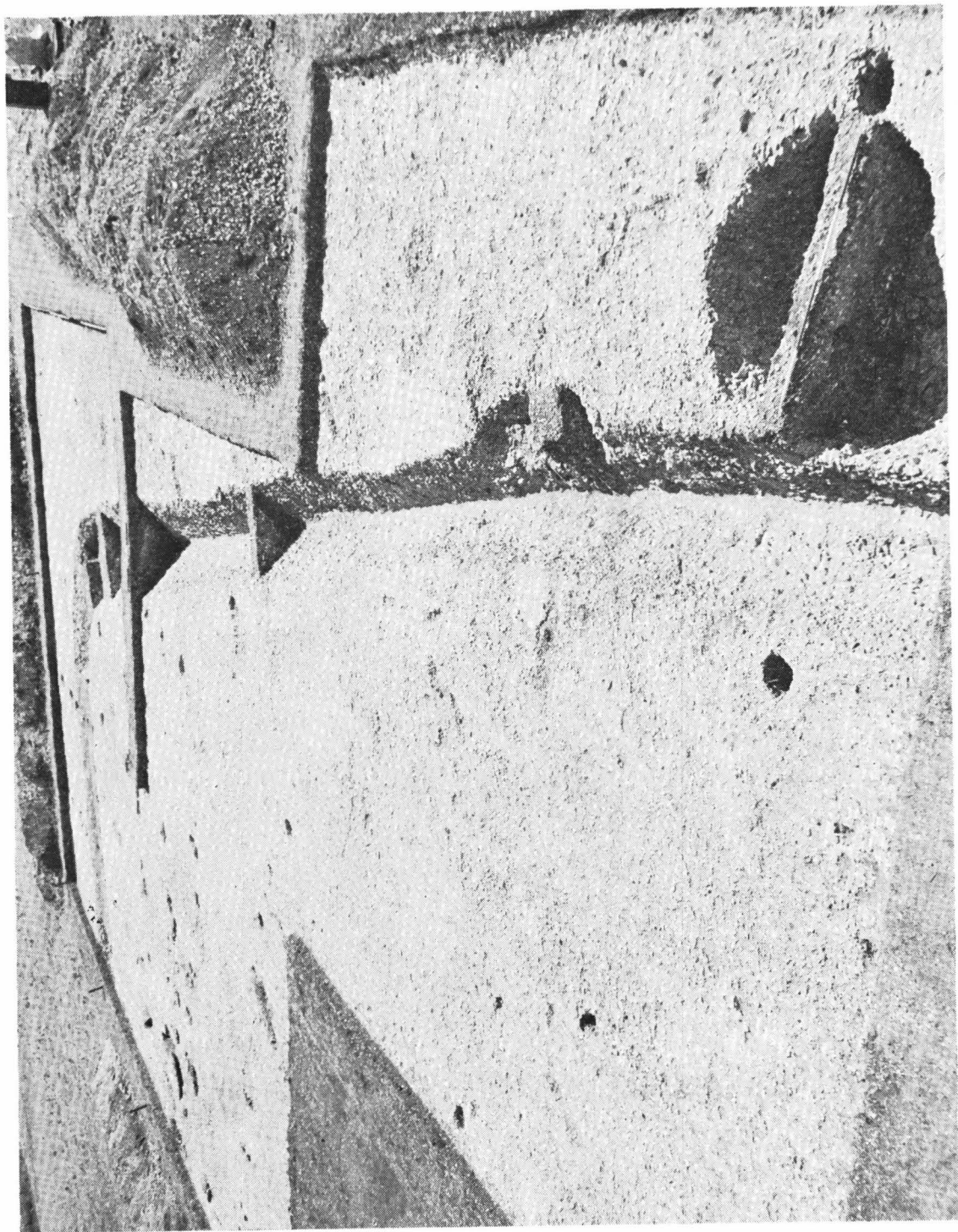


PLATE II. The south west corner of the Iron Age enclosure under excavation with pit 357 in the foreground. (Photo: B. Westley)

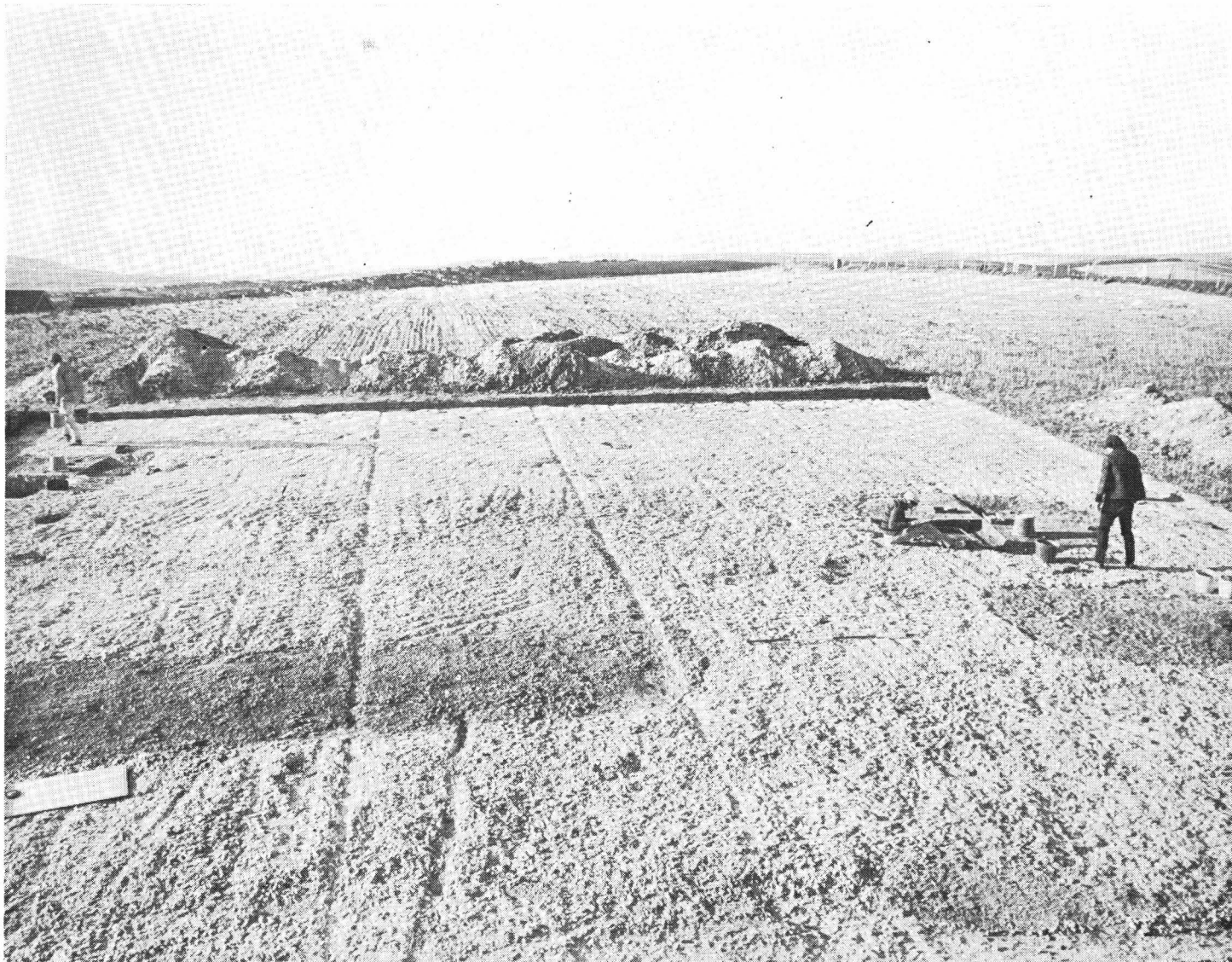


PLATE III. The southern entrance of the Iron Age enclosure prior to excavation with Neolithic pit 570 (left) and Anglo-Saxon Structure xlviii (right) under excavation. Scale 2 metres. (Photo: B. Westley)

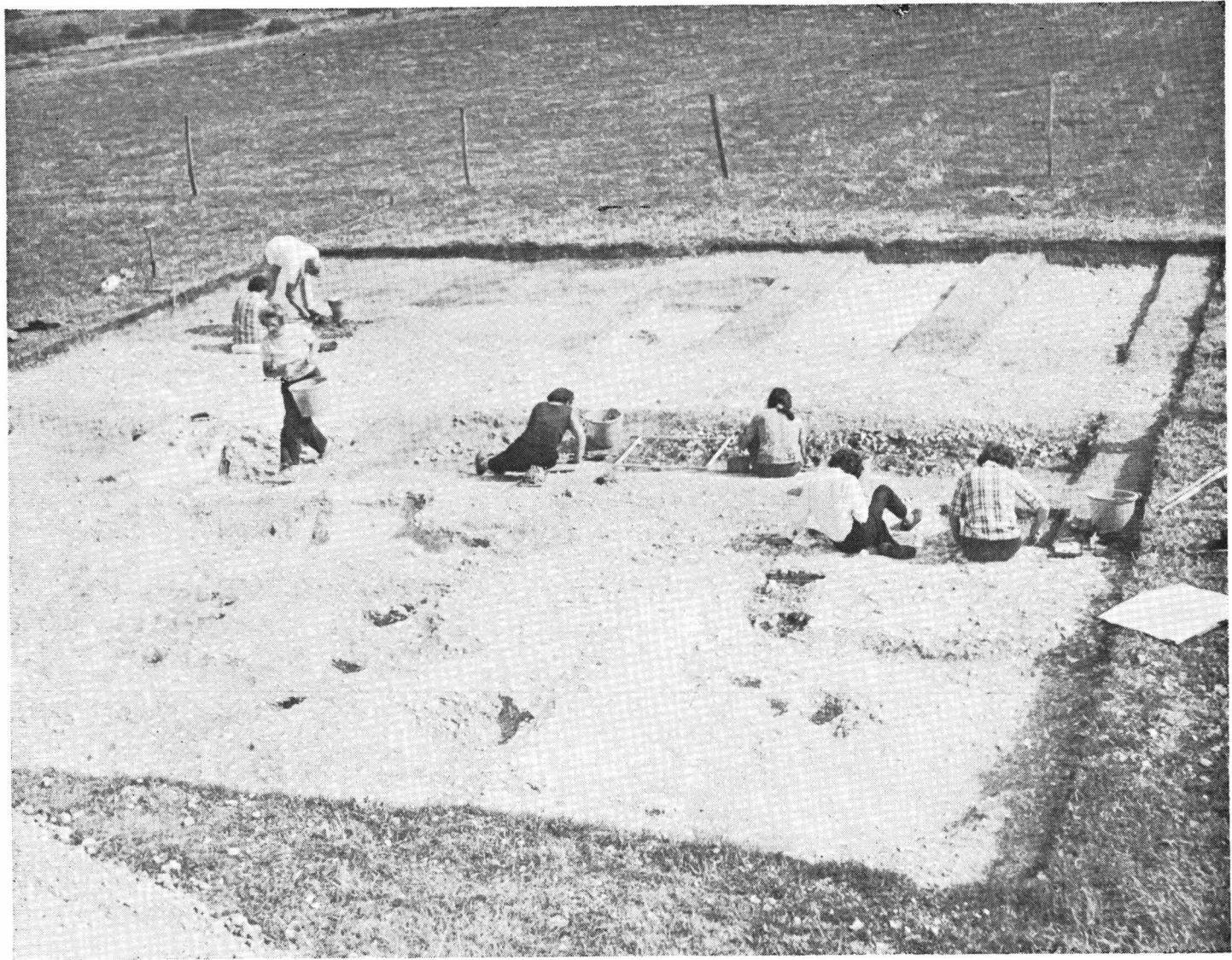


PLATE IV. The southern side of the Iron Age enclosure ditch with the negative lynchet beyond both under excavation. (Photo: D. Robinson)

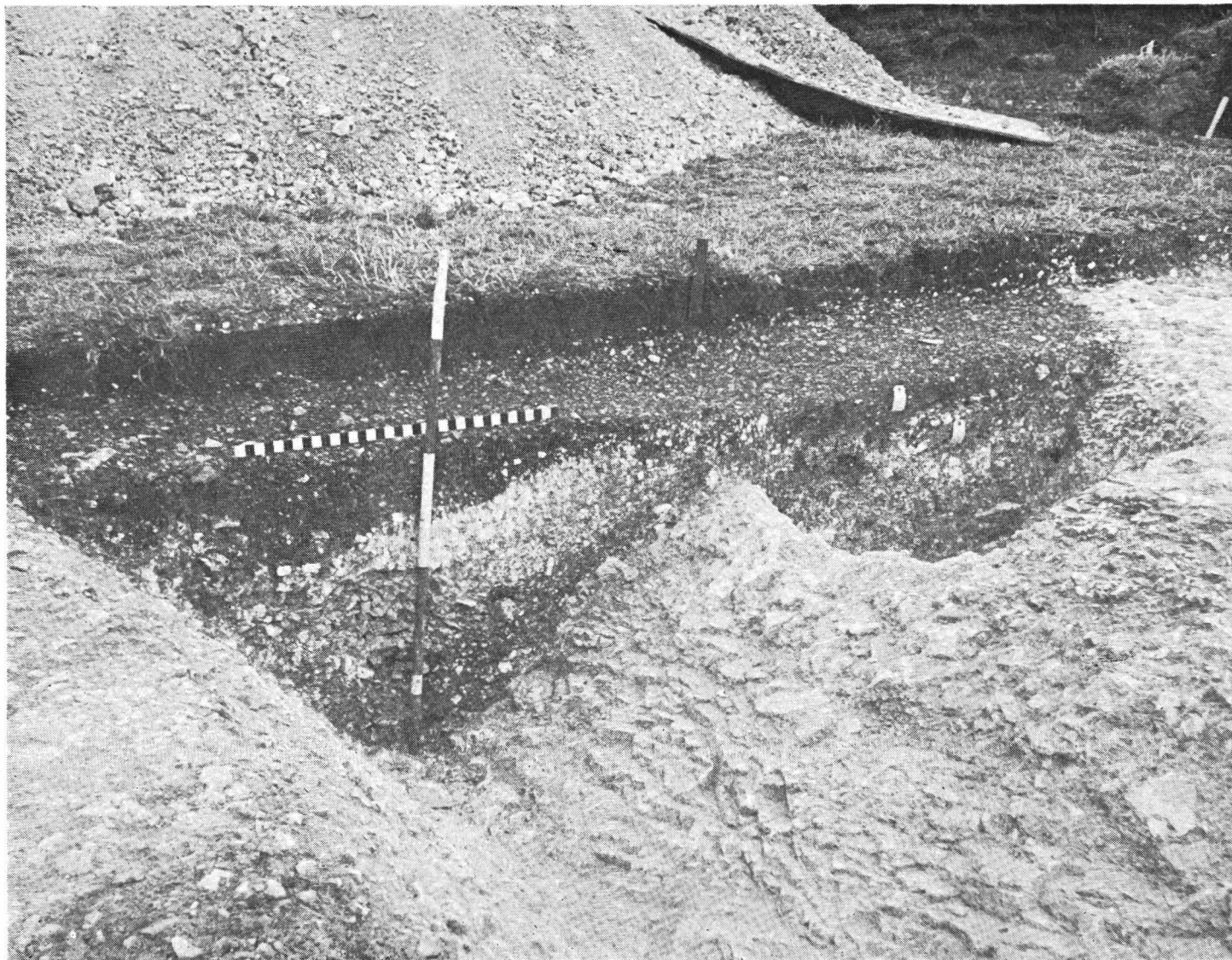


PLATE V. Section of the Iron Age enclosure ditch where it cut Neolithic pit 700. Scales in feet and inches. (Photo: D. Robinson)

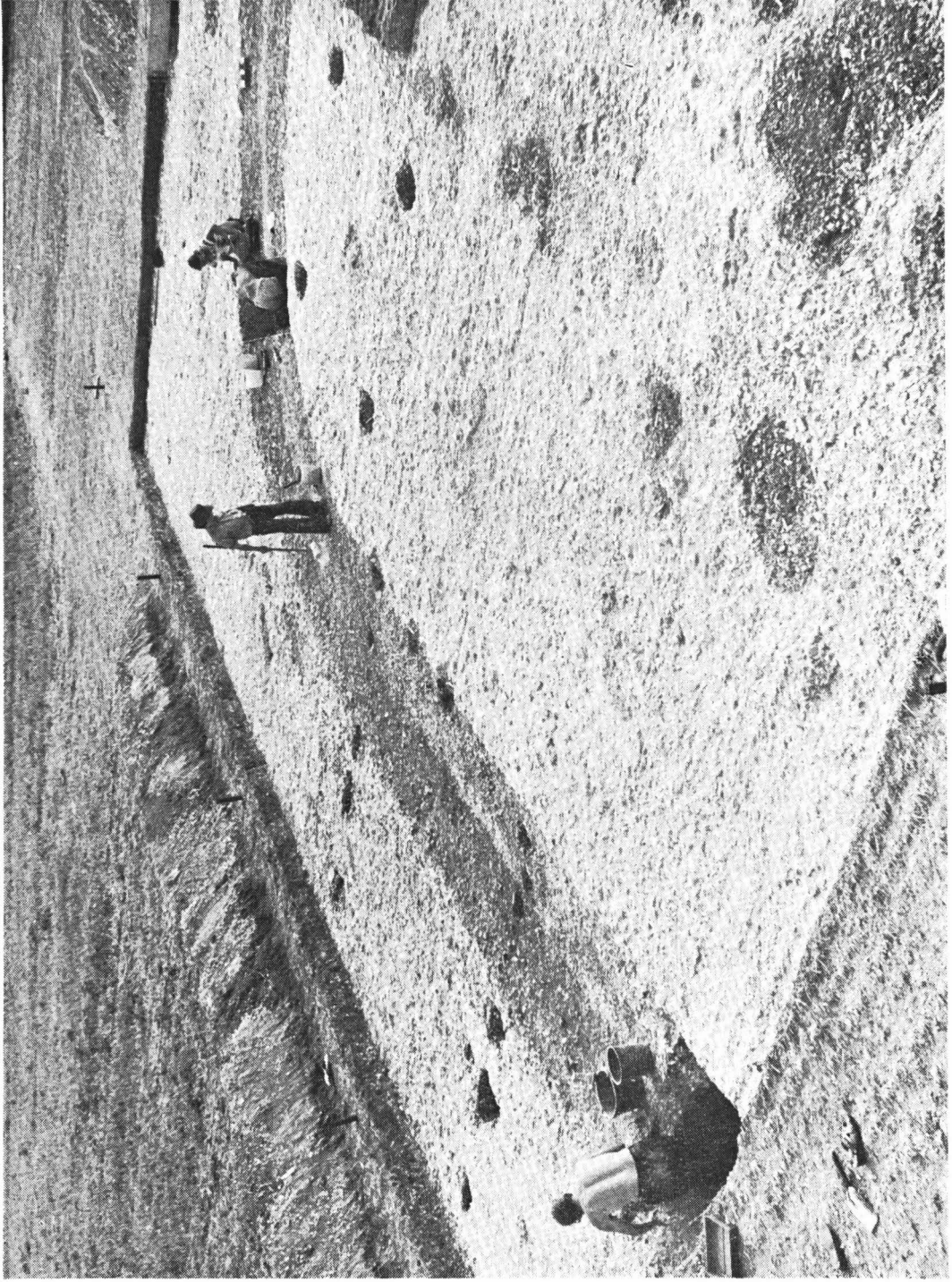


PLATE VI. The south west corner of the Iron Age enclosure ditch overlain by Anglo-Saxon structure xxxv. (Photo: B. Westley)



PLATE VII. Section xi of the Iron Age enclosure ditch on the southern side. Scale in cms. (Photo: B. Westley)

however give some slight indications that a bank originally stood inside the ditch. Generally it was from the inside that sediments found their way into the ditch, though this would have resulted naturally to some extent from the hill's gradient. It was also against the inner side that the main layers of chalk rubble, possibly derived bank material, accumulated. Conversely, but less plausibly, it might be said that the presence of a negative lynchet two metres from the outer lip of the ditch allowed sufficient space for a bank (Fig. 23). On whatever side it lay the hypothetical bank does not appear to have been topped by a hedge as mollusc analyses from the ditch sediments showed.

Despite the fact that a broadly similar sequence of layers has been recorded in each of the sections described it would be erroneous to assume that similar sediments were certainly contemporary. Natural weathering processes might result in identical sediments being laid down once the fill had reached a certain level, which could have been reached at quite different times in different sections. It was also often difficult to distinguish recuts of the ditch from slumped sediments in its fill. Being mindful of these caveats we can identify at least one recut round the entire perimeter marked at its base by layer 3. As many as three recuts were indicated near the southern entrance, and Section 12 showed two. We may perhaps see a modern analogy for the recutting of this ditch in the annual hedging and ditching which was, until recently, an important part of the agricultural cycle.

In most cases the recuts seem to have been made after the ditch had entirely filled with sediment. Had this been the result of only natural weathering, then experimental data suggest that it could have taken more than a quarter of a century.¹ However, as we have seen, some layers were deliberately thrown into the ditch, making impossible a precise calculation of its life. Nonetheless, the observed cycles of recutting and sedimentation suggest that the enclosure served as a feature of the landscape for a fair period of time.

In order to establish when and for how long the ditch is likely to have been open we must review briefly the finds it contained and their distribution. Most of the early Iron Age artifacts came from the ditch, but they did not have a uniform distribution round the enclosure; it is therefore constructive to compare the numbers of Iron Age sherds from various cuttings. Six metres of ditch east of the north entrance produced 21 sherds, giving a density of 3.5 sherds to the metre. Section 18, also on the north side, had 4 sherds to the metre, whilst Sections 19 and 20, both on the east side had respectively 18 and 6.6 sherds to the metre. When we compare these figures to the density of 547 sherds to the metre from the east end of the southern side it becomes apparent how great was the concentration there. This is simply explained by the fact that just inside the ditch on its southern side was the main area of early Iron Age settlement.

There was not however a uniform density of finds in all layers of the ditch on the southern side; this can be seen from the following breakdown of the numbers of sherds in each layer over a 20m. length of ditch:—

Layer	1	2	3	4	Total
Sherds	692	495	92	93	1372

This is accounted for partly by the fact that ditch sedimentation is an exponential process, the lower sediments being deposited very much more rapidly than those at the top. Secondly

¹ See P. A. Jewell (ed.), *The experimental earthwork on Overton Down, Wiltshire, 1960* (British Association for the Advancement of Science, 1963), pp. 8-11 and references cited.

it seems that once the ditch had largely filled with sediment it became a dumping ground for refuse. A dark band of occupation refuse similar to layer 1b was noted as the final Iron Age layer in the enclosure ditch at Little Woodbury.¹ At Bishopstone however, the refuse seemed to be of a slightly specialised character; food debris seldom occurred, and nearly all the finds were pottery and fired clay. There were two main concentrations, the largest 40m. east of the southern entrance, the smaller 10m. west of the same. Both corresponded to posthole complexes in the enclosed area. We might interpret the distribution as refuse from hearths, but it also seems possible that these were the areas in which bonfire firings of pottery and clay objects took place.

A selection of vessels from the feature is illustrated (1-33). With the exception of some later pieces in the top few centimetres each layer of the ditch produced the same general range of pottery fabrics; Table Va gives a breakdown of the total ditch assemblage. The proportionate importance of fabrics in a sample of 10,000 sherds is given by the pie chart on Fig. 28 and it is on this sample that the following percentages are based. Predominant amongst the material were straight sided bucket-shaped pots and shallow bowls, both often had pie-crust decoration on the rim. These were almost invariably of fabric 2a, which accounted for 58% of the pottery in the ditch. The second most important fabric type at 16% was 3a, a sandy ware used to produce vessels similar to those of fabric 2a. Then there were two fine sandy burnished wares, 3b (11%) and 3c (5%); the former used for shouldered vessels with everted rims and pedestal bases, the latter used for globular vessels and open bowls. Almost entirely absent from the enclosure ditch were fabrics 2b and 5, which were characteristic of the later Iron Age unenclosed settlement. By the time that 'saucepan pots,' a characteristic vessel form in fabric 5, were in vogue the ditch had virtually silted up, so that only a few sherds were deposited in the top centimetres. Professor Cunliffe regards 'saucepan pots' as a fairly distinct phenomenon of the third and second centuries B.C.;² thus the ditch was probably infilled by the third century. Certainly the vessels from the enclosure belong to the earlier part of the Iron Age, and are types which were probably made between the fifth and third centuries B.C.

Small finds allow no more precise dating. There were only two metal objects, both bronze, and one of them (27) was a rather nondescript small hook from layer 2a. The other object, a fibula (28), is unfortunately without good stratigraphic associations having been found among spoil taken from the ditch. It was however enclosed in a chalky material which almost certainly came from layer 2. It was a La Tène I type which was probably made during the fourth century B.C. or later. There was also a piece of iron forging slag from layer 2a. Objects of fired clay were much more plentiful, and the following illustrated pieces came from the ditch; C1-3, 6-14, 16, 18 and 21-26. Illustrated stone objects from this source are as follows:— 2, 9, 11, 13, 14 and 16; there was one bone object, No. 22.

THE ENTRANCES (Figs. 5 and 27 and Plate III)

Two entrances to the enclosure have been found, one on the northern side, the other on the southern. They were not centrally placed on their respective sides. The southern entrance was 22m. from the south corner, and the northern about 41m. from the projected position on the north corner. Examination of the contour plan (Fig. 2) will show that a line joining these two entrances is approximately that of the ridge crest. The entrances were essentially simple breaks

¹ G. Bersu, 'Excavations at Little Woodbury, Wiltshire, Part I,' *P.P.S.*, vol. 6 (1940), pp. 35-40.

² B. W. Cunliffe, 1974, *op. cit.*, p. 42.



PLATE VIII. Iron Age Burial 1. Scale in cms. (Photo: B. Westley)



PLATE IX. Iron Age Burial 2. (Photo: S. Adams)

in the ditch with no more elaborate arrangement than a slight widening of the ditch as it approached the terminals. The chalk causeway of the northern entrance was 5.8m. wide and that of the southern, 3.8m. wide. However, as Fig. 27 shows, the recuts at the south entrance stopped short of their predecessors giving, at the time of layer 3 for instance, a width of 5m. In neither case was there any evidence of entrance structures, not a single posthole of the early Iron Age.¹ There were however slight indications of structures within the ditch terminals themselves. At the two corners of the ditch in each terminal was a small half-circular recess made in the chalk; these were about 14cm. in diameter and 5cm. deep. They followed the profile of the terminals and tapered to a point, the maximum length being 73cm. Presumably these recesses were intended as post sockets, but such small posts can scarcely have formed an entrance structure. A more plausible explanation is that they formed part of a barrier to prevent animals wandering into the ditch where it sloped up to the entrance. The same function seems to have been performed by small palisade slots flanking the causeways at Torberry, Sussex, and Danebury, Hampshire.² Whatever barrier may have existed to block the entrances themselves has left no archaeological trace. Inside the enclosure near the entrances there were virtually no contemporary features (Fig. 23), and it seems likely that a trackway existed between the entrances. Some confirmation of this is provided by a Romano-British enclosure which was laid out along a line joining the two entrances.

THE FIELD SYSTEM (Fig. 23)

Some three metres from the enclosure ditch on its southern side was a distinct break of slope which ran parallel to the ditch. Excavations showed this was an Iron Age negative lynchet, the base of which was scored by plough furrows. It did in fact represent the top of a field, the lower side of which was marked by a large positive lynchet. There were also indications of fields on the east side of the enclosure where a possible negative lynchet was encountered at the end of Section 19, 2.4m. from the ditch. This corresponded to a slight break of slope on the ground which is planned in Figure 2 with other traces of the field system. Excavation of the large positive lynchet on the south side showed it to have a long history spanning much of the period during which the hill was occupied. Detailed discussion of the field system is therefore reserved for a separate section; here it suffices to conclude that on two sides of the early Iron Age enclosure there were contemporary fields.

General discussion of the enclosure

Many of the early Iron Age earthworks on the South Downs share with this enclosure a subrectangular plan and two opposing simple entrances, some notable examples being on Thundersbarrow Hill, Portsdown Hill, Harrow Hill, Hollingbury and Highdown, though in the latter the entrances are not on opposite sides. The last three of these³ are substantial earthworks, often with timber rampart and gate structures and are usually regarded as hill-forts. It is with the less substantial smaller earthworks, without timber rampart elements, that the Rookery Hill enclosure has its closest parallels. In particular it is very similar to two succeeding earthworks

¹ Those on Fig. 27 are of Anglo-Saxon date.

² B. W. Cunliffe, *Iron Age sites in central Southern England* (C.B.A. Research Report No. 16, 1976), p. 5 and p. 26.

³ G. A. Holleyman, 'Harrow Hill excavations, 1936,' *S.A.C.*, vol. 78 (1937), pp. 230-51; and E. C.

Curwen, 'Excavations at Hollingbury Camp, Sussex,' *Antiquaries Journal*, vol. 12 (1932), pp. 1-16; and A. E. Wilson, 'Report on the excavations on Highdown Hill, Sussex, August 1939,' *S.A.C.*, vol. 81 (1940), pp. 173-203.

on Thundersbarrow Hill.¹ The earliest of these was trapezoidal in plan with fairly angular corners and two opposed entrances. The area enclosed was 0.6 hectares, and around it was a ditch between 1 and 0.6m. deep. Subsequently the enclosed area was enlarged to 1.2 hectares and surrounded by a new ditch of similar depth to its predecessor. Though morphologically similar to the first enclosure this was less angular and may have had slightly inturned banks at the entrance. The Thundersbarrow enclosures survived rather better than that on Rookery Hill, and until recent destructive ploughing, banks were visible on the inside of both earthworks. At Portsdown Hill, Hampshire, only the ditch remained outlining a small trapezoidal earthwork of 0.24 hectares with two opposing slightly incurved entrances.² The site at Balcombe Quarry, Glynde, only 8km. north of Rookery Hill (Fig. 65) is not fully published, but appears to have been of the same general type.³ Again no surface indications had survived but two sides of an enclosure were marked by a ditch 3.3m. wide and 2.2m. deep. This was interrupted at one point by a causeway entrance flanked by two gateposts, which abutted on to the ditch terminals. In common with the other examples which have been discussed this enclosure seems originally to have been laid out during the early Iron Age. However, as at Rookery Hill, the area within it was also occupied during the later Iron Age.

It is often assumed that many of these early Iron Age enclosures fulfilled a primarily pastoral function.⁴ In certain instances, such as the small Portsdown enclosure, this was probably the case, but it would be wrong to assume that all the comparable earthworks were purely pastoral. If only a small cutting had been made in the Rookery Hill enclosure anywhere but on the southern side it would probably have been concluded that it was unoccupied. However on the southern side the enclosure ditch contained quantities of domestic debris, and we may anticipate subsequent discussion of the enclosed area by noting that in it were pits and postholes indicating domestic occupation. Furthermore the enclosure was surrounded by arable land, the implication being that on this site the arable and pastoral aspects of the Iron Age economy were integrated. Perhaps therefore the enclosure was intended to prevent animals on the surrounding fields, during times of fallow, from wandering into the settlement. Equally at other times it might have served to keep animals in the unoccupied northern part of the enclosure out of the fields.

THE ENCLOSED AREA

Within the enclosure were two distinct settlement areas. One, on the southern side, produced material identical to that from the enclosure ditch. The other, in the north east quadrant, contained material later than that in the body of the enclosure ditch, and represents a late Iron Age unenclosed settlement. One exception to this general rule was Burial 2 dated to the later Iron Age, which lay on the edge of the area of early Iron Age settlement.

¹ E. C. Curwen, 1933, *op. cit.*, pp. 109-33.

² R. Bradley, 'Excavations on Portsdown Hill, 1963-5,' *Proceedings of the Hampshire Field Club*, vol. 24 (1967), pp. 42-58.

³ G. P. Burstow and N. Norris, 'Excavations at Balcombe Quarry, Glynde,' *Sussex Notes and Queries* (abbreviated hereafter to *S.N.Q.*), vol. 15 (1958-62),

pp. 307-309, and G. P. Burstow et al., 'Balcombe Quarry excavations,' *S.N.Q.*, vol. 16 (1963-67), pp. 22-24.

⁴ R. Bradley, 'Economic change in the growth of early hill-forts,' in M. Jesson and D. Hill, eds., *The Iron Age and its hill-forts* (1971), pp. 71-83.

THE PITS

Pits of the Enclosed Phase. (Figs. 24 and 25).

Pit 11. (Fig. 30). A neatly cut feature oval in plan and measuring 2.1m. by 1.2m. The sides were generally straight but undercut in places, and the total depth was 0.75m. There was a thin primary fill of soil and very small pieces of chalk (5), evidently the products of natural weathering. Overlying this were chalk rubble and flints, probably manually deposited. Once this had accumulated to a depth of 15cm. a pause occurred during which a thin lens of silt (4) was laid down. This can best be interpreted as sediment blown from the surrounding fields, a likely happening in view of the rather severe, open and dry conditions which mollusc evidence shows during the Iron Age. Layer 4 was covered by a thin layer of ash, heavily burnt flints and carbonised plant remains. Among the latter, woody species were relatively few but cereals, particularly spelt, were abundant. It is of interest that burnt flints and carbonised cereals should be closely associated in this layer in view of the suggestion that pre-heated flints may have been used in the drying of cereals.¹ Charcoal from this layer gave a radiocarbon date of 270bc ± 80 (Har.-1086). Following this episode the feature was filled with chalk rubble and soil, a process interrupted only by the dumping of a second lens of carbonised material (3). Finally subsidence of the fill occurred and layer 1 slumped in to occupy the top 8cm. Land mollusc samples 7, 8 and 9 were from this feature and point to an open, predominantly agricultural environment. One species, *Oxychilus cellarius*, seems to have been attracted by the concentration of organic detritus, for unburnt and partially burnt food debris must surely originally have accompanied that preserved by carbonisation. Among the 69 pottery sherds the fabric types were those found in the enclosure ditch, but their relative proportions were distinct; 2a was of subordinate importance to 3a, and there were larger proportions of 1 and 4. Two thin sherds were fine wares of type 3c with a red, possibly haematite, burnish.

Pit 15 (Fig. 30). This was adjacent to Pit 11 and of very similar size and shape; 1.85m. by 1m., with straight sides and a depth of 0.7m. On the north side there was considerable disturbance by burrowing animals. The earliest fill (4) was dark humic soil with large chalk rubble, and was probably manually deposited. Above this was a thin lens of silt (3a) identical to that in Pit 11. Subsequently a layer of dark soil and flints containing occupation debris was deposited, apparently followed by a period of weathering (2), then by more soil and chalk rubble. Among the occupation debris in layer 3 was a slightly domed bronze disc (24). The shape and stratigraphy of this feature are so similar to those of Pit 11 that it seems likely that they are contemporary; confirmation of this comes from a comparison of their pottery fabric pie charts. Furthermore the feature contained a sherd from a fabric 3c red burnished vessel very similar to those in Pit 11.

Pit 228 (Fig. 30). A circular feature of diameter 0.8m., bowl-shaped in profile with a depth of 0.17m. The fill was soil and small chalk rubble with small pieces of carbon. It was particularly rich in occupation debris, which included an interesting pottery group consisting of vessels 44-52. The main characteristic of these is pie-crust decoration on the rim, such decoration was also common in layer 1b of the enclosure ditch. However the pie chart shows proportionately the same pottery fabrics as in Pits 11 and 15; 2a is of less importance than in the ditch. Small finds included part of the lower stone of a saddle quern (3); a chalk loomweight (4); other worked pieces of chalk bored by marine molluscs, possibly net weights; a sawn horn core of *Bos. sp.*, probably used as a handle. A pebble (15) was slightly polished on one side where there also appeared to be a little iron staining. An indication of the use of metals is two pieces of bronze slag; there were also quantities of a curious non-metalliferous slag, the origin of which is discussed below.

Pit 4 (Fig. 33). An oval feature 2.7m. by 1.9m., which in section had a stepped profile, the southern third being 0.26m. deep, and the remainder 0.80m. deep. Its regular oval plan suggested that the stepped arrangement was deliberate rather than a product of two separate intersecting features. The primary fill (3) was large chalk rubble within which there was a finer stratigraphy marked by bands of very small chalk rubble. Subsequently the feature appears to have been recut or recleared because this fine stratigraphy was uncomformable with the base of layer 2. The latter consisted largely of soil with a few flints and small pieces of chalk. A bowl-shaped area in the centre of the feature was occupied by layer 1, in plan this was 1m. in diameter, and distinguished by the presence of quantities of fire cracked flints. 214 sherds included vessels 101, 97 and 88. There was also a sherd from a thick walled circular vessel, perhaps used in salt production. The pottery fabrics were represented in very similar proportions to the enclosure ditch where the vessel forms are paralleled. Other finds were a piece of iron oxide, possibly haematite, and pieces of a non-metalliferous slag.

Feature 618 (Fig. 33). An irregular scoop-shaped feature 3.7m. by 2.2m. and 0.25m. deep, filled with dark brown soil containing some chalk and flints. Amongst this were 140 sherds in fabrics of similar proportional importance to the ditch. The feature also contained a tiny fragment of a bronze pin shaft (not illustrated).

Pits of the Later Unenclosed Settlement (Fig. 26)

The pits in this area mostly contained pottery of fabric 5 used to produce characteristically late Iron Age vessels. There were however three pits, Nos. 790, 791 and 787, which produced distinctive fabrics and vessel forms, and represent an earlier phase of the late Iron Age settlement.

¹ B. W. Cunliffe, 1974, *op. cit.*, pp. 167-168.

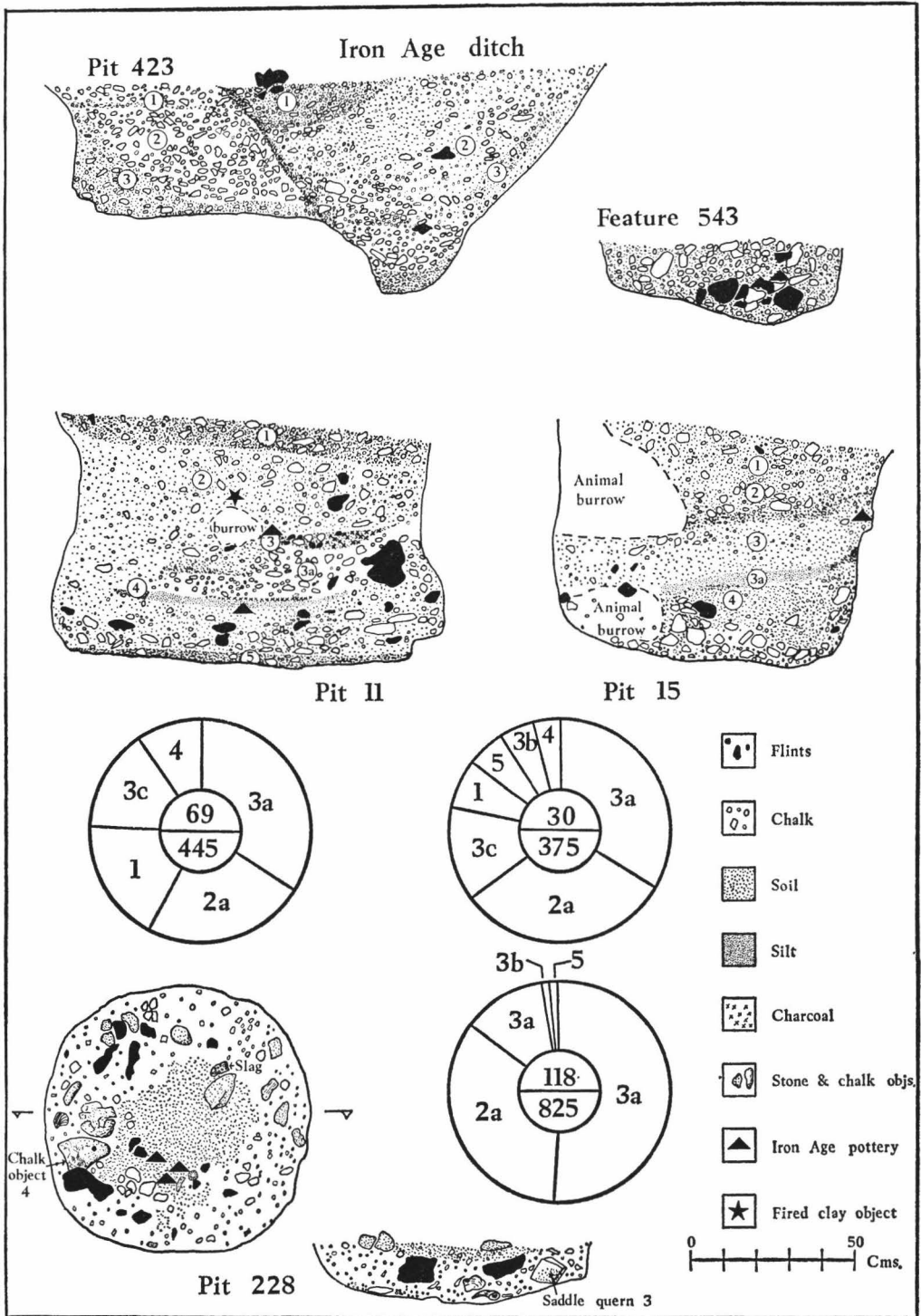


FIG. 30. Early Iron Age pit sections with a key to sediments and pie charts showing the proportions of pottery fabric types

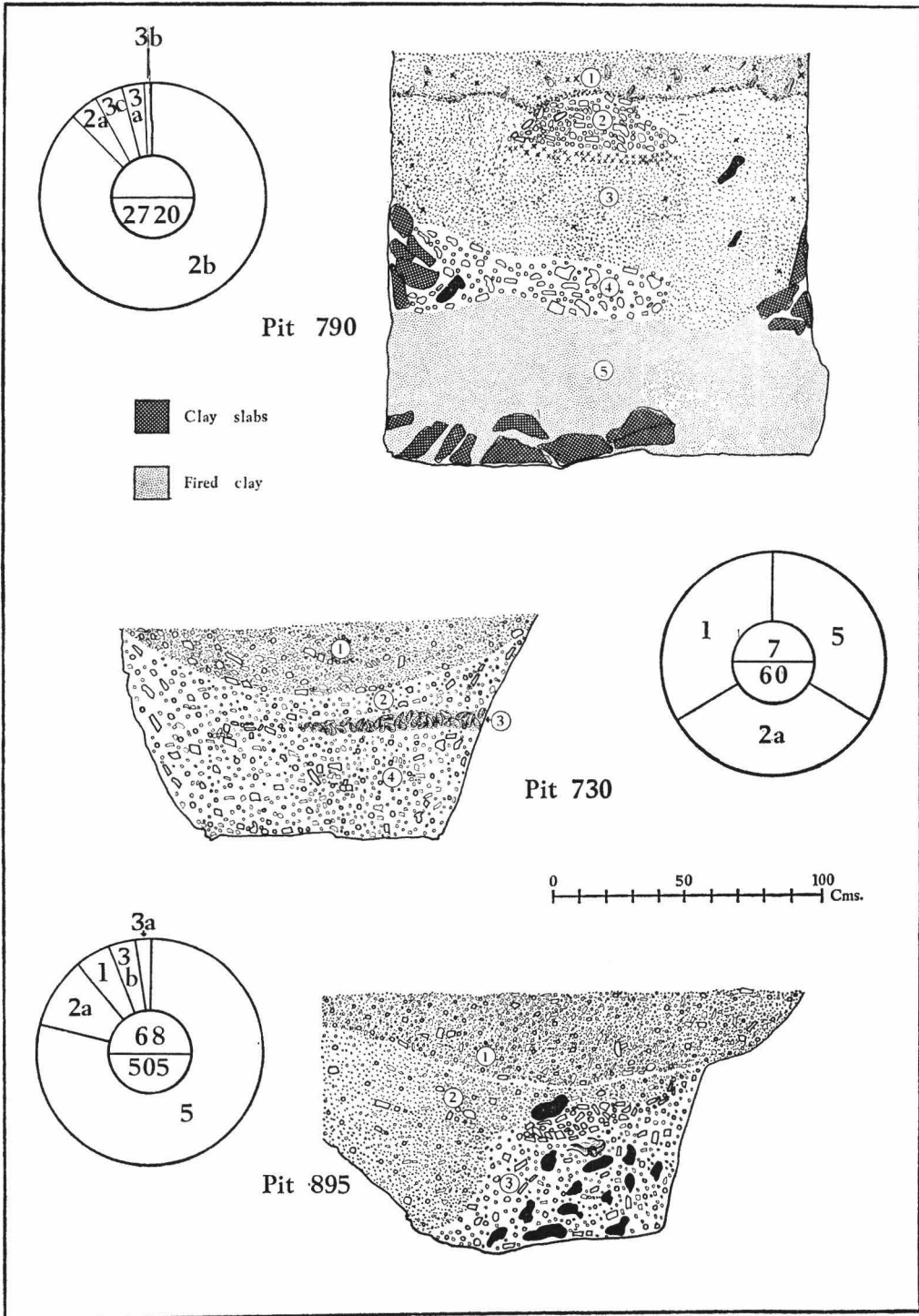


FIG. 31. Late Iron Age pit sections with pie charts showing the proportions of pottery fabric types

Pit 790 (Fig. 31). A nearly circular feature of diameter 1.3m. and depth 1.5m., straight sided and slightly undercut in places. The primary fill was burnt clay (5) which probably came from the Woolwich and Reading Beds at Newhaven. Most pieces were amorphous lumps, but on the bottom of the pit and at the top of layer 5, particularly round the edge of the feature, were 113 clay slabs, some up to 15cm. across. Many such pieces had one flat, heavily burnt, face and another rough face, none showed wattle impressions. Their occurrence round the edge of the pit suggests that they might have been a lining, but none were found actually adhering to the wall, and they might equally well have been part of an oven discarded into the pit. Covering this was an area of chalk rubble (4), then soil with patches of burnt material; near the top of this layer was a lens of ash covered by a pile of chalk, the latter perhaps deposited in order to extinguish a fire. Finally, probably once the preceding sediments had settled, soil, ash and mussel shells were deposited (1). From among the burnt clay in layer 6 came an interesting group of pottery which included vessels 53-61. The majority were in fabric 2b, indeed this pit accounts for most of the examples of this type of fabric, which was used to produce distinctive round shouldered vessels. The fabric is a local one of Newhaven Clay, and the close association of sherds with burnt clay from the same source makes it possible that layer 5 is debris from pottery production. Other finds were two clay objects, one very highly fired (C15), the other part of a thin tray, possibly used in salt production.

Pit 791. Large oval pit 1.7m. by 1.2m. straight sided and 1.3m. deep; filled largely with loose chalk rubble and a little soil, among which were scattered 49 fire cracked flints. A final fill, after settling, was dark soil, pieces of carbon and burnt sandstone. The feature contained 41 sherds, 42% each of fabrics 2a and 3a, and smaller proportions of fabrics 3b (15%) and 3c (2%); one vessel in fabric 2a was a bead rimmed 'saucepan' pot. A bryozoan¹ was found on the bottom of the pit.

Pit 787. An oval pit 1.3m. by 1.1m. but only 0.25m. deep with vertical sides. The fill was broken chalk and soil among which was a carved drum-shaped chalk object (8) and nine sherds, fabrics 1, 3a and 3c being equally represented; one sherd in the latter fabric was from a bead rimmed 'saucepan' pot.

Pit 730 (Fig. 31). An approximately rectangular shaped pit 1.8m. by 1.5m. and 0.76m. deep with a step cut in the south edge. It had been filled largely with chalk rubble interrupted by a layer of mussel shells, settling of the rubble accounts for the top, soil-rich, layer. Only seven sherds were found of fabrics 5, 2a and 1; a chalk weight (not illustrated) came from layer 4.

Pit 895 (Fig. 31). A sub-rectangular straight sided pit, 2.6m. by 1.7m. and 0.95m. deep. A primary fill of loose chalk rubble with flints (3) was followed by soil with chalk rubble (2), then by a layer of soil (1). 79% of the sherds were of fabric 5, two of them, including vessel 91, were decorated with combing, three others had 'eyebrow' decoration. The small finds were a chalk spindle whorl, an iron nail (neither illustrated) and a piece of non-metalliferous slag.

Pit 920 (Fig. 32). An oval pit with slightly sloping sides and a step at the southern end, 2m. by 1.38m. and 0.76m. deep. Layer 7 was brown earth with layers of ash, a thin band of crushed charcoal separated it from layer 6. The latter consisted of soil and chalk with numerous mussel shells, pieces of charcoal and pottery. Above this was a layer of dark soil and charcoal (5), amongst which were large pottery sherds. In places lines of ashy soil were visible and are shown on the plan, they might however represent old rodent burrows. Following this the feature was manually filled with chalk rubble, loosely packed at the bottom (4), but very hard packed and cemented by calcium carbonate near the top. An important group of Iron Age artifacts came from the feature. Pottery was particularly abundant and included vessels 74-86 which, with the exception of Vessel 80, are all in fabric 5. Pot decoration, like the fabric, is characteristically late Iron Age; eyebrow patterns and applied bands with finger impressions. Small finds were an iron fibula (30); a rotary quern (1); three pebbles used as whetstones (17-19); a pebble used as a rubber (20); and a roughly carved piece of chalk (7). Flotation of part of layer 7 produced a small quantity of carbonised plant remains. Vessel 82, which was largely intact, contained a dark earthy deposit which on careful examination yielded a little macroscopic carbon and several small pieces of lamb's bone with cut marks. This could indicate that the vessel originally contained joints of meat. In view of the presence of complete and nearly complete vessels we may speculate that they were used to store food in the pit. On recovery it might have been discovered that the food was contaminated by rodents or mould, and consequently the vessels were abandoned and broken, then the feature was infilled with domestic debris.

Pit 737 (Fig. 32). A feature with an irregular plan 2.15m. by 1.9m. It comprised a rectangular pit of depth 0.75m. around which were three shallow scoops and three small postholes, the latter indicating that a light structure may once have stood over the pit. Its fill was largely soil with small chalk rubble and areas of charcoal and burnt soil. A bowl-shaped depression in the top was filled with mussel shells. Fabric 5 predominated, and two vessels 89 and 94 had eyebrow decoration. There were also amorphous lumps of daub and two pieces of Lower Greensand, one from a quern, the other used as a hammer.

Pit 744. An oval feature 1.6m. by 0.97m. and about 0.7m. deep. The primary fill was chalk with some unfired clay, above this was loose soil and chalk followed by a layer of large flints, pieces of Eocene Ironstone and Sandstone. The impression was that the debris of a stone structure, perhaps a hearth, had been used to infill the pit. There were seventeen sherds all of Fabric 5, of these vessel 90 is illustrated.

¹ Colonial marine organism similar to a sponge; see section on the resources of the seashore.

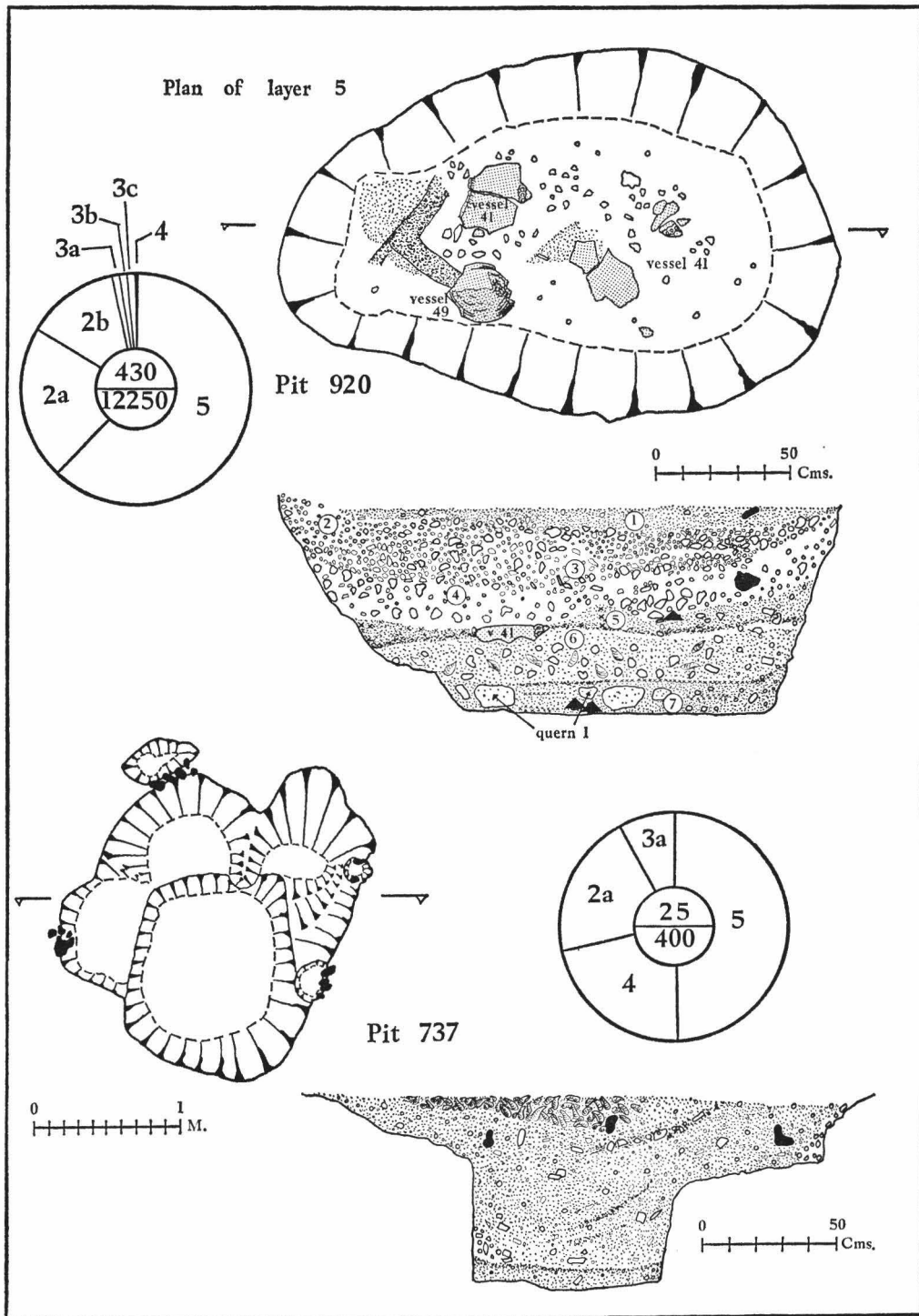


FIG. 32. Late Iron Age pits with pie charts showing the proportions of pottery fabric types

Pit 735. An oval feature 1.7m. by 1m. cut into on the west side by the Romano-British enclosure ditch, depth about 0.75m. It contained six sherds of fabric 5, one with eyebrow decoration and another a footing base; three sherds were of fabric 2a and two of fabric 3a.

Pit 731. A shallow scoop 2m. by 1.5m. but truncated on the east side by the Romano-British enclosure ditch, depth 38cm. The fill of small chalk rubble and soil contained pottery of fabric 5.

Pit 877 (Fig. 71). An oval feature 2.3m. by 1.2m. and 0.6m. deep. On the bottom was a thin primary silt of dark soil 5cm. thick, above which the soil and small chalk rubble containing occupation debris and pottery, which included vessels 62-73. As the pie chart shows, the assemblage is almost entirely fabric 5 (98%). The feature contained a large triangular loom or net weight (6), and an iron fitting from a wooden artifact (31).

Pit 728. An oval pit 2.7m. by 1.8m. with steeply sloping sides and a depth of 0.56m. Among the fill were quantities of ash and daub. It was originally excavated by Mr. Thomson in whose possession the finds remain, they are believed to be of late Iron Age date.

Pit 906. An oval pit 1.43m. by 0.84m., somewhat undercut and bell-shaped in profile, depth 0.92m. A primary fill of ash and a little soil was followed by a layer of loose large chalk rubble, then by a further layer of soil, ash and daub. The latter amounted to 124 pieces, many of which showed marks of circular wattles of average diameter 12mm. A number of pieces had one flat face. There were 91 sherds of fabric 5, and single sherds of fabrics 3a, 2a, 3c and 2b. Small finds were part of a spindle whorl in fabric 2b (C4); one corner of a triangular clay loom-weight; and a La Tène III bronze fibula (29).

Pit 712 (Fig. 5). Roughly circular 1.5m. by 1.7m. cut into Neolithic Pit 711. In section the feature was bowl-shaped and 0.46m. deep. It was filled with a uniform layer of soil, flints and fired clay. There were 197 pieces of the latter, many of them thin poorly fired tabular pieces. Seven sherds were of fabric 5, and six of fabric 2a.

Pit 716 (Fig. 5). This was markedly rectangular in shape and cut into the final fill of the early Iron Age enclosure ditch beside the north entrance. Its proportions were 2m. by 0.15m. and 0.61m. deep. The earliest layer was chalk rubble, above which were 38cm. of burnt clay mixed with ash. Most of the clay was in crumbly amorphous lumps, but one fragment had two flat faces at right angles. Finally the feature was filled with soil and small chalk rubble containing some burnt material. Amongst the fired clay were parts of two possible potin coins (23). There were two pottery sherds of fabric 3a.

Pit 714 (Fig. 5). Approximately circular in plan, 1.6m. by 1.8m., fairly straight sides splaying towards the top as a result of weathering, depth 0.92m. Two main layers were identified, the earliest being soil with flints and the later chalk rubble. The pit contained 13 sherds and the fabrics were present in the following order of decreasing importance—3a, 3b, 4, 3c. One small sherd was decorated with a curvilinear design.

Pit 66 (Fig. 39). An oval pit 1.3m. by 1.10m. with slightly sloping sides, and 72cm. deep. Similar in form to some of the other pits and containing a small proportion of fabric 5, it was probably originally used as a storage pit. However it was subsequently used for the disposal of a human body and will therefore be more fully discussed below.

General discussion of the pits

Sufficient has already been said about the pottery types in the two occupation areas to justify their being associated with different phases of the Iron Age. The earlier group was, as we have seen, contemporary with the enclosure ditch and therefore probably belong to the period between the fifth and third centuries B.C. The earliest members of the later group are Pits 791 and 787 which contained sherds of 'saucepan' pot, a vessel form which seems to have been produced between the third and first centuries B.C.¹ Probably belonging to the same time bracket as these two pits is their near neighbour 790. The remaining pits, those dominated by pottery fabric 5, contained vessels very comparable with Professor Cunliffe's Eastern Atrebatian style, which he suggests was made in the hundred years preceding the Roman conquest.²

Sizeable storage pits seem to have been more significant components of the later Iron Age settlement, where there were thirteen compared with only three or four in the earlier enclosed phase. As to their function, recent experimental research, most notably at the Butser Hill ancient farm, leaves little doubt that they were used principally for the storage of seed grain.³

¹ B. W. Cunliffe, 1974, *op. cit.*, p. 42.

² B. W. Cunliffe, 1974, *op. cit.*, pp. 89-96.

³ P. J. Reynolds, 'Experimental Iron Age storage pits: an interim report,' *P.P.S.*, vol. 40 (1974), pp. 118-131.

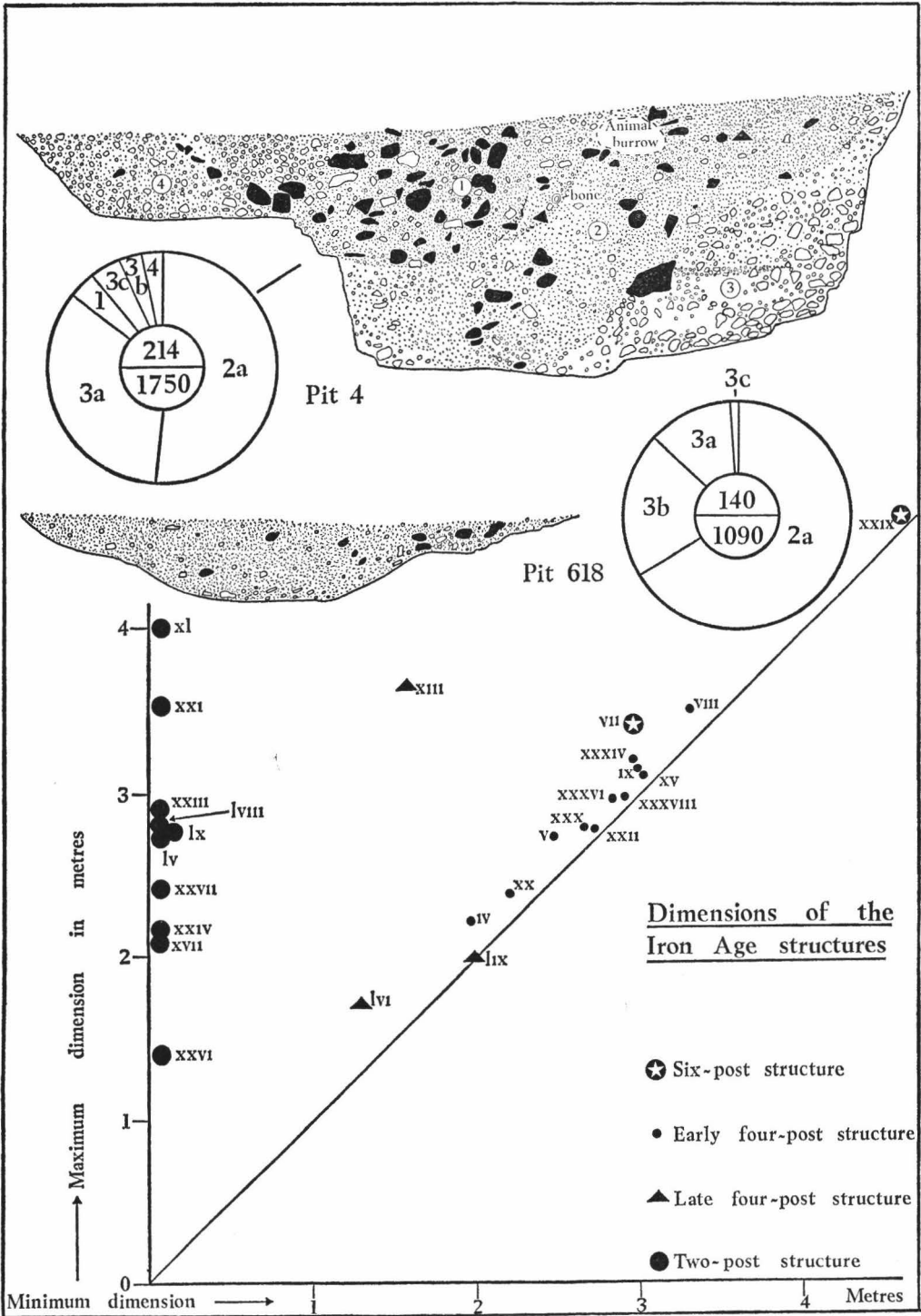


FIG. 33. Iron Age pits 4 and 618 with pie charts (for scale of pit sections see Fig. 30), and a graph of the dimensions of Iron Age structures

Further evidence of this is provided by the small amounts of carbonised grain in Pits 11, 15, 4, 920, 66, 906 and 791. This does not of course preclude the possibility that they may have also been used for the storage of other commodities. For instance we have already noted that the pots found in Pit 920 might originally have contained a store of salted meat. Furthermore the find of a bryozoan at the bottom of Pit 791 reminds us that they may even have been suitable for storing seaweed as fodder or manure. Other forms of manure certainly seem to have been stored in the pits at Aldwick, Hertfordshire.¹

It seems unlikely that the shallow Feature 731 or the irregularly shaped Pit 737 were used for storage, both are more akin to the 'working hollows' familiar on Iron Age sites since the excavation of Little Woodbury. Professor Bersu, in his report on that site, drew attention to ethnographic parallels to demonstrate the possibility that they were used for domestic tasks such as preparing crops for storage.² Pit 737 appears to have been associated with a light wooden structure represented by three shallow postholes. One is reminded of a similar hollow at Tollard Royal which had a light stake structure, interpreted as a wind break, on one side.³

Quantities of fired clay were encountered in six pits. The larger pieces were slabs with a flat face that had been in contact with heat, and an opposite rough face. Only the examples from Pit 906 had impressions of circular wattles, and here the smooth surface also showed a slight curvature. It is possible that some of this clay represents pit linings, but this is only at all convincing in the case of Pit 790 where clay formed the primary fill and was concentrated round the wall of the pit. However in none of the pits were pieces of clay found actually adhering to the walls. Furthermore, the Butser experiments have shown that, for the purposes of storing grain, a lining is unnecessary.⁴ Assuming that the clay was specifically associated with the pits it might represent pit covers similar to those found at All Cannings Cross.⁵ More likely however, is that the fired clay is debris from activities carried out in the vicinity of the pits, one possibility might be grain-drying ovens. This hypothesis is strengthened by the finding of similar pieces of fired clay in Feature 718, a probable grain-drying oven dated to just after the Roman conquest. It is of interest to note that slabs of fired clay were absent from the early Iron Age settlement despite the quantity of daub and other fired clay objects found. We can only conclude that, if they represent grain-drying ovens, the operation was carried out in some other way during the early Iron Age. A possible alternative method has already been suggested in connection with Pit 11.

Ditch 868 (Fig. 26). This was a small ditch which might better be called a gully. The total length of excavated ditch is 22 metres; it ran downhill then curved to the south. It was 0.60m. wide and an average of 0.30m. deep, filled with chalk rubble and soil. The pottery it contained was of fabrics 1, 2a, 3a, 3b and 3c, used to produce vessel forms somewhat reminiscent of those in Pit 790. Presumably therefore it was contemporary with the earlier phases of the later Iron Age settlement. What function it served is unknown, perhaps it was an animal pen, or it may have surrounded a structure represented by some roughly contemporary postholes in the area it contained.

¹ M. D. Cra'ster, 'The Aldwick Iron Age settlement, Hertfordshire,' *Proceedings Camb. Antiquarian Soc.*, vol. 54 (1961), pp. 22-46.

² G. Bersu, 1940, *op. cit.*, pp. 77-8.

³ G. J. Wainwright 'The excavation of a Durot-riegan farmstead near Tollard Royal in Cranbourne

Chase, southern England,' *P.P.S.*, vol. 34 (1968), pp. 111-112.

⁴ P. J. Reynolds, 1974, *op. cit.*, pp. 118-131.

⁵ M. E. Cunnington, *The early Iron Age inhabited site at All Cannings Cross Farm, Wiltshire* (1923), pp. 61-2.

THE IRON AGE STRUCTURES (Figs. 33-37)

Associated with the Iron Age occupation were a large number of postholes which could easily be distinguished from those of Anglo-Saxon date by their larger size and by the artifacts they contained.¹ We have noted already the extensive erosion to which the site has been subject, and it is not perhaps surprising that many of the postholes defy interpretation in terms of buildings. However, some did form groups of similar size and shape, and often these made up regularly repeated, usually geometric, shapes. Such groups have been given structure numbers in a sequence which also includes buildings of Anglo-Saxon date.

Square Four-post Structures

These were the most readily identifiable type of grouping, represented by between 14 and 16 examples. In each case the postholes of a structure were of very similar size and shape as reference to the figures will show. The posthole dimensions of different structures were more variable, extremes being represented by Structure XXX, where the post pits were 30cm. in diameter, and Structure XXXVIII where they were 70cm. in diameter. In order to compare the sizes of the structures themselves the longest side was plotted against the shortest. From the result (Fig. 33) we can see that the majority of four-post buildings lie close to a mean size of about 3 metres square. The extent to which structures lie near to the diagonal indicates how closely most structures approximate to equi-sided shapes. Measurement of the angle between sides was hampered by the frequent difficulty of establishing the exact position of a post within a post pit. An approximation often had to be made by joining the centres of postholes, but it is clear that, in most cases, the sides were within 5° of a right angle. Exceptionally angles of up to ±10° were recorded, as in the case of Structure XX, but generally speaking the four-post buildings were virtually square. In one instance, Structure XXXIV, the four posts were augmented by a fifth, No. 440, of similar dimensions, which lay part way along one side.

Two of these structures, XXX and XXXIV, lay outside the enclosure and have been tentatively associated with the pre-enclosure phase. The majority were, however, in the area of the early Iron Age enclosed settlement with which they are presumed to be contemporary. Particularly interesting in this regard is vessel 92, sherds of which were found in Posthole 222 of Structure V and in the neighbouring Pit 4. Only two of the structures (LVI and LIX) were in the area of late Iron Age occupation, both had smaller overall dimensions and postholes when compared to the earlier examples.

With regard to the arrangement of these buildings, there was a distinct group of eight on the east side of the southern entrance. Four of these were in a rough line parallel to the enclosure ditch and about 5m. apart (Fig. 25). Similar lines of four-post structures have been recorded just inside hill-fort ramparts at Grimthorpe,² Moel y Gaer³ and Balksbury.⁴ Since the excavations at Little Woodbury in the 1930's four-post structures have generally been interpreted as granaries.⁵ More recently it has been shown from ethnographic data that they may also

¹ The date of the 8 or 9 postholes which form Structure LIV is not certain; the structure is discussed in the Anglo-Saxon section.

² I. M. Stead, 'An Iron Age hill-fort at Grimthorpe, Yorkshire, England,' *P.P.S.*, vol. 34 (1968), pp. 155-159.

³ G. Guilbert, 'Moel y Gaer, 1973: an area excavation on the defences,' *Antiquity*, vol. 49 (1975), pp. 109-117.

⁴ G. J. Wainwright, 'The excavation of Balksbury Camp, Andover, Hants.', *Proc. Hants. Field Club*, vol. 26 (1969), pp. 21-55.

⁵ G. Bersu, 1940, *op. cit.*, pp. 97-98.

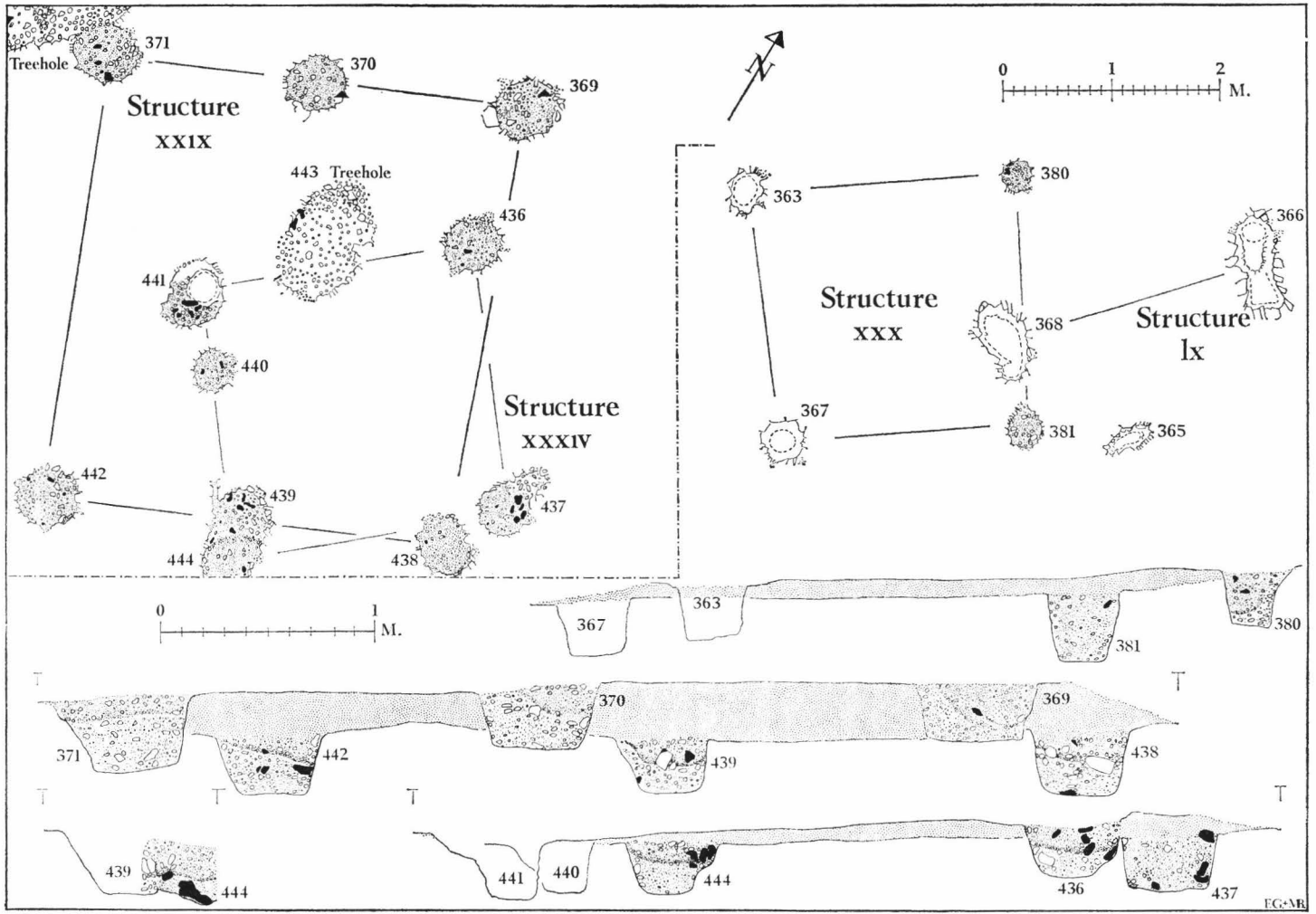


FIG. 34. Plans of Iron Age structures xxix, xxxiv, xxx and lx. Scale $\frac{1}{2}$

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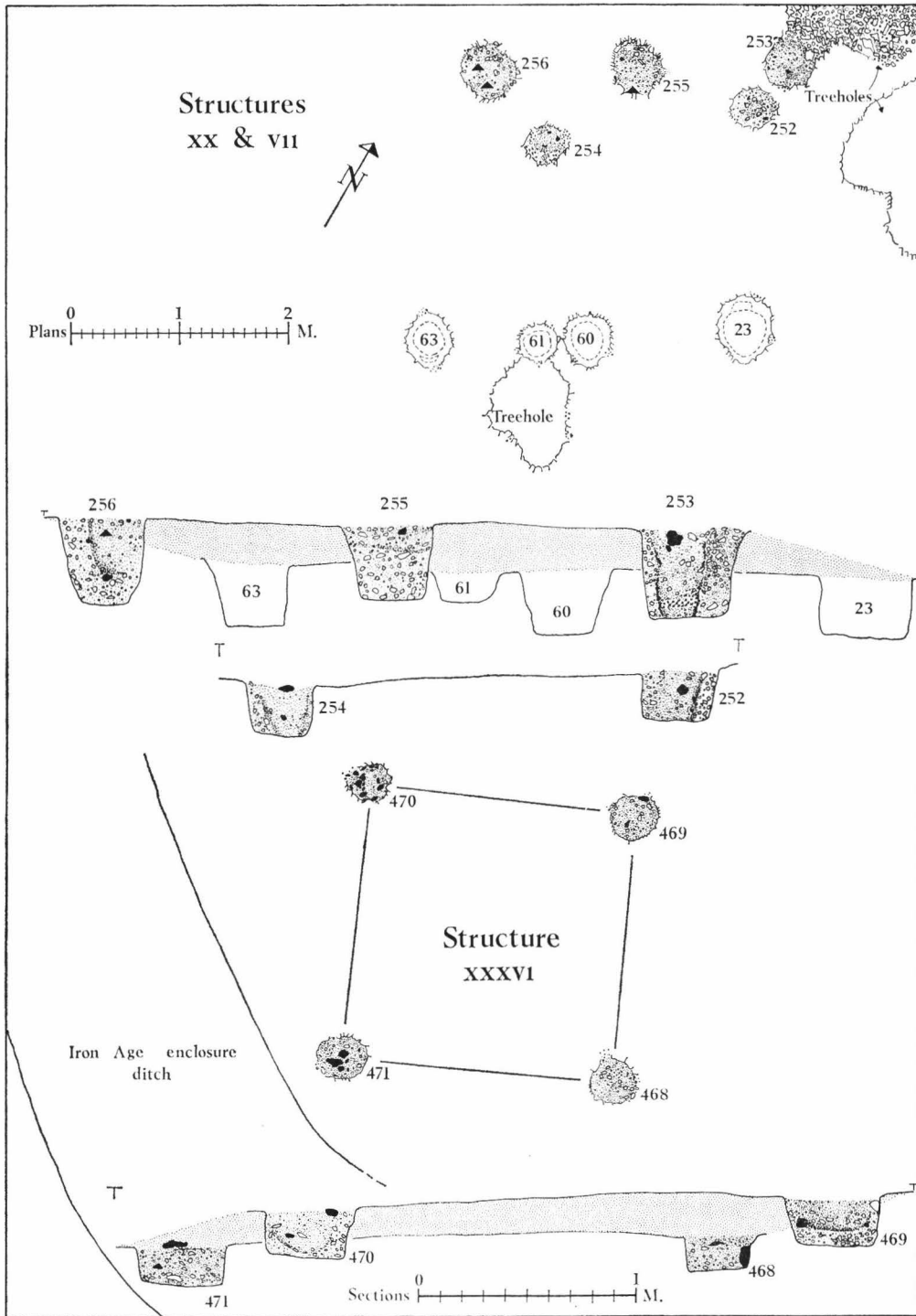


FIG. 35. Plans of Iron Age structure xx, vii and xxxvi

have fulfilled a wider variety of storage and other functions.¹ They would, for instance, have made satisfactory hay barns as an experimental reconstruction at the Avoncroft Museum of Buildings showed.² If indeed they did have several functions these do not seem to be reflected in distinct size groupings among the Bishopstone examples (Fig. 33).

Six-Post Structures

There were two or perhaps three of these, of which much the largest, Structure XXIX, lay outside the enclosure ditch. It was very nearly square and measured 4.6m. by 4.65m., with post pits about 60cm. in diameter and 30cm. deep. A number of them contained pottery sherds which were of fabrics 1a, 3b and 4. Postdating this structure was a group of four posts, Structure XXXIV, on a different alignment. The remaining two possible examples were somewhat smaller and lay within the enclosure. Structure VII was a rather curious parallelogram with complementary angles of about 102° and 78°; the overall dimensions being 3.4m. by 3m. As in the former example, there was a four-post structure (XX) on the same site, but in this instance it could not be ascertained which was the earlier. A further possible example of this building type is in the western third of Area 5. Here again the plan is a parallelogram, 6m. x 1.7m. The middle pair of posts displayed a complex succession of recuts and there is a suspicion, which will be more fully discussed in connection with Area 5, that these postholes were part of a larger, more complicated structure. Groups of six posts are a recurrent feature on Iron Age sites in Britain, and like the smaller four-post groups, they are usually interpreted as granaries.³ Indeed a common function could be indicated by the fact that on this site four-post buildings were erected on the same spot.

Rectangular Five-Post Structure XIII (Fig. 25)

This was a single unusual arrangement of postholes within the area of later Iron Age settlement. Each of the post pits was oblong in plan about 90cm. by 30cm. They were neatly cut with virtually straight sides, and a total depth of 25cm. Four of the posts formed a rectangle 3.6m. by 1.6m., within which was the fifth post with its axis at right angles to the others. No parallels have been traced for this unusual plan. The postholes contained 28 sherds of fabrics 3a, 1, 3c, 2a, 3b and five sherds of fabric 5. However, in view of the continued production of the latter fabric into the Romano-British period, an Iron Age date cannot be regarded as absolutely certain.

Two-Post Structures

There were ten pairs of postholes, the members of which were of very similar size and shape. The distance between the two posts was quite variable, with extremes of 1.4m. and 4m., but some clustering around 2.8m. was apparent (Fig. 33). In certain cases, such as the illustrated example, Structure LX (Fig. 34), a replacement seems to have been made on the same site. Large numbers of paired posts were recognised at Little Woodbury where they were referred to as drying frames or racks.⁴ It is, however, obvious that a wide range of other purposes might have been fulfilled by two upright posts.

¹ A. Ellison and P. Drewett, 'Pits and postholes in the British early Iron Age: some alternative explanations,' *P.P.S.*, vol. 37 (1971), pp. 183-94.

² P. J. Reynolds, 'Experimental archaeology,'

Worcs. archaeological newsletter, No. 9, Special Edition (1972).

³ G. J. Wainwright, 1968, *op. cit.*, pp. 112-116.

⁴ G. Bersu, 1940, *op. cit.*, pp. 94-96.

General Discussion of the Structures

Now that four distinct types of Iron Age post-built structures have been identified we are in a position to examine two posthole complexes of the early Iron Age. Both were associated with nucleations of domestic debris, and are possible candidates for consideration as domestic structures. One such complex was in Area 5 (Figs. 36-7) where there was a total of 31 postholes, a good many of which intersected. Parts of this maze can be quite easily resolved, for instance the four large pits forming Structure XXXVIII, and its replacement on the same site. Many of the others might also be parts of four- or six-post buildings. A possible example of the former is represented by postholes 505, 588, 522 and 555, whilst we have already noted that the most westerly third of this area might contain a six-post structure. Several of the postholes in this area are however capable of another interpretation, which is that they formed two roughly parallel lines 10.5m. long and 2.5m. apart. The post pits forming these hypothetical lines were not however all of one size, but they may be resolved into a series of pairs as follows:—

510 (509-538-508)	507	506	504	606	588	564
528 (529-587-530)	532	524	?522	576	555	575

It will be observed that the end posts in each row are small and shallow compared to those in the middle, also that a number of the postholes were recut. Similar parallel rows of paired posts were encountered at Little Woodbury, where one example¹ measured 3m. by 3.5m. Professor Bersu interpreted these structures as post pairs from successive corn-drying racks, but an alternative, and perhaps more plausible, explanation is that they formed part of larger structures. What is less easy to decide, in the case of Bishopstone examples, is whether we are dealing with a single long building or two six-post structures on the same alignment. Much the same difficulty attends the interpretation of a very similar group of postholes at Park Brow, which seem more likely to represent four- and six-post buildings on the same alignment.² Several of the postholes in Area 5 contained domestic refuse, particularly pottery; two sherds are illustrated, No. 102 from Posthole 568 and 99 from Posthole 505.

A second area in which there was a nucleation of postholes associated with an equal concentration of domestic refuse was in the south east corner of the excavations (Fig. 25). Here the majority of the postholes formed four-post structures, of which the most westerly, No. LXI, had a particularly complicated history with reconstructions on two or perhaps three occasions. Overlying a posthole belonging to one of these phases was a small hearth, Feature 671, in which was an interesting early Iron Age pottery group, consisting of vessels 39-43, associated with a bronze stud (25).

The distribution of early Iron Age features and artifacts shows with clarity that the settlement of that period lay on the southern side of the enclosure. Most of the reasonably level ground in that area has been excavated, and we are therefore obliged to conclude that the sites of the domestic structures have probably been uncovered. Indeed the two posthole complexes, in Area 5 and around Structure LXI on either side of the southern entrance are likely areas. Both had comparatively large quantities of domestic debris in the post pits and, in addition, the 10m. or so of enclosure ditch nearest to them produced marked concentrations of artifacts.

No comparable major nucleations of postholes were identified in the area of later Iron Age settlement (Fig. 26). In fact only 25 postholes contained material firmly associating them with

¹ G. Bersu, 1940, *op. cit.*, particularly Figs. 29 and 30, and pp. 94-96.

² W. Hawley, 'Further excavations on Park Brow,' *Archaeologia*, vol. 76 (1927), pp. 30-40, particularly Fig. p.

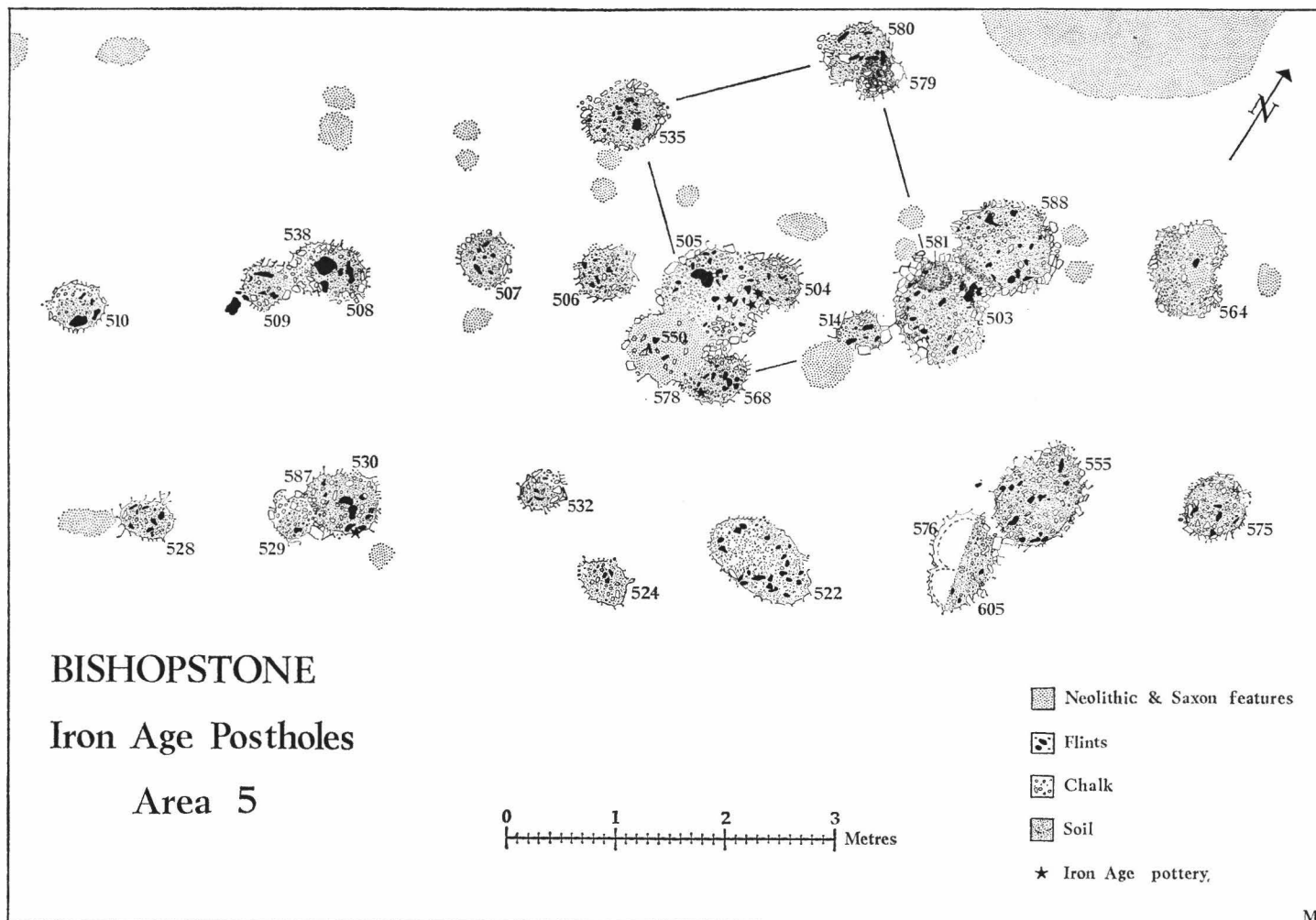


FIG. 36. Plan of Iron Age postholes in area 5

Structure
XXXVIII

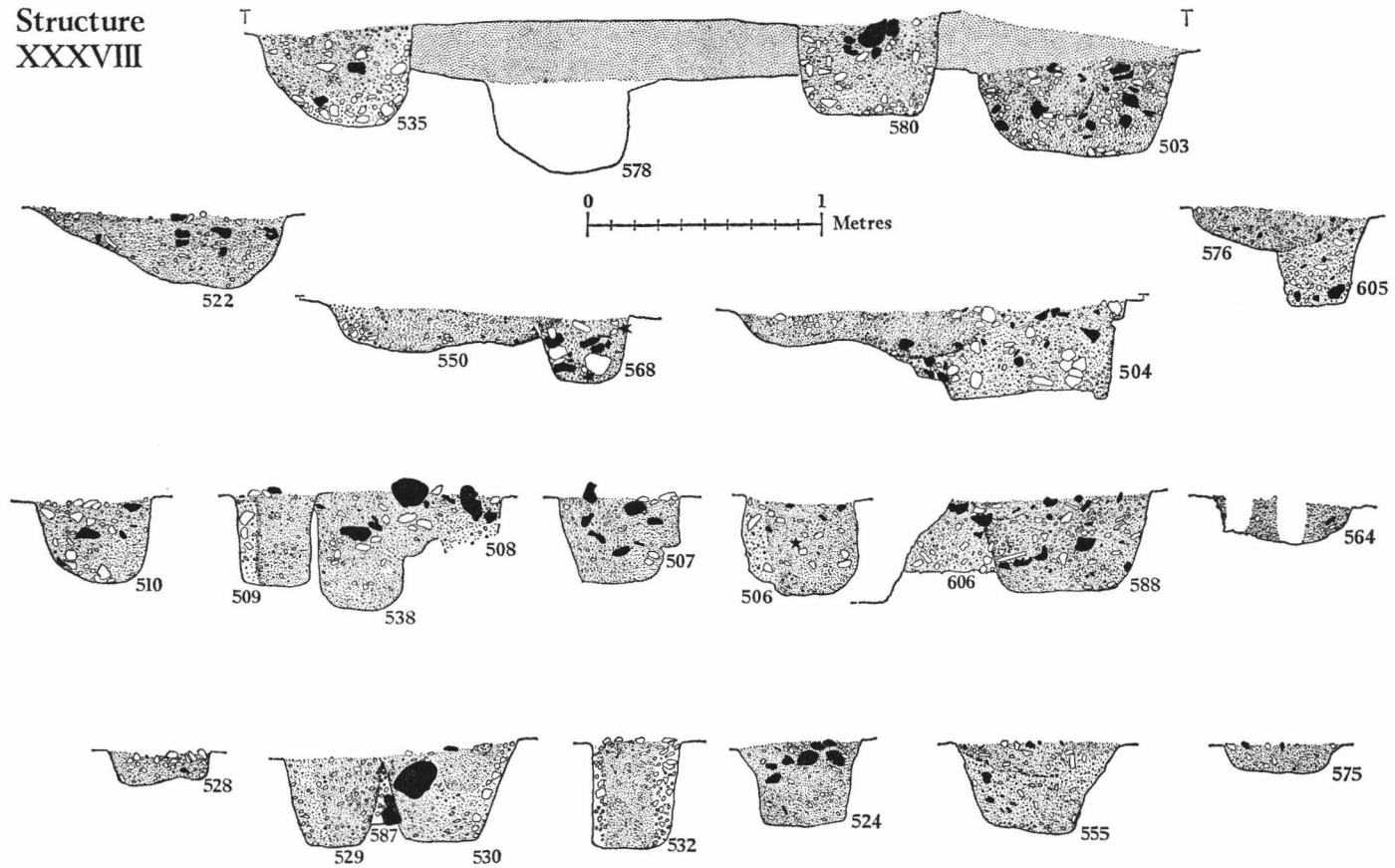


FIG. 37. Sections of Iron Age postholes in area 5

this phase, though there were 61 other undated examples in the same area. A number of the postholes belong to structure types already identified and discussed, two four-post buildings, one of five posts (XIII) and three pairs of posts.¹ A structure of some kind may perhaps have been partly enclosed by the small ditch 868. Postholes 854, 859 and 858 may have been part of such a building, together perhaps with some of the undated examples in the same area. Nearby were two short lengths of possible palisade gully which intersected then faded out (952). If domestic occupation did take place on the hill top during the later Iron Age, as finds from the pits indicate, then the main buildings probably lay outside the area excavated.

A perplexing feature of the site is the absence of any circular huts in view of the fact that these are generally regarded as the typical domestic structure of the British Iron Age. In their place all we have is an enigmatic structure founded on two lines of posts and a series of groups of two, four and six posts. The same was true of the extensively excavated site at Muntham Court, Findon, Sussex,² and the early Iron Age phase at Gussage All Saints, Dorset, where the only identifiable structures were four-post buildings.³ The types of building identified at Bishopstone have also been associated with a domestic function at Croft Ambrey, Herefordshire,⁴ and Danebury, Hampshire,⁵ where they formed part of an orderly layout within hill forts. In reaching the conclusion that the two main posthole complexes represent the sites of domestic buildings we should however have cognizance of the possibility that they do not represent the whole building. Erosion might have removed virtually all trace of stake built round houses like those recently found preserved behind the ramparts of Danebury, Hampshire.⁶ Conceivably all that would remain are the deeper postholes which marked the doorways, and these might be groups of two, four or six posts. The final solution of this problem must be left to subsequent excavations on sites where preservation is better.

THE IRON AGE BURIALS

BURIAL 1 (Fig. 38 and Plate VIII)

This was placed in a neatly cut oblong grave 1.6m. by 0.6m. and 0.58m. deep. It was dug partly into the fill of the early Iron Age enclosure ditch at the south corner, and the grave was positioned in such a way that the former ditch line and corner were probably recognisable features at the time. The orientation of the grave was approximately east to west with the head at the east end. It appeared to have been deliberately dug for the interment, which was made before any silts had time to accumulate. The burial was however placed with little regard for its arrangement; the legs were drawn up and rested against the side of the grave with the feet hard against its end. Conversely, at the head end there were some 22cm. between the skull and the end of the grave. Both hands were drawn up to the shoulders and might almost have been bound in that position. The interment was that of a young woman and (? her) baby. Bones of the latter were scattered in the grave, perhaps by rodents, but the infant probably originally lay beside the woman's head where the greatest nucleation of its bones occurred. On the same level as

¹ Posthole 156 of Structure XXI produced an illustrated sherd, No. 98.

² G. P. Burstow and G. A. Holleyman, 'Excavations at Muntham Court, Findon,' *S.N.Q.*, vol. 14 (1954-7), pp. 196-198.

³ G. J. Wainwright and M. Spratling, 'The

Iron Age settlement of Gussage All Saints,' *Antiquity*, vol. 47 (1973), pp. 109-116.

⁴ S. C. Stanford, *Croft Ambrey* (1974), pp. 122-124.

⁵ B. W. Cunliffe, 1974, *op. cit.*, pp. 256-259.

⁶ 'Danebury,' *Current Archaeology*, No. 50 (May, 1975), p. 82.

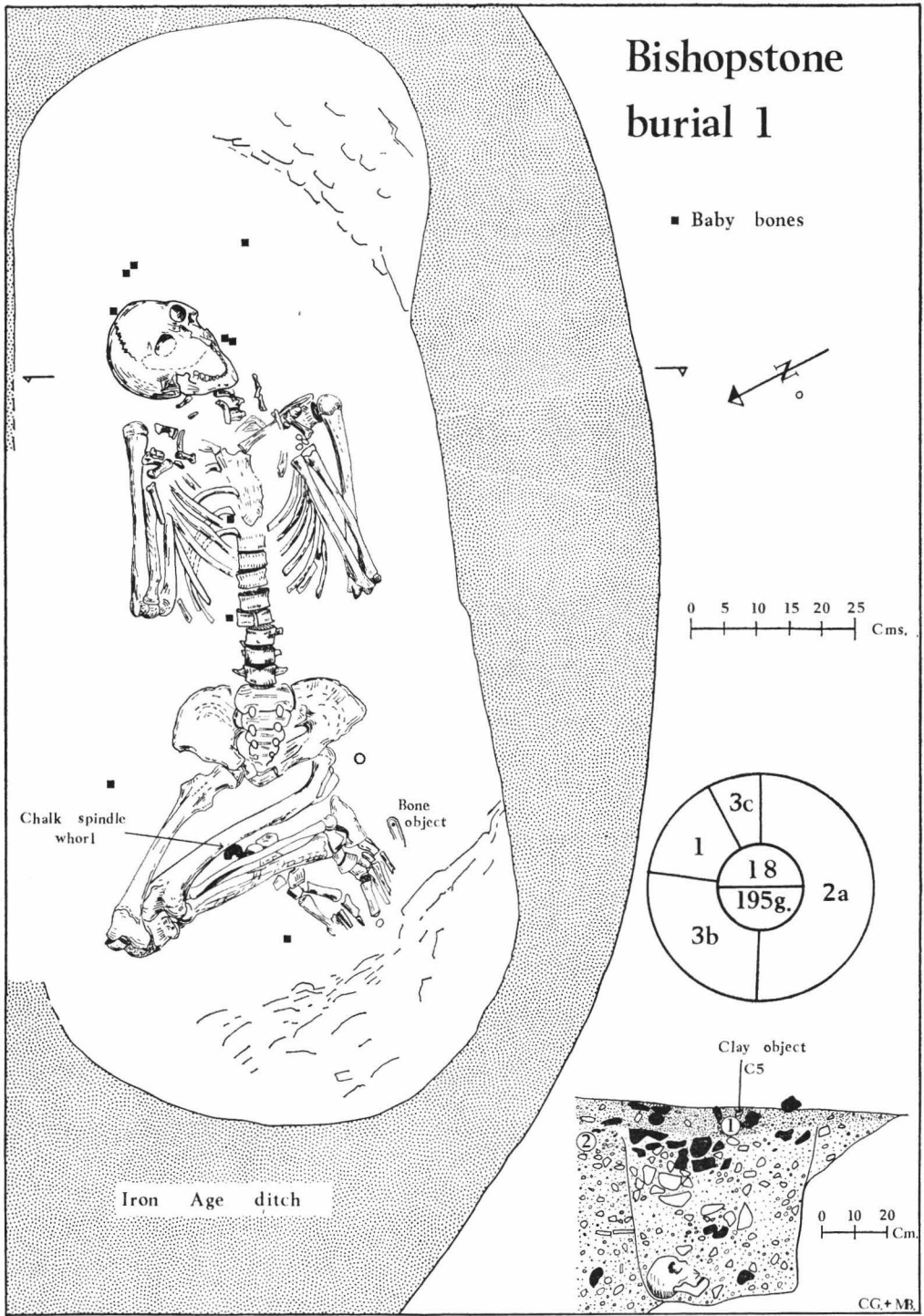


FIG. 38. Iron Age Burial 1

the burials, near the woman's feet, were two artifacts, half of a chalk spindle whorl (12) and a perforated long bone (21). Such artifacts were not particularly common in the enclosure ditch¹ and, despite the fact that they were both broken objects, they are more likely to have been deliberately placed with the burial than redeposited in the grave fill. Both might have been parts of artifacts used in textile production, perhaps having specific female associations.

The skeletons were covered by soil including, towards the top, chalk blocks and some quite large flints. Among the grave fill were several, probably redeposited, animal bones. At the time when the grave was dug the enclosure ditch had almost silted up, layer 2 had been deposited, as had the bottom few centimetres of layer 1. However the upper part of this layer overlapped the top of the grave, showing it to be contemporary with the later phases of the early Iron Age settlement. Eighteen sherds from the fill were small and of little practical assistance in dating. Most were probably redeposited from the ditch where the pottery fabrics occurred in similar proportions. It is noteworthy however that there were no fabric types specifically associated with the later Iron Age settlement.

THE HUMAN SKELETAL REMAINS by P. F. Wilkinson

The Adult Skeleton. The grave contained the basically complete and fairly well preserved skeleton of a female aged about 17 years. The sex was clear from the wide sciatic notch of the pelvis and the gracile long bones. Age was indicated by the fact that epiphyseal fusion was incomplete in many of the bones. The adult dentition was also incomplete, the third molars being absent though one was beginning to erupt. Attrition of the first and second molars was slight, grade 2 on Brothwell's scale.² Several of the teeth were affected by caries, one labial, four lingual and nine occlusal cavities occurred but in none was the decay serious. Slight calculus affected most of the teeth. Rather heavy wear occurred on the incisors; this might result from edge to edge bite or the use of the teeth in some industrial process.

Stature was calculated from the long bones to be about 1.61m. \pm 2cm.,³ build was slight although the linea aspera on the femora were strong. The lower extremities of both tibiae displayed 'squatting facets.' Evidence of osteo-arthritis was extremely slight.

The bones of both legs showed some slight deformation which might have been caused by rickets or a similar deficiency disease. This might also be indicated by a minor degree of orbital osteoporosis. The olecranon and coronoid fossae of the left humerus were linked to form a hole. The failure of this area to ossify may have been due to the person's youth, but might also be an additional indication of deficiency in the diet.

The Baby. Associated with the young adult were the fragmentary remains of an infant under three months and probably newborn. The remains included fragments of the skull, vertebrae, ribs, long bones and two partially formed teeth; these being an incisor and a second molar of the deciduous (milk) teeth.

The presence in the same grave of a female aged about 17 and an infant under three months suggests that they represent a mother and child, both of whom might have died during, or as a result of, childbirth.

¹ There were only three other spindle whorls and one bone object in the entire enclosure ditch.

² D. Brothwell, *Digging up Bones*, British Museum (Natural History), (1972), pp. 67-70.

³ Using the formula devised by Trotter and Gleser outlined in D. Brothwell, 1972, op. cit., pp. 101-103.

BURIAL 2 (Fig. 39 and Plate IX)

This was placed in an oval pit, No. 66, which measured 1.3m. by 1.1m., it had slightly sloping sides and was 0.72m. deep. There can be little doubt that the pit was originally used for storage purposes, clearly it was not dug specifically for the interment which lay 20cm. above its floor. Once the primary function had been outlived a thin layer of soil and small chalk rubble (3) was allowed to accumulate, amongst this a few carbonised cereal grains were found. Then 10cm. of larger chalk rubble was deposited, after which the burial was made. A cramped posture was necessitated by the small size of the pit; the skull rested on the pit wall and the knees lay against one side, raised some 20cm. above the remainder of the skeleton, whilst the feet were pressed against the end of the pit. The lower arms lay across the abdominal area, one on top of the other as if they had been folded or bound. Once the burial had been made a small amount of chalk rubble was thrown in and finally the pit was filled with soil and small chalk rubble, with fire cracked flints and small amounts of domestic debris. Cut into the top of the pit during the Anglo-Saxon period was Posthole 321, which formed part of the north wall of Structure I.

84% of the sherds were of fabric types contemporary with the enclosure ditch, but the remaining 16% were of fabric 5. One fairly diagnostic sherd came from the rim of a 'saucepan' pot. The burial is therefore associated with the later unenclosed settlement, and probably with its earlier phases.

THE HUMAN SKELETAL REMAINS by R. Concannon, M.A., Dip. Phys. Anth.

The skeleton is basically complete, though much erosion and damage has occurred. The skeleton is that of a robust male aged about 30-40. It is certainly adult. The cause of death is unknown and is unlikely to be linked directly to dental health (see below). The sex was clear from the hips, skull, jaws and limbs, where joints and muscular insertions are strong, showing no evidence of wasting through inability to feed. Age is usually judged largely from the teeth, but here of 29 sockets, only 6 have serviceable teeth—2 molars, 2 incisors and 2 canines. All show moderate calculus (tartar) and one molar has caries, mesially, in the neck. The upper canine and incisor show an unusual saddle-shaped pattern of wear on the biting surface. Three pre-molars were present only as massively worn decayed roots, two with root abscesses. In the other 20 sockets loss of teeth at different times has occurred through wear, decay and infection; at least one abscess having been present. The sockets had all healed. The jaw is asymmetrical, muscular insertions on the right side being strong through unequal tooth loss. The two molar teeth have relatively little wear, normally consistent with an age of 25-30, but such extensive early tooth loss makes this evidence suspect. The moderate development of osteo-arthritic 'lips' (up to 4mm. thick) on all vertebrae and on many joints, plus the partial obliteration of most key skull sutures, not now used other than as a broad index of age, suggest that the age is older than shown by the teeth. One (unidentified) rib had broken along the shaft, but healed straight, and it appears that the right fibula also broke about 10cm. from the top and healed with a slight 'kink.' The stature was judged to be about 1.74m. \pm 2cm. from the limb bones.¹ There are nine very small additional bones along the occipital suture.

General discussion of the burials

Despite the fact that the two burials are assigned to different phases in the history of the Iron Age site they share a number of features. Both were crouched with the legs drawn up against

¹ Using the formula devised by Trotter and Gleser outlined in D. Brothwell, 1972, op. cit., pp 101-103.

Bishopstone burial 2

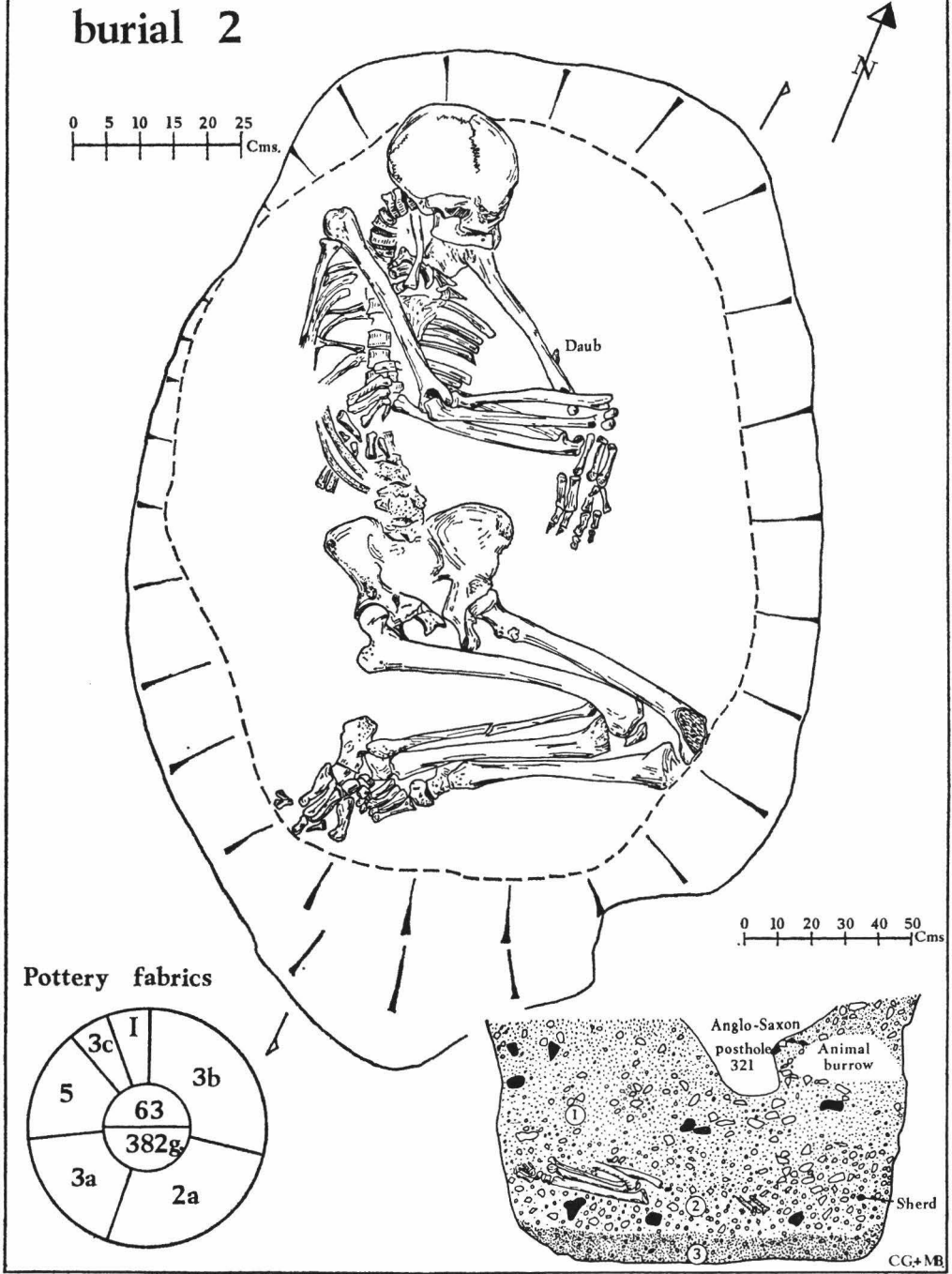


FIG. 39. Iron Age Burial 2

the sides of the grave. The arms were also in an unusual position, and the ankles were tight against the haunches as if they were originally bound or contained in some way. Both were disposed of with little regard for arrangement and with no apparent indications of ceremony. This is particularly true of Burial 2 made in a disused storage pit which was already partially infilled. It may also be of significance that both burials seem to have been placed near the periphery of their contemporary settlement; Burial 1 was actually in the boundary ditch and Burial 2 was 25m. from the nearest excavated part of the late Iron Age settlement.

Burials exhibiting many of the features noted above are fairly common components of Iron Age settlement sites in southern England. Several examples were, for instance, found at Maiden Castle and Gussage All Saints, both in Dorset.¹ Six other Iron Age inhumations are known from Sussex. The two most recent finds were at Slonk Hill, Shoreham, one in a disused storage pit, the other in a similar pit which contained little rubbish, both were dated by sherds of 'saucepan' pots, and were therefore probably roughly contemporary with Burial 2.² A woman and baby were found in the upper fill of an Iron Age ditch at Balcombe Quarry, Glynde.³ From their position in the ditch they would seem to have been roughly contemporary with the late Iron Age settlement on Rookery Hill. Another burial was found in the ditch at Highdown.⁴ The remaining example was found in the Green Street area of Eastbourne in 1929, and was accompanied by a late Iron Age pot.⁵ The occurrence of burials in and around settlement sites goes some way towards accounting for the apparent paucity of Iron Age burials over most parts of England, particularly since such burials seem not just to have been made within settlements but also elsewhere within a site's territory. That burials were made in fields for instance is evident from four cremations of late Iron Age or Roman date found in a lynchet at Asham, 6½km. north-west of Rookery Hill (Fig. 65).⁶ The practice of making burials within and near Downland settlements certainly seems to have persisted into the Roman-British period as the Newhaven excavations and a survey of the distribution of Romano-British burials on the surrounding Downs showed.⁷

THE IRON AGE POTTERY

by Sue Hamilton

This report introduces a simple new method for analysing low fired pottery fabrics. It concentrates upon a more scientific characterisation of wares but also uses the results achieved to investigate provenance. The association of fabric and types in closed groups has been held more valuable than the creation of a ceramic series.

Bishopstone, indeed, lacks an extensive sealed pottery series. Much of the Iron Age pottery comes from the enclosure ditch which has been recut several times, causing redeposition of sherds. Because the occupation spread was horizontal, the rest comes from pits and postholes unassociated by vertical stratigraphy. No pottery is associated with closely dateable objects. It would have been unwise to refer pottery solely to published types, many of which are incompletely

¹ R. E. M. Wheeler, *Maiden Castle, Dorset* (1943), pp. 346-351; and G. J. Wainwright in *Archaeological excavations 1972* (Department of Environment, H.M.S.O. 1973), p. 9.

² I am grateful to the excavator Mr. R. Hartridge for information and drawings of these burials.

³ G. P. Burstow and N. Norris, 1958-62, *op. cit.*, pp. 307-309.

⁴ A. E. Wilson, 1940, *op. cit.*, pp. 173-204.

⁵ W. Budgen, 'Eastbourne,' *S.A.C.*, vol. 71 (1930), p. 263. Since writing this Mrs. Marion Suckling has located the pot in Barbican House Museum, Lewes; it is a 'Belgic' butt-beaker.

⁶ E. and E. C. Curwen, 'Lynchet burials near Lewes,' *S.A.C.*, vol. 71 (1930), pp. 254-257.

⁷ M. G. Bell, 'The excavation of an early Romano-British site and Pleistocene landforms at Newhaven, Sussex,' *S.A.C.*, vol. 114 (1976), pp. 218-305.

defined, and themselves lacking in good associations or stratigraphy.¹ Moreover, classification based entirely upon type would have ignored quantities of undiagnostic sherds, which numerically dominated the assemblage.

Fabric is an obvious common denominator for characterising and recording the Iron Age assemblage. Every sherd provides adequate information for fabric analysis and total assemblage coverage is thus possible. Sensory perception of fabric types and verbal description of those types is, however, unsatisfactory. For instance, the description, "a ware with small grey grits," conveys little scientific information. Published reports by themselves often remain inadequate for detailed inter-assemblage comparison of fabric. The method employed here attempts partially to remedy this. Textural components of fabric are identified and expressed numerically. Fabric categories were established after detailed analysis of specific sherds. Ultimately, the whole Iron Age assemblage was weighed and counted according to these groups.

Recent studies of fabric inclusions primarily rely upon petrographic analysis. The latter is generally orientated towards ascription of provenance and is not specifically concerned with defining parameters of fabric types. Provenance is certainly an important consideration. Peacock's petrological studies have dispelled the assumption that Neolithic and Iron Age pottery² was indubitably a local product. Petrological analysis was of limited use for the Bishopstone Iron Age assemblage. Some thin sections were prepared but the pottery lacked a distinctive mineral suite which could alone indicate a specific source. The fabric analysis described below however provided adequate information for suggesting, and sometimes citing, clay sources.

Emphasis upon pottery fabric promoted a similar approach to pottery drawing. Simple outline drawings allow visual comparison only of style. When this is coupled with intangible fabric description a report can only catalogue form. Instead, the pottery illustrated in Figures 40-54 aims accurately to indicate texture. Accordingly, size, shape and quantity of inclusions are accurately drawn. Shading comprising extended parallel lines represents burnishing (e.g. vessel 82). Generally however, shading conventions, including stippling and crosshatching, are avoided. These give little textural information and reduce everything to a uniform surface.³ Lines and textures present in the fabrics themselves were preferred.

By incorporating more information in the drawings verbal description was minimised. Each vessel has a circled reference number and a fabric code corresponding to those described on pages 88-91. Pie charts partially remedy the difficulty of incorporating accurate definitions of vessel fabric.

METHOD OF ANALYSIS

The method of analysis, which is described in detail elsewhere,⁴ is relatively quick and requires a minimum of specialist knowledge. It does not seek to provide detailed petrological or chemical analysis. Results were however discussed with specialists.⁵

¹ F. R. Hodson, 'Some pottery from Eastbourne, the 'Marnians' and the pre-Roman Iron Age in Southern England,' *P.P.S.*, vol. 28 (1962), pp. 140-155.

² D. P. S. Peacock, 'Neolithic pottery production in Cornwall,' *Antiquity*, vol. 43 (1969), pp. 145-149; D. P. S. Peacock, 'A contribution to the study of Glastonbury Ware from South Western Britain,' *Antiquaries Journal*, vol. 49 (1969), pp. 41-61; and D. P. S. Peacock, 'A petrological study of certain Iron Age pottery from Western England,' *P.P.S.*, vol. 34 (1968), pp. 414-427.

³ D. A. Concannon, 'The case against stippling,' *Current Archaeology*, vol. 4 (1973), No. 2, pp. 53-54.

⁴ S. D. Hamilton, *A fabric study of the Iron Age pottery from Bishopstone, Sussex* (unpublished B.A. dissertation Institute of Archaeology, London, 1976). This work formed part of a report submitted in partial fulfilment of the requirements for the degree of B.A. of London University.

⁵ Thanks go to Dr. D. P. S. Peacock and also to F. Stockley, M.Sc., for discussing the identification of pottery inclusions.

Central to the study was a detailed analysis involving crushing and sieving of sherds from 21 pots. These sherds embraced a visually perceived range of fabrics. Wares were selected from closed contexts where the association of different fabrics to each other was irrefutable. Only when such contexts lacked a good example of a particular fabric were less well associated wares studied.

Intensive study concentrated upon the mineralogy and size of inclusions more than 0.2mm. The term inclusion refers to non-plastic material in clay. This encompasses indigenous minerals and aggregates, together with any temper added to improve a clay's potting qualities.

Crushing and Sieving. Crushing was mechanical and only very occasionally did chemicals aid the process. The text notes these occasions. Precautions enabled unnecessary fragmentation or erosion of inclusions.¹ A binocular microscope which magnified up to X50 aided identifications. It identified fine grains, under 0.2mm., with difficulty. A sieve, with a 0.2mm. mesh, extracted this material, which largely comprised undiagnostic silt. Usually 5gm. samples were crushed, although 1 or 2gms. can suffice. Generally 0.5gms. from the fraction above 0.2mm. received detailed examination, the fraction being mixed and halved until the 0.5gms. were obtained. By commencing with 5gms. and whittling down to 0.5gms. a larger and more representative proportion of inclusions could be studied than with a thin section.

Tables and pie charts. All identifications, irrespective of size or shape, received single counts. Tables II and III record the relative percentages of inclusions within individual sherds and segments on pie charts note this visually. They do not represent percentages relative to pot matrix. Percentages of inclusions, mentioned in the text, similarly indicate inclusions proportional to each other and not to matrix. The number of inclusions counted in a sample is written in the centre of each pie chart. Underneath it is the weight of the sample, generally 0.5gm. Higher counts tend to indicate finer inclusions, because more can be contained per unit weight. Sherds from fabric 2a, for example, had larger shell inclusions and lower counts than those of fabric 2b with finer shell. Where inclusions were very small the 0.5gms. contained inclusions too numerous to count. Instead a few hundred were counted from a reduced sample (e.g. vessels 39 and 40). A smaller sample was also taken from vessel 37 in which the shell was exceptionally fine and sparse. 0.5gms. again would have produced too many inclusions. It further required crushing of an undesirably large sample in order to extract this quantity. With vessels 34 and 69 inclusions could not be satisfactorily broken away from the matrix. 0.5gm. samples were taken and the inclusions counted as accurately as possible. These are noted on the pie charts and tables as estimates.

Types of inclusion. The types of temper most commonly tabulated were vegetation, crushed flint (usually from calcined pot boilers), grog (specially ground down fired ware), and shell. Fossil shell additionally occurred as a natural inclusion and was useful in differentiating fabrics and clay sources. The binocular microscope proved surprisingly good at detecting, in a coarsely crushed matrix, vegetable and seed impressions. Mr. Arthur has identified some of these impressions (see p. 273). Basic clay minerals (quartz, other forms of silica, mica, carbonates and iron oxides) were tabulated together with certain accessory minerals (e.g. tourmaline and kyanite). Specific mineral identifications obviously relate to fired, rather than raw clay. Iron minerals in pottery occur in a variety of oxidised states. Where possible they have been listed specifically but in the pie charts they are amalgamated in a single sector labelled 'iron oxides.'

¹ S. D. Hamilton, 1976, op. cit., p. 3.

TABLE II

Crushed sherds: Percentage relationship of the inclusions more than 0.2mm. in fabrics 1, 2a, 2b, 4 and 5

FABRIC	1	2a	2a	2a	2a	2b	2b	2b	4	5	5
VESSEL No.	**16	42	80	34	55	43	61	56	37	69	74
Inclusions	%	%	%	%	%	%	%	%	%	%	%
Limestone	—	—	—	—	—	3.03	—	—	—	—	—
Chalk	—	11.76	3.45	—	8.00	—	—	0.95	1.45	—	—
Calcite	—	—	—	—	—	—	—	4.75	—	—	—
Shell	—	75.88	79.30	50.72	60.67	79.80	65.00	50.63	82.60	—	4.83
Flint	17.45	—	—	—	—	—	0.91	—	—	—	—
Calcined Flint	35.57	0.59	—	8.99	—	—	—	—	—	0.79	3.32
Quartz—rounded	11.41	6.47	8.05	13.67	6.67	3.54	18.18	35.13	8.70	—	—
Quartz—angular	—	—	—	—	—	—	—	—	—	9.45	8.18
Silt in Silica	4.70	—	—	—	—	0.50	—	—	—	—	—
Silt in Iron Oxide	3.35	—	—	—	—	—	—	—	—	—	—
Haematite	—	1.76	—	—	—	3.54	2.73	0.95	1.45	14.96	—
Magnetite	4.70	—	—	—	—	—	—	—	—		4.87
Grog	—	—	—	1.44	—	—	—	—	—	48.82	4.83
Siltstone	—	—	—	—	—	—	—	—	—	15.75	53.53
Charcoal	18.79	3.54	6.90	20.50	7.33	4.54	—	1.26	—	4.72	11.52
Veg. impressions	—	—	—	—	11.33	—	9.09	2.53	—	—	—
Muscovite	—	—	2.30	4.32	6.00	3.03	4.09	3.80	5.80	5.51	8.92
Biotite	4.03	—	—	—	—	—	—	—	—	—	—
Glauconite	—	—	—	—	—	2.02	—	—	—	—	—
Kyanite	—	—	—	0.36	—	—	—	—	—	—	—
No. Grains	149	170	174	278	150	198	220	316	69	127	269
Sample Wt. (in grams)	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.001	estimate	0.16

**Vessel No. 16 is illustrated in Figure 22, in the Bronze Age pottery section

Size and shape of inclusions. Properties of size and shape furnished further information concerning the nature and source of inclusions. Inclusions were measured along their longest axis and shapes designated angular, rounded or irregular by visual estimation. A standardised terminology was desirable for describing size parameters and for this, Shepard¹ suggested the Wentworth scale. This is used by sedimentary petrologists and is an obvious choice for sedimentary inclusions but it is less suited for temper. What was, for instance, considered "fine" shell became "coarse" when classified as a natural sediment. Natural inclusions are therefore recorded according to the Wentworth scale,² while specific measurements are given for temper.

Thin sections. In conjunction with detailed analysis of crushed sherds 10 thin sections were made. Miss C. Cartwright made and analysed a further three.³ Thin section provided a comparative technique which particularly concentrated on fabric 5, a fabric more difficult to crush. Precepts were again quantification of the size and number of inclusions, together with estimation of their shape. This was a supplementary analysis and not a major study. Thin section here proved less useful, and more laborious than crushing. A very few experiments, using thin section, differentiate homogeneous sandy wares.⁴ The method was impracticable for the

¹ A. O. Shepard, *Ceramics for the archaeologist*, 5th. edn. (1974), p. 118.

² W. C. Krumbein and F. J. Pettijohn, *Manual of sedimentary petrography* (1938), p. 30.

³ See report by Caroline Cartwright and A. J. Woods, p. 118.

⁴ I. Hodder, 'The distribution of Savernake Ware,' *Wilts. Arch. and Natural History Magazine*, forthcoming; D. P. S. Peacock, 'Petrography of certain coarse pottery,' in B. W. Cunliffe, *Excavations at Fishbourne*, vol. 2 (1971), pp. 255-259; and I. Hodder, 'The distribution of two types of Romano-British coarse pottery in the West Sussex region,' *S.A.C.*, vol. 112 (1974), pp. 86-96.

TABLE III

Crushed sherds: Percentage relationship of the inclusions more than 0.2mm. in fabrics 3a, 3b, 3c and 3d

FABRIC	3a	3a	3a	3b	3b	3b	3c?	3c?	3c	3d
VESSEL No.	52	47	8	34	39	40	45	38	32	28
Inclusions	%	%	%	%	%	%	%	%	%	%
Chalk	1.49	14.38	11.86	—	—	1.14	5.78	1.19	—	—
Calcite	—	—	—	—	—	—	—	—	2.67	—
Shell	39.20	40.52	33.05	—	0.17	—	—	—	—	—
Flint	1.74	—	5.08	—	—	—	44.04	85.52	—	—
Calcined Flint	—	—	—	39.63	—	—	—	—	—	—
Quartz—rounded	53.35	32.68	39.00	6.90	3.57	39.02	—	—	42.70	60.18
Quartz—angular	—	—	—	—	—	—	10.83	7.14	10.85	—
Silt in Silica	—	—	—	—	—	0.49	—	—	—	—
Silica	—	—	—	—	—	—	—	—	0.53	—
Haematite	1.99	0.65	—	46.00	0.73	—	—	—	2.49	—
Limonite	—	—	—		92.50	—	—	—	—	11.59
Magnetite	—	—	—	—	1.96	58.54	27.80	—	33.99	25.75
Grog	0.25	—	—	—	—	—	1.44	—	—	—
Charcoal	0.99	3.92	2.54	1.72	—	—	4.69	1.19	—	0.34
Muscovite	0.99	7.19	8.47	5.75	1.07	0.81	5.42	4.96	4.63	1.13
Glauconite	—	—	—	—	—	—	—	—	—	1.01
Garnet	—	0.33	—	—	—	—	—	—	—	—
Tourmaline	—	0.33	—	—	—	—	—	—	0.71	—
Zircon	—	—	—	—	—	—	—	—	1.96	—
No. Grains	403	306	118	174	560	615	277	504	562	889
Sample Wt. (in grams)	0.50	0.50	0.50	estimate	0.007	0.008	0.50	0.50	0.15	0.02

present analysis where the two-dimensional aspect of thin section made it difficult to presume the real size, shape, and distribution of tabular and irregular inclusions.

Due to the time factor, and because thin sections constituted a subsidiary analysis, inclusions were quantified as follows. For each section two spot counts of major inclusions over 0.2mm. were made. Each spot encompassed one square centimetre and together accounted for about three-quarters of a section's surface area. The counts are low and therefore less accurate (see Table IV). Pie charts marked T.S. denote quantification based only upon thin section.

TABLE IV

Thin sections: Percentage relationship of the inclusions more than 0.2mm.

FABRIC	2a	2b	3a	5	5	5	5	5	5	5
VESSEL No.	80	53	47	69	74	82	84	71	67	62
Inclusions	%	%	%	%	%	%	%	%	%	%
Limestone	—	—	—	—	—	—	—	—	2.22	—
Shell	82.76	52.63	42.62	—	—	—	—	—	—	—
Quartz	11.49	28.94	50.82	24.44	12.06	23.91	18.75	11.76	20.00	25.53
Sand in Silica	2.30	—	—	—	—	—	—	—	—	—
Iron Oxides	—	13.16	—	33.33	34.49	32.61	28.12	31.37	35.56	42.55
Charcoal	—	—	4.92	—	—	—	—	7.84	—	—
Burnt out veg.	—	3.95	—	6.67	8.62	13.04	4.69	—	—	8.52
Grog	—	1.32	1.64	15.56	3.45	21.74	37.50	43.15	—	—
Siltstone	3.45	—	—	20.00	41.38	8.70	10.94	5.88	42.22	23.40
No. Grains,	85	76	61	45	58	46	64	51	45	47

Counts based on two 10mm² spot samples.

3 sherds analysed by C. Cartwright, not included.

Establishing fabric categories. The analytical work described was neither concerned with the minutiae of different portions, nor the precise identity of individual samples. A difference of

10 grains or 10% was not alone grounds for separating categories. The fabric categories which emerged each contained a characteristic group of inclusions, in broadly consistent quantities and with typical size parameters. Counts and measurements merely enabled trustworthy, tangible definition of these groups. Divisions were basic, wares being predominantly flinty, shelly, sandy or grog tempered. In this they are distinct and have little overlap.

Fabric assessment of the whole assemblage. This used the groupings already isolated in detailed analysis. A glance at a crushed sherd under the binocular microscope was enough to confirm its fabric grouping. Freshly fractured edges were likewise studied, using oblique lighting and low magnification.

Fabric categories were usually distinct and the entire Iron Age pottery assemblage of 20,984 sherds was readily grouped by eye with the aid of a X10 lens. This analysis facilitated the calculation of the percentage occurrence of each of the pottery fabrics in the five distinct chronological contexts in the Iron Age settlement. The results are given in Table Va. Whilst the assemblage was being typed in this way it became possible to embellish the original laboratory analysis because interesting fossil and mineral inclusions could be selected for subsequent examination. Attention was also paid to daub, briquetage and other fired clay objects which were frequently made in the same fabrics.

TABLE Va

	1	2a	2b	3a	3b	3c	3d	4	5	Pre-I.A.	Post I.A.	Total Sherds	% of Total
Pre-enclosure	3.14	67.92	—	5.66	3.14	10.06	—	4.40	2.51	2.51	0.62	159	0.75
Enclosure Ditch below Layer 1	3.45	64.22	—	17.24	6.13	3.65	0.04	2.60	0.93	1.05	0.63	4,076	19.42
Enclosure Ditch, Layer 1	0.72	71.08	—	5.15	15.33	4.73	0.28	0.10	2.05	0.30	0.20	14,307	68.18
Early Settlement	3.94	57.38	—	12.66	8.55	8.72	—	4.19	1	3.27	0.25	1,192	5.68
Late Settlement	1.84	22.16	9.68	11.44	2	3.68	—	2.32	45.92	0.08	0.88	1,250	5.95
Total	320	13857	121	1743	2576	993	43	207	922	131	71	20,984	
% of Total	1.52	66.03	0.57	8.30	12.27	4.73	0.20	0.98	4.39	0.62	0.33		99.90

Table Va The percentage occurrence of pottery fabrics in each of the five distinct chronological contexts in the Iron Age settlement. The percentages were calculated on the basis of the total number of sherds from each chronological context.

FABRIC GROUPS

Samples are numbered according to the vessel that they were taken from. Sampled vessels appear in the figures together with their appropriate pie charts.

FABRIC 1. *Ware with coarse flint temper*

Fabric 1 rarely occurs in Iron Age features. It represents 2% of the Iron Age assemblage and is apparently residual Bronze Age. Wares in fabric 1 found in Iron Age features are illustrated and discussed in the Bronze Age pottery section, together with the *in situ* Bronze Age pottery. Sherds are invariably thick walled, measuring 1cm. and more. They often have purple-red exteriors and always dark cores. Two subtypes of the fabric have been recognised, namely 1a and 1b. Type 1b has a sparser flint filler and is generally better fired than 1a. Vessel No. 16, Fig. 22 is of type 1a and has received detailed analysis. It contains large grits of calcined flint temper measuring up to 4mm. across and forming a noticeable percentage of inclusions (36%). The presence of charcoal indicates a 17% vegetable temper. The matrix incorporates natural inclusions of fine rounded quartz, sometimes iron stained (11%), silt grade quartz in

silica (5%) and fine patinated flint (17%). Magnetite, biotite and silt in iron oxide were also noted.

FABRIC 2a. *Friable ware with large quantities of shell*

Fabric 2a is a major component of the ditch assemblage (58%), but occurs much less commonly in later features. Samples 42, 55 and 80 typify the fabric. This fabric is poorly consolidated and friable.

Shell can represent over 70% of inclusions. Shell fragments measure between 2 and 5mm. These comprise quantities of fossil shell, apparently natural to the clay, together with some marine and estuarine shell, crushed as temper. Of the latter, oyster and mussel feature but cannot be identified specifically. Of the shells that can be identified, nearly all are Eocene fossils (Plate XXI). Gastropods (often whole) and aggregates of bivalve shells include the species *Brotia melanoides*, *Tympanotonos funatus*, *Ostrea bellovacina* and *Corbicula* cf. *cordata* or *cuneiformis*. These fossil identifications were later confirmed by specialist examination (see page 118-124 for these and other fossil shell identifications). The exact ratio of fossil to non-fossil shell was not ascertained. Often the shell is fragmented beyond distinction. Chalk and vegetable matter occur as secondary fillers together accounting for 10-15% of the inclusions. In thin section the shell temper remains detached rather than consolidated with the matrix. This apart, the fabric is not unduly vesicular. The latter is here indicative of a low firing temperature in which vegetable matter was charred rather than burnt out. Of the natural inclusions, quartz plays a subsidiary role (8%) and the presence of iron oxides is minor. Silt grade quartz is not generally apparent in the sievings.

The majority of the ware is coloured soot black to grey but in exceptional instances the fabric is burnished. Sample 35 comes from a burnished vessel. The shell is finer (1-3mm.) and less abundant (50%). The shell is fine grained as if fossil. A 9% inclusion of very calcined flint was indistinguishable from the shell and was not recognized prior to analysis.

Briquetage was apparently modelled in a fabric similar to 2a. It likewise contains Eocene fossils. Pieces of lignite measuring 1 to 3cm. also feature.

FABRIC 2b. *Better fired ware with fine shell*

Samples 53, 56 and 61 are of a fabric which is principally associated with a single storage pit, Feature 790. It has been rarely recognised elsewhere. Both in section and externally the fabric is coloured pale orange. It is normally lightly burnished and harder than fabric 2a. The vegetable temper has mostly burnt out, leaving only impressions. It is less shelly (50-60% of inclusions) and the shell is finer (1-3mm.). More sand features (20% of inclusions). The quartz is disaggregated and sub-rounded, measuring up to 1mm. Amongst the fine shell larger pieces of fossil gastropod and lamellibranch aggregate sometimes feature. All the shell is likely to be fossil, all being finer textured than that recognised as deliberate filler in fabric 2a. Fossils were again identified as Eocene and are identical to those listed for fabric 2a. Additionally, rhomboid calcite crystals are sometimes present with the shell. Vesicles in the clay matrix are perhaps partly due to weathering out of carbonates. Small pieces of lignite were occasionally noted.

Vessel 43 is of similar fabric to 2b but is unburnished and more friable. Several shell fragments are enclosed by limestone, and there are also pieces of "free" limestone. Another sherd, similar in fabric to 2b, contained a large gastropod and four small ones which collectively appear to be freshwater and not Eocene.

FABRIC 3a. *Unburnished sandy ware*

3a is normally shell tempered, the shell appearing to be marine and estuarine. The ware can alternatively occur with calcined flint grits. The latter are rare, and associated with thick walled vessels. It is exceptional to find the ware untempered. Finishing is better and firing harder than 2a. Exterior surfaces are oxidised buff and orange. Protruding inclusions have been smoothed into the surface. Vessels 8, 47 and 52 received detailed analysis. The shell temper is fine (1mm.) and sparser (40% of inclusions) than characterises fabrics 2a and b. Sand represents as much as 50% of inclusions, the grains being near spherical and consistently of medium sand grade. Many grains are highly polished and clear, some are iron stained, and a very few milky. A few grains of polished garnet and triangular specks of tourmaline have been recognised. Samples 8 and 52 contained patinated flint, also medium sand grade. Silt grade quartz has not been recognised in the sievings. Vegetable temper has been carbonised, but not burnt out.

FABRICS 3b and 3c. *Burnished wares with sand and iron oxide inclusions*

Fabric 3b is visually characterised by evenly burnished, leather-brown colour surfaces. It is predominantly untempered but sometimes contains a little shell or calcined flint. The ware has a grainy texture and, although medium hard fired, is liable to break. Analysis of vessels 39 and 40 indicated that the matrix is dominated by large proportions (up to 90%) of iron oxides in pisolith form (mineral grain form). Associated with the oxides are small sub-rounded quartz fragments, many of which are cracked and have ferruginous coatings. Notably in sample 40, the quartz is exclusively medium sand grade, measuring about 3mm. Number 39 was thin sectioned. Its clay matrix appeared very fine. Vessel 34 is thinner walled than vessels 39 and 40, and harder fired. Iron oxides are again predominant but have become incorporated with the clay matrix.

Fabric 3c appears grey or black, both externally and in section. The sandy matrix is bespeckled with iron oxide grains. Exterior and interior surfaces are burnished black, and, when eroded, are liable to flake away from the main fabric body. Vessel 32 was analysed as typical. Quartz sand accounts for 50% of the inclusions and pisolith iron oxide for 30%. Most of the quartz exists as irregular sub-rounded grains but 10% is sharply fractured and possibly indicates crushed filler. Both types of quartz are disaggregated and generally vary in size from 0.2 to 0.6mm. Some grains are as large as 1mm. Quartz also appears in the sievings. Zircon (colourless with well marked crystal facets), tourmaline, silicified limonite and calcite make accessory appearances.

Vessels 38 and 45 were black burnished, but in analysis appeared different from the above. Whereas the inclusions in fabric 3c were disaggregated and indicative of *in situ* weathered clay, these had a silty matrix and contained water worn inclusions. The quartz was polished and medium sand grade. Flint chippings were medium sand grade and similarly polished. Iron oxides were less predominant.

FABRIC 3d. *Very sandy ware*

This category is almost solely represented by excessively sandy Vessel 28, the surface of which is leather brown and very eroded. Possibly it was originally lightly burnished. Inclusions over 0.2mm. comprised quartz sand (60%) and iron oxide grains (35%). The quartz grains are sub-angular, irregularly shaped and disaggregated (fine to coarse sand grade).

FABRIC 4. *Fine wares*

This is not a coherent group of wares. The classification embraces thin walled, fine textured wares which defy general classification. Matrices are usually homogeneous and composed of fine sand or silt. Such pieces represent only 2% of the assemblage.

Vessel 37, a thin walled, burnished, situla vessel, was classed as a fine ware. Very fine (under 0.5mm.) sparse oyster shell represented 80% of the inclusions and is probably natural to the clay. The matrix was silty.

FABRIC 5. *A hard soapy ware*

In later features fabric 5 almost totally comprises the assemblage.¹ The fabric has a distinctive soapy feel and is harder fired than the others. The hardest fired pieces are brittle. Occasional pitted surfaces perhaps resulted from the combustion of organic particles or the slaking of carbonates.

External colour is frequently dark grey or soot black. The larger harder fired vessels often have been partially, or wholly oxidised to orange. In thin section the fabric, though not homogeneous, is closer textured than fabrics 1-4. Some difficulty was experienced in crushing the sherds. No. 69 was first boiled for several hours which helped marginally. No. 74 was immersed in a 10% solution of hydrochloric acid for 24 hours, crushed and then immersed again for a further period. This proved more effective. Boiling in hydrogen peroxide was tried, on other sherds, with some success.

The fabric exhibits a consistent set of inclusions, though these may vary in their relative proportions and size. Grog temper and siltstone are invariably present, the grog occurring as angular pieces measuring 1-3mm. across. It is generally untempered and is similar in texture to the actual clay matrix. Pieces of sub-rounded siltstone, up to 2mm. across, occur frequently. They appear to be a natural inclusion. Where there is a higher proportion of siltstone there is less grog and *vice versa*. Together they can represent over 50% of the inclusions.

There is a fluctuating presence of disseminated iron. Being powdery or combined with clay matrix this barely registers statistically when crushed. Only mineral grains of iron were satisfactorily counted in crushed samples. Thin sectioning revealed rounded lumps of soft iron ore measuring up to 3mm. Many pieces had partly disintegrated and streaked. These may have disintegrated during the clay preparation and forming of vessels.

Fine angular quartz is scattered throughout the matrix. Flakelets of mica (0.1-0.3mm.) occur rarely.

Vegetable temper has occasionally been included but has been burnt out in firing. In thin section this appears as vesicles thinly fringed by charcoal. Clay matrices appear however to be anisotropic, indicating that the firing temperature remained below 850°C.

INTERPRETATION OF ANALYSIS

This section concentrates upon clay sources and provenance of fabric. In each case the nearest likely source is cited, but not advocated. The sedimentology of many of these sources lacks comprehensive analysis. Conclusions could not therefore be checked in detail by reference to published work. In the absence of this, the value of field survey and the collection

¹ Similar wares continued to be produced into the Romano-British period and are discussed below by Mr. Green under the title 'East Sussex Ware,' p. 154.

of hand specimens is noted. Field surveys have been carried out in association with excavation. They were, however, biased towards the collection of geological specimens, rather than raw clay.

LOCAL CLAYS

Clay resources are limited in Bishopstone's immediate chalkland environment (see Fig. 55). Nearly all potting clay must have been brought to the site whether from near or far. A deposit of Clay-with-Flints exists on the promontory, near Stud Farm, but this would have been too thin for extensive exploitation. Thicker deposits, over a metre deep, occur two km. to the south-east behind Seaford, and further east again on South Hill. Smaller quantities exist in the vicinity of Newhaven. The estuarine flats would have provided rather inadequate clay. Three or four km. inland, up the Ouse Valley, river clays are coarser and more usable, as is indicated by brickworks at Piddinghoe and Lewes. More useful however is a small area of Eocene clay, the Woolwich and Reading Beds, which outcrops two km. to the west across the Ouse at Castle Hill, Newhaven and, before cliff erosion, also outcropped to the east at Seaford. Former brickworks on Castle Hill and at Seaford indicate the viability of this Eocene clay.

Undoubtedly, large quantities of pottery were made on or near the site. The presence of daub, half baked clay objects and a deposit of clay (probably Eocene), confirmed that raw clay was being brought to the site and stored there. Bonfire firing was probably taking place in the top of the ditch where excessive quantities of broken and charred 2a fabric sherds were found. These were associated with quantities of burnt briquetage, and half baked clay. Many of the broken sherds may represent wasters although it would be difficult to recognise definitely the wasters of a coarse fabric such as 2a.

Fabrics 2a and 3a incorporate shell from the local estuarine flats and shoreline. More important, however, is the presence of Eocene fossils and lignite in fabrics 2a and 2b, daub, and briquetage. These inclusions correspond well with those which characterise the Woolwich and Reading Beds at Newhaven. Eocene strata thus appear to have been a prime source of local clay. This source was, no doubt, similarly important to other Upper Chalk sites. Its later use in Roman times is noted at Newhaven¹ and further west at West Blatchington Roman villa.²

It is interesting that although fabrics 2a and 2b can both be ascribed to Eocene clay, and are likely to come from the same source, they are somewhat different. The distinction is visual, stylistic and, to some extent, compositional. A small amount of carbonate present in fabric 2b but not noted in fabric 2a, suggests that the two fabrics could represent exploitation of different strata within the Newhaven Woolwich Beds. Fabric 2b may alternatively have come from a different exposure, for example the Woolwich and Reading Beds at Shoreham.

Local alluvial deposits and Clay-with-Flints provide lesser potting clays. Fabric 1 is best identified with the latter. The exposed upper layers of these deposits would have been too plastic for untempered use. The combination of patinated flint and calcined flint temper in sample 16, Fig. 22, is indicative of this. Samples of Newhaven Clay-with-Flints³ compare well with the natural inclusions studied in fabric 1. Clay-with-Flints has been cited in other context as a plausible clay source for coarse wares.⁴

¹ M. G. Bell, 1976, *op. cit.*, p. 298.

² N. E. Norris and G. P. Burstow, 'A prehistoric and Romano-British site at West Blatchington, Hove,' *S.A.C.*, vol. 89 (1950), pp. 1-56.

³ M. G. Bell, *Sediment analysis and periglacial landforms as evidence of the environment of Southern England during the last glaciation* (unpublished B.Sc.

dissertation for Institute of Archaeology, London, 1975), pp. 15-19.

⁴ I. W. Cornwall and H. W. M. Hodges, 'Thin sections of British Neolithic pottery, Windmill Hill—a test site,' *Bulletin of Inst. of Archaeology*, No. 4 (1964), pp. 29-33.

The estuarine silts, with their fine texture and scattered shell fragments, were wisely rarely exploited. Sample 37 was tentatively attributed to this source.

Analysed 3a wares apparently belong to middle coarse alluvial deposits. The lack of fine grade quartz and the predominant occurrence of polished medium grade sand, of diverse origin, is indicative of a slow moving but not estuarine river. Brickworks exploiting argillaceous alluvial flats have already been noted inland from the Ouse estuary.

CLAY FROM SOURCES FURTHER INLAND

Passing inland from Bishopstone and the Chalk escarpment successive Wealden strata are exposed.¹ These exposures offer a variety of clays and geological materials for exploitation.

Weald Clay. Freshwater gastropods from one sherd, and possibly the limestone fragments in Vessel 43, indicate that a small component of the shelly wares may comprise non-Eocene clay. Possibly these few pots are derived from a clay incorporating former freshwater, now fossil, shelly limestones. Of possible Sussex sources, Purbeck Marble is limited to three outliers and Wadhurst Clay contains only thin shell beds. Weald Clay however has extensive shell beds and may be an apt source.

The nearest outcrop of Weald Clay to Bishopstone is about thirteen km. inland. No fossils found in daub or clay can definitely be recognised as Wealden. The pots rather than the clay appear to have been brought to the site.

Hastings Beds. Fabrics 3b, 3c and 3d were all distinguished by a substantial presence of iron oxide mineral grains, indicating a highly ferruginous source. Quantities of quartz sand in 3c and 3d suggest specifically a sandy iron bearing strata. Oxide grains, though relatively fresh, have the lustre of weathered products. Greensand contains grains of glauconite which weather to limonite² but it is unlikely that the strata would thus become sufficiently ferruginous. Weald Clay is also excluded as a source; it contains occasional veins of sand associated with iron ore, but these are thin. Wares already ascribed to Weald Clay contain relatively few iron oxides. Fabrics 3b, 3c and 3d are best associated with the Hastings Beds, though probably to different sources therein.

The Hastings Beds (comprising Fairlight Clay, Ashdown Sand, Wadhurst Clay and Tunbridge Wells Sand) are characterised by fine grained sediments and throughout contain horizons of concretionary iron ores. The iron minerals of the analysed samples will have undergone firing changes of oxidation and hydration. Generally, however, they remain distinguished by their pisolith form. Possibly some of these grains are spherulitic (oxides which have formed around organic nuclei). The Fairlight Clays, situated between Bexhill and Hastings, are unusually crowded with sphaerosiderite iron carbonate pellets.³ Its Wealden occurrence is however not restricted to these clays.

A High Wealden origin is tentatively suggested for fabric 3b. The sand is too fine for a deliberate filler and shows signs of river grading. The quantity of iron and its grain size (0.4mm.) suggest middle and upstream deposits. Straker's list of Wealden valley iron working sites gives a good indication of major exposures of ferruginous strata.⁴ The richest are on Wadhurst Clay

¹ R. W. Gallois, 'The Wealden district,' *British Regional Geology* (1965), Plate I.

² R. W. Gallois, 1965, op. cit., p. 30.

³ H. J. White, 'The geology of the country near Hastings and Dungeness,' *Memoirs of the Geological Survey, England* (1928), p. 19.

⁴ E. Straker, *Wealden iron* (1969).

and follow the Forest Ridge eastward and westward from Horsham. The spathic ore is overlain by a very plastic clay which is highly suitable for pottery manufacture.¹

Quartz sand is frequent in 3c and excessively so in 3d. The sand is naturally disaggregated rather than water worn. It may have been added as a filler but this could not be determined in analysis. Alternatively, a very arenaceous source was exploited. Tunbridge Wells Sands contain suitably loamy sand and soft argillaceous sandstone. Fairlight Clays are less sandy but contain lenses of sand. Where sand and argillaceous strata erode out together, they can be combined, either deliberately or naturally, to form sandy potting clay. A small quantity of crushed quartz in vessel 32 is unassociated with rock fragments and must have come from clean sand. This was either crushed deliberately as a filler or may have been crushed during preparation of clay which naturally contained sand.

The nearest out-crop of the Hastings Beds is 17 km. from Bishopstone, while pots or clays of a High Wealden origin would have come from about 20 km. away.

FABRIC 5

Fabric 5 is particularly differentiated by its higher firing temperature. It contains quantities of disseminated iron minerals which could indicate a clay incorporating the limonitic concretions of the Newhaven Eocene Beds. It is, however, difficult to explain why such iron was not obviously apparent in wares definitely attributed to Eocene sources. Siltstone, although prevalent throughout the Weald, has only been isolated in quantity in fabric 5. It is hard to assess the role of firing temperature in differentiating the inclusions of fabric 5 from those of other fabrics.

Fabric 5 appears late in the Bishopstone Iron Age assemblage and accounts for a large proportion of the wares thereafter. More so than other wares, it is associated with a consistent range of vessels including "South Eastern B" storage vessels² and a range of cooking vessels. These Cunliffe terms "Eastern Atrebatian Wares."³ At Bishopstone the fabric continues into the Roman period⁴ and is similar to a large number of first and second century native wares found across the Ouse at Newhaven.⁵ The ware seems to have been a staple type during the later Iron Age, particularly in East Sussex.⁶ Its preponderant occurrence and distinctive soapy feel have long been referred to. It has been presumed a domestic ware. The consistent appearance of the fabric at a series of sites could conceivably indicate trading. It is not impossible that it was made and distributed from a limited number of settlements. Quantities were found at Horsted Keynes under conditions which strongly suggest a neighbouring kiln.⁷

In the analysed Bishopstone samples the grog inclusion is of the same fabric as the pottery it tempers. Possibly this indicates an organised production procedure in which wasters from one firing were ground down to become the fillers of the next. It is noticeable that none of the grog belonged to any of the other fabric groupings. This could argue against on site manufacture. There must have been large numbers of broken sherds, particularly of 2a fabric, lying around the site, and one might expect them to have been variously used if grog was required.

¹ H. Cleere, *Romano-British industrial site at Bardown, Wadhurst, 1960-1968* (1970), p. 2.

² A. E. Wilson and G. P. Burstow, 'The evolution of Sussex Iron Age pottery,' *S.A.C.*, vol. 87 (1948), pp. 77-111, where the type is described on p. 98.

³ B. Cunliffe, 1974, *op. cit.*, p. 92 and Fig. A.29, p. 344.

⁴ See discussion by Mr. Green under the title of 'East Sussex Ware,' p. 154.

⁵ C. M. Green, 'The coarse pottery' in M. G. Bell, 1976, *op. cit.*

⁶ C. M. Green, in P. Drewett et al., 'A burial mound at Alfriston,' *P.P.S.*, vol. 41 (1975), p. 135.

⁷ H. R. Hardy, 'An Iron Age pottery site near Horsted Keynes,' *S.A.C.*, vol. 78 (1937), pp. 252-65.

In addition to clay and whole pots, a variety of geological material was brought to Bishopstone. Eocene material again predominates but the potential of different geological strata was clearly known. Together with sources forwarded for clay, a pattern of exploitation and trading is indicated, extending at least 30km. from the site.

QUANTIFICATION

The whole Iron Age assemblage was enumerated according to the fabric groups already defined. Sherd weights and counts were adopted as standards for expressing the number and relative percentages of sherds of different fabrics.¹

Each standard portrays the information rather differently and both are liable to some inaccuracy. Fragmentation, and therefore count, varies with fabric and circumstance. With weight, one difficulty is that a few heavily gritted wares could outweigh many fine ones. Combined use of weight and count therefore partially cross-checks error. By quantifying within the parameters of fabric these sources of variation were further isolated.

TABLES

Table Va. This outlines the percentage occurrence of each of the Iron Age fabric types in features of that period and also gives the percentage of material considered indicative of pre- and post-Iron Age occupation. The features have been divided into five groups representing chronological phases in the life of the settlement.

Tables Vb-VII deal with a sample of 10,000 sherds, including all the main features and major parts of the ditch. The latter is tabulated separately from the features thus isolating the bias that it exerts with its large quantities of early material.

Table Vb. This indicates the proportional presence of each fabric type and gives quantitative confirmation of observed differences in sherd fragmentation. For the ditch, relative percentages

TABLE Vb

Fabrics in the ditch and features: Totals and percentages, both by weight and number, together with average weights per sherd in each fabric

DITCH	1	2a	2b	3a	3b	3c	3d	4	5	TOTAL
Wt.	2240	33840	—	10003	6537	3375	770	655	1100	58520
% Wt.	3.83	57.82	—	17.09	11.17	5.77	1.32	1.12	1.88	100%
No.	199	4884	—	1538	1441	545	41	105	152	8905
% No.	2.23	54.85	—	17.27	16.18	6.12	0.46	1.18	1.71	100%
Wt/sh*	11.26	6.93	—	6.50	4.54	6.19	18.78	6.24	7.24	—
FEATURES	1	2a	2b	3a	3b	3c	3d	4	5	TOTAL
Wt.	301	4625	2640	1175	1499	536	20	485	10324	21605
% Wt.	1.39	21.41	12.22	5.44	6.94	2.48	0.09	2.24	47.79	100%
No.	26	658	80	119	100	68	2	34	399	1486
% No.	1.75	44.28	8.39	8.01	6.73	4.58	0.13	2.28	26.85	100%
Wt/sh*	11.58	7.03	33.00	9.87	14.99	7.88	10.00	14.26	25.87	—

Average weight per sherd

¹ Approach discussed by: J. D. Evans, 'Sherd weights and sherd counts,' in D. E. Strong (ed.) *Archaeological theory and practice* (1973), pp. 131-149; and W. G. Solheim, 'The use of sherd weights and counts in the handling of archaeological data,' *Current Anthropology*, vol. 1 (1960), pp. 325-329.

TABLE VI
Ditch: Occurrence of various traits of form and decoration, in each fabric group

FABRIC		1	2a	3a	3b	3c	4	5	3d
TOTAL NUMBER OF SHERDS		199	4884	1538	1441	545	105	152	41
TRAITS									
Straight sided	Collared	1	—	—	—	—	—	—	—
	Grooved/finger dabbled	3	2	—	—	—	—	—	—
	Thick T-shaped rim	4	1	13	—	—	—	—	—
	Thumb impressed rim	2	19	1	—	—	—	—	—
	Plain rim	1	51	47	6	6	2	—	1
Bowls	Flat base	5	55	30	12	—	—	1	1
	Slightly everted base	—	27	4	—	—	—	—	—
	Plain rim	—	96	37	—	—	—	—	—
	Thumb impressed rim	1	19	16	—	—	—	—	—
	Situla	—	—	—	—	—	1	—	—
	Globular vessel	—	3	—	2	2	—	—	—
	Bead rim	—	—	—	—	2	—	1	—
	'Saucepan' pot	—	—	—	—	7	—	3	—
	Everted base	—	—	3	5	4	—	2	—
	Round shoulder	—	8	8	2	2	—	—	—
Everted rim	1	14	11	13	3	2	3	—	
Others	Shouldered vessel	—	1	—	1	2	4	1	—
	Pedestal base	—	—	1	12	3	—	—	—
	Low pedestal or foot-ring base	—	1	6	17	1	4	—	—
	Open bowl—bead rimmed	—	—	—	—	4	—	—	—
	Slipped	—	—	—	—	—	4	—	—
	Incised/combed/stamped	—	—	—	—	—	1	1	—
	Others	—	—	—	lid	—	—	*cor	—

*single corrugated vessel

of fabrics, indicated by weight, correspond satisfactorily with those indicated by count. This correspondence is indicative that all sherds, irrespective of fabric, have been eroded to a consistent size. The average weight per sherd here becomes a reasonable index of the relative specific gravities of wares. Fabric 1 is thicker and this too contributes to its higher weight per sherd. Fabric 3d was exceptional for the ditch in being represented by a single vessel which had not experienced the same degree of fragmentation.

In the features, lower counts and higher weights per sherd correspond to better preserved vessels comprising larger pieces. The average weight per sherd, however, varies to a greater degree and reflects disparity in average sherd size for different fabrics. Fabric 5 has a notably higher weight per sherd. It is indicative of its higher firing temperature and greater durability. *Tables VI and VII.* Grouping by fabric enabled quantities of undiagnostic body sherds to be ascribed to individual vessels, these being represented by the diagnostic sherds within each fabric type. *Tables VI and VII* list the occurrence of diagnostic traits for each fabric category. The small number of rims and bases, relative to body sherds, suggests that vessels were fairly large and less numerous than might be surmised from body sherds alone. Pots associated with closed pit and posthole groups were much more complete. Since vessels within each group could be presumed contemporary, nearly all sherds could be assigned by fabric to specific vessels.

Individual traits are indicated by single counts. Where possible counts are minimised, thus joining rims are tabulated as one. The traits listed include single features of form (e.g. everted rim) and decoration, together with types (e.g. situla vessel). Types received single counts, their rims and bases, for instance, are not additionally accounted for in separate categories of form.

TABLE VII

Features: Occurrence of various traits of form and decoration in each fabric group

FABRIC		2a	2b	3a	3b	3c	4	5
TOTAL NUMBER OF SHERDS		658	80	119	100	68	34	399
TRAITS								
Straight sided	Thick T-shaped rim	—	—	2	—	—	—	—
	Thumb impressed rim	—	—	2	—	—	—	—
	Plain rim	7	—	—	1	—	—	—
	Flat base	3	2	—	1	—	—	5
Bowls	Plain rim	2	—	2	—	—	—	—
	Thumb impressed rim	—	—	2	—	—	—	—
	Situla	—	—	—	—	—	1	—
	Globular vessel	—	—	—	—	—	—	1
	Bead rim	2	—	—	—	2	—	—
	'Saucepan' pot	1	—	—	—	—	—	—
	Necked	—	4	—	—	—	—	—
	Everted base	—	1	—	—	—	—	22
	Round shoulder	1	3	—	1	—	—	4
	Everted rim	1	4	—	—	1	—	8
	Shouldered vessel	—	—	—	2	1	1	2
	Pedestal base	—	—	—	2	—	—	—
	Low pedestal or foot-ring base	—	—	—	—	1	—	1
	Necked bowl	—	—	—	—	—	—	3
	S.E. "B" Storage vessel	—	—	—	—	—	—	5
	Omphalos	—	—	—	—	—	—	2
	Incised/combed/stamped	—	—	—	—	—	—	6
	Others	—	—	butt beaker	lamp	—	—	*cor

*single corrugated vessel

The tables recreated the assemblage according to fabric as follows:—

Fabric 1. Thick-walled vessels, sometimes grooved and finger dabbled, having T-shaped rims, and flat bases. One vessel was collared. The fabric is rare, but more preponderant in the ditch. It probably represents a residual Bronze Age ware.

Fabric 2a. Straight sided vessels with flat bases and simple rims, sometimes finger impressed. Bowls with plain and thumb impressed rims. Occasional round shouldered vessels with everted rims.

Fabric 2b. This fabric is associated with a single storage pit. It comprises large, round shouldered, necked vessels.

Fabric 3a. The fabric has similar associations to 2a and is additionally associated with thick-walled vessels with T-shaped rims.

Fabric 3b. Shouldered vessels with everted rims and pedestal bases.

Fabric 3c. Globular vessels, 'Saucepan pots' (the type is described in Cunliffe¹ and Harding²) and open bowls.

Fabric 5. Eastern Atrebatian types,³ including South Eastern "B" storage vessels and necked bowls or jars.

The above generalises. The association of fabric and form is by no means exclusive.

¹ B. W. Cunliffe, 1974, op. cit., p. 42.

³ B. W. Cunliffe, 1974, op. cit., p. 89.

² D. W. Harding, *The Iron Age in lowland Britain* (1974), p. 196.

DISCUSSION

There is an often prevalent assumption that coarse wares are "primitive," and consequently earlier than fine wares. Fabric study at Bishopstone indicated that soft, coarse fabrics can be contemporary with fine wares. Moreover, forms associated with fine wares can occasionally occur in cruder wares. Vessel 35, for example, is a 'Saucepan pot' (designated in literature as a better finished, smooth, dark ware) in friable 2a fabric. Fabric 3b is associated with "earliest Iron Age" shapes (e.g. vessel 39) as well as supposedly "Marnian" high pedestal bases. Vessel 80 in Fig. 51 is a classic example of a vessel in apparently late "Bronze Age" tradition continuing through the Iron Age to be associated with Eastern Atrebatian types.

Fabric and style are perhaps less limited to particular periods than published reports would sometimes suggest. The selective publication of vessels rather than complete publication of closed groups may create a false impression. The selective approach favours whole vessels. Coarse vessels in association with fine wares may often be omitted because of their frequently fragmented and unspecialised nature.

IRON AGE POTTERY: DESCRIPTIONS

The aim of the present study has been to give accurate, tangible descriptions of vessels, rather than make assumptions about affinity. Neither Bishopstone, nor other excavated Sussex Iron Age sites, contain particularly extensive closed groups. Work at Bishopstone indicated that types associated in one closed context may be differently associated in another. It would be unwise to presume too much from possibly atypical groups.

Below are descriptions of the vessels illustrated in Figures 40-54. These descriptions merely note form and only aim to clarify the figures. The figures and text contain all the necessary information concerning fabric. The few included references to other sites allow vessels to be considered in a wider context, but direct affinities are not postulated. Indeed, fabric descriptions of published vessels were not alone tangible enough to permit complete comparison.

The illustrated figures have been arranged roughly chronologically, given that those dealing with closed groups form a central nucleus, with wares from less well stratified contexts placed either side of this. Figures 45 to 52 thus cover closed groups where the association of wares is irrefutable. These figures are distinguished by their lined borders. Feature 699 is associated with the pre-enclosure settlement and contained a situla vessel, No. 37, of the type formerly designated "Southern First A."¹ The enclosure ditch and the features of the enclosed settlement produced Cunliffe's "Ultimate Deverel Rimbury" forms,² together with tripartite bowls with angular shoulders and pedestal or foot-ring bases. The angular and pedestal forms reflect the *vases carenées* and *vases piriformes* of the continental La Tène cultures, and form part of the native regional pottery assemblage which Cunliffe terms the "Park Brow-Caesar's Camp group."³ For this he gives an inclusive fifth to third century date. Figs. 40-44 show the range of wares in the ditch. Because recutting of the ditch has confused the stratigraphic importance of the pottery therein, vessels here have been grouped according to fabric. This gives an idea of the range of forms encompassed by each fabric type. 'Saucepan' pottery is stratigraphically associated with the middle Iron Age, when settlement debris was cleared into the then redundant

¹ C. Hawkes, 'The ABC of the British Iron Age,' *Antiquity*, vol. 33 (1959), pp. 170-182.

² B. W. Cunliffe, 1974, *op. cit.* pp. 29-31.

³ B. W. Cunliffe, 1974, *op. cit.*, p. 38.

ditch. Fabric 5 is associated with Eastern Atrebatian traits (tooled eyebrow decoration, wide bellied, narrow necked, storage vessels and shouldered jars with everted rims) and dominates the later Iron Age features (e.g. Feature 920, Figs. 50, 51 and 52). Figure 53 concentrates upon decorated examples of fabric 5. Figure 54 is composite and shows selected vessels from a variety of features.

It has already been observed that the chronological succession of forms and fabrics is by no means exclusive. 'Earlier,' 'cruder' wares do sometimes occur in later features. There is, however, chronological significance in the different fabric types isolated (Table Va). Fabric 2a clearly predominates among pottery from the earlier settlement, both the pre-enclosure and enclosed phases. Fabrics 3a, 3b and 3c were also fairly important in the earlier settlement. The late settlement presents a quite different picture with the percentage of fabric 2a much diminished and replaced by fabric 5 which had increased from between 1% and 3% in the earlier period to 46%. The late settlement also saw the introduction of fabric 2b, the majority of examples of which came from Pit 790. Obviously some of the sherds in later features must be of residual origin, just as there are between 1% and 3% of Neolithic and Beaker sherds in Iron Age features. A few sherds may also be intrusive, like the less than 1% of post-Iron Age sherds, doubtless introduced by slumping and faunal activity.

DESCRIPTIONS

Vessels in Figures 40, 41 and 47 are apparently in the Late Bronze Age tradition of Cunliffe's "Ultimate Deverel Rimbury" type. Barrel forms and bowls are present. Rims are often decorated with finger tip and stick impressions. Many of the vessels, in fabric and form, resemble those at Plumpton Plain,¹ and thus emphasise that the dividing line between Bronze Age and Iron Age is by no means distinguished ceramically.

FIGURE 40. *Ditch, vessels in fabric 2a:*

Vessel	Ditch layer	Description
1	1	Barrel shaped vessel with flat base and plain rim with slight inturn. Many traces of horizontal and vertical smoothing.
2	1	Straight sided vessel with stick impressions along the rim, and traces of a finger impressed girth band. Thumbing (remaining from the original moulding of the vessel) appears on the interior surface. Somewhat similar vessels at Castle Hill, Newhaven. ²
3	3	Base with foot-ring, likely from barrel shaped vessel.
4	1	Finger impressed rim of bowl.
5	1	Finger impressed rim of straight sided vessel.
6	1	Vessel similar to Vessel 1 and having numerous grass impressions.

FIGURE 41. *Ditch, vessels in fabric 3a:*

Vessel	Ditch layer	Description
7	1	Plain, slightly inturned, rim of barrel shaped vessel. Internal thumbing present below rim.
8	1	Squared rim of straight sided vessel.
9	2a	Thumb impressed, slightly everted, rim of round shouldered vessel.
10	1	Bowl with thumb impressed rim.
11	2a	Barrel shaped vessel with thick T-shaped rim which is externally decorated with oblique stick impressions.
12	2a	Thick, T-shaped, rim of barrel shaped vessel.
13	2	Vessel similar to no. 12. Similar T-shaped rims occur at Castle Hill. ³

¹ G. A. Holleyman and E. C. Curwen, 'Late Bronze Age lynchet-settlements on Plumpton Plain, Sussex,' *P.P.S.*, vol. 1 (1935), pp. 16-59.

² C. F. C. Hawkes, 'The pottery from Castle Hill, Newhaven,' *S.A.C.*, vol. 80 (1939), pp. 269-292, particularly p. 270, Fig. 1, 1.

³ C. F. C. Hawkes, 1939, *op. cit.*

FIGURE 42. *Ditch, vessels in fabric 3b:*

Pedestal bases and shouldered vessels (see also for example Vessel 34) feature in fabric 3b. Professor Hodson has discussed the affinities of these forms.¹ These types are, however, neither inclusive or exclusive to the fabric.

Vessel Ditch layer

14	1	Incurving barrel shaped vessel with pedestal base.
15	2a	Flat base with slight eversion.
16	1	Thick, domed base with foot-ring.
17	2a	Low pedestal base.
18	1	Pedestal base.
19	1	Round shouldered vessel with slightly everted and beaded rim.
20	3	Boss with "haematite slip." The burnished surface is coloured dark red, an effect produced by the presence, or application, of iron oxides.

FIGURE 43. *Ditch**Fine wares in fabric 3b:*

These appear finer grained and better finished than other fabric 3b wares.

Vessel Ditch layer

21	2a	Gently curved vessel with bead rim. There is a horizontal groove below the rim and another on the shoulder.
22	2	Small shouldered jar with everted rim and base with foot-ring.
23	1	Base with foot-ring.

Fine wares:

24	1	Everted rim of shoulder jar.
25	1	Base with foot-ring from small jar.
26	1	Base with foot-ring from small jar.

Fabric 5:

27	1	Sherd with triangular toothed, rouletted impression.
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Fabric 3d:

28	1	Eroded straight sided, bucket shaped vessel with plain rounded rim and slight eversion of base.
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FIGURE 44. *Ditch, vessels in fabric 3c:**Vessel Ditch layer*

29	1	(3c) 5: A vessel in fabric similar to 3c but with the soapiness of 5. It has a rounded shoulder with horizontal grooving and bands of lightly tooled oblique lines. The shape and grooving is akin to a Belgic pedestal urn.
30	1	Rounded jar with incipient bead rim.
31	2a	Plain rimmed, straight sided bowl inturning towards the rim.
32	2b	Necked, globular jar with everted rim.
33	1	Round shouldered jar with everted rim.

FIGURE 45.

*Feature 63:**Vessel Fabric*

34	3b	Shouldered bowl with slightly everted rim. Very similar to tripartite bowl from West Blatchington. ²
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Feature 791:

35	2a	A rather crude 'Saucepan pot' with slightly beaded, everted rim.
36	3c	Flat base with slightly domed underside.

¹ F. R. Hodson, 1962, *op. cit.*

² N. E. Norris and G. P. Burstow, 1950, *op. cit.*, p. 44, Plate I,

Feature 699:

37	4	Shouldered situla vessel with slightly flaring neck and fingered finish. ¹
38	?3c	Angular shoulder.

FIGURE 46.

Feature 671:

<i>Vessel</i>	<i>Fabric</i>	
39	3b	Bag shaped vessel. Similar example at Kingston Buci. ²
40	3b	Small bowl, possibly lamp, with 2 holes for hanging.
41	5	Rim of 'saucepan pot' with internal bevel.
42	2a	Flat base.
43	2b	Thumb impressed, thick everted base.

FIGURE 47.

Feature 228, material is similar to that found in the top fill of the enclosure ditch. Vessels 47, 49 and 52 resemble those at Plumpton Plain.³

<i>Vessel</i>	<i>Fabric</i>	
44	3a	Finger impressed inturned rim of bowl.
45	?3c	Sherd from angular situla vessel.
46	3a	Plain rim, with slight inturn, from straight sided vessel.
47	3a	Plain rim, with finger nail impressions, from straight sided vessel.
48	3a	Finger impressed rim of bowl.
49	2a	Plain rim from straight sided vessel.
50	3a	Plain rimmed bowl with flat top.
51	3a	Eroded bowl with finger impressed rim and body decoration comprising oblique incised strokes between 2 grooved lines.
52	3a	Plain rimmed, straight sided, vessel with finger nail impressed rim.

FIGURE 48.

Feature 790:

<i>Vessel</i>	<i>Fabric</i>	
53	2b	Flat base, and upper portion, of round shouldered vessel with everted rim.
54	2b	Upper portion of high necked vessel.
55	2a	Flat base and heavy, slightly beaded, rim from round shouldered vessel.
56	2b	Round shouldered vessel, having an everted rim with slight bead.
57	2b	Plain, slightly everted rim, of high necked vessel. Traces of fingernail impression along top of rim.
58	3c	Body sherd with incised eyebrow decoration.
59	3b	High shouldered jar with slightly everted foot, and everted rim.
60	3b	Rectangular, flat topped, rim.
61	2b	Rounded, barrel shaped vessel, with flat base and slightly everted rim with internal bevel.

FIGURES 49-52.

These figures are associated with Eastern Atrebatic types including necked storage vessels with wide bellies, formerly designated "South Eastern B." Examples occur at Horsted Keynes.⁴

Feature 877:

<i>Vessel</i>	<i>Fabric</i>	
62	5	'S' profile storage vessel with narrow neck and wide belly.
63	5	Body sherd from corrugated vessel.
64-66	5	Flat bases from straight sided vessels.
67	5	Slightly everted base with flaring sides.
68	5	Omphalos base.
69	5	Globular jar with everted rim.
70	2a	Everted rim with flat top.
71	5	Necked jar with high shoulder and everted base.
72	5	Shouldered sherd with incised eyebrow decoration.
73	5	Sherd from necked jar with square toothed impressed or rouletted decoration.

¹ R. A. Smith, 'The finds and foreign parallels,' Part II of G. R. Wolsley, R. A. Smith and W. Hawley, 'Prehistoric and Roman settlements on Park Brow,' *Archaeologia*, vol. 76 (1926-7), pp. 1-40, particularly p. 17, Fig. 5.

² E. C. Curwen and C. F. C. Hawkes, 'Prehistoric remains from Kingston Buci,' *S.A.C.*, vol. 72 (1931), pp. 185-217, particularly p. 193, Fig. 3.

³ G. A. Holleyman and E. C. Curwen, 1935, op. cit., p. 41, Fig. 2, a-b and p. 50, Fig. 8, d.

⁴ H. R. Hardy and E. C. Curwen, 1937, op. cit., pp. 252-65.

*Feature 920:**Vessel Fabric*

74	5	Necked storage vessel, with everted foot-ring base. There is an ornamental raised finger impressed band, together with tooled eyebrow decoration. There is both vertical and horizontal burnishing.
75	5	Sherd with barbotine decoration.
76	5	Round shoulder sherd with line of fingernail impressions between two grooves.
77	5	Small base with flaring sides and slight foot-ring.
78	5	Everted flat base.
79	5	Necked, globular, storage vessel with internal finger impressions remaining from moulding.
80	2a	Gently rounded, barrel shaped, vessel with everted rim, flat base, and possible traces of pale coloured paint.
81	5	Omphalos base, possibly from vessel 79.
82	5	Shouldered vessel with rounded everted rim and flat base having 3 holes in bottom for use as strainer.
83	5	Very thick rimmed, necked, storage vessel with flaring body.
84	5	Necked storage vessel with flaring body and tooled eyebrow decoration.
85	5	Everted base with slight foot, possibly belongs to vessel 83.
86	5	Everted base with slight foot, possibly belongs to vessel 84.

FIGURE 53. *Vessels in fabric 5**Vessel Feature*

87	920	Decorated sherds from shouldered jar with everted rim. Below the rim are grooves and a tooled band of oblique hatching. On the shoulder a tooled triangle is filled with oblique hatching and has a stamped circlet at its apex.
88	4	Incised rim of 'Saucepan' vessel.
89	737	Shouldered jar with slight neck and everted rim. The tooled decoration comprises horizontal lines framing a series of 'eyebrows.' A similar vessel appears at Castle Hill. ¹
90	744	Necked vessel with thick everted rim. A band of fingernail impressions is delimited by horizontal grooves.
91	895	Round shouldered sherd decorated with tooled chevrons. Similar vessel at Seaford. ²
92	222	Body sherd decorated with lightly incised triangle.
93	906	Round shoulder sherd with incised eyebrow decoration and stamped circlet; above this there is a line of square tooth comb impressions.
94	737	Body sherd, possibly from 'Saucepan pot,' having tooled eyebrows infilled with impressed dots. Similar vessel at Park Brow. ³

FIGURE 54. *Pottery in various fabrics**Vessel Fabric Feature*

95	3c	897	Vessel from Romano-British feature. Fragments from 'Saucepan pot' with bead rim and similarly projecting base. A tooled groove runs horizontally below the rim and above the base. The sherds exhibit traces of a free flowing curvilinear decoration. Similar vessels at Findon and the Caburn. ⁴
96	4	956	A thin walled bipartite bowl with angular shoulder and slightly everted rim.
97	3a	4	Necked vessel with rounded rim.
98	4	156	Lengthened everted rim from shouldered jar. The rim is internally dished.
99	3b	505	Curved body sherd with bead rim from 'Saucepan pot' or jar.
100	3c	952	Vessel similar to no. 99.
101	2a	4	Everted flat base from barrel shaped vessel. Vessels 97 and 88 came from this same feature. Also in this feature was a vessel very similar to vessel no. 1.
102	2a	568	Everted base with foot-ring.

¹ C. F. C. Hawkes, 1939, *op. cit.*, p. 285, Fig. 5, No. 4.² V. Gerard Smith, 'Iron Age and Romano-British site at Seaford,' *S.A.C.*, vol. 80 (1939), pp. 293-305, particularly p. 297, Fig. 3.³ R. A. Smith, 1926-7, *op. cit.*, p. 21, Fig. 14.⁴ C. F. C. Hawkes, 'The Caburn pottery and its implications,' *S.A.C.*, vol. 80 (1939), pp. 217-262, particularly p. 244, Fig. J, No. 70.

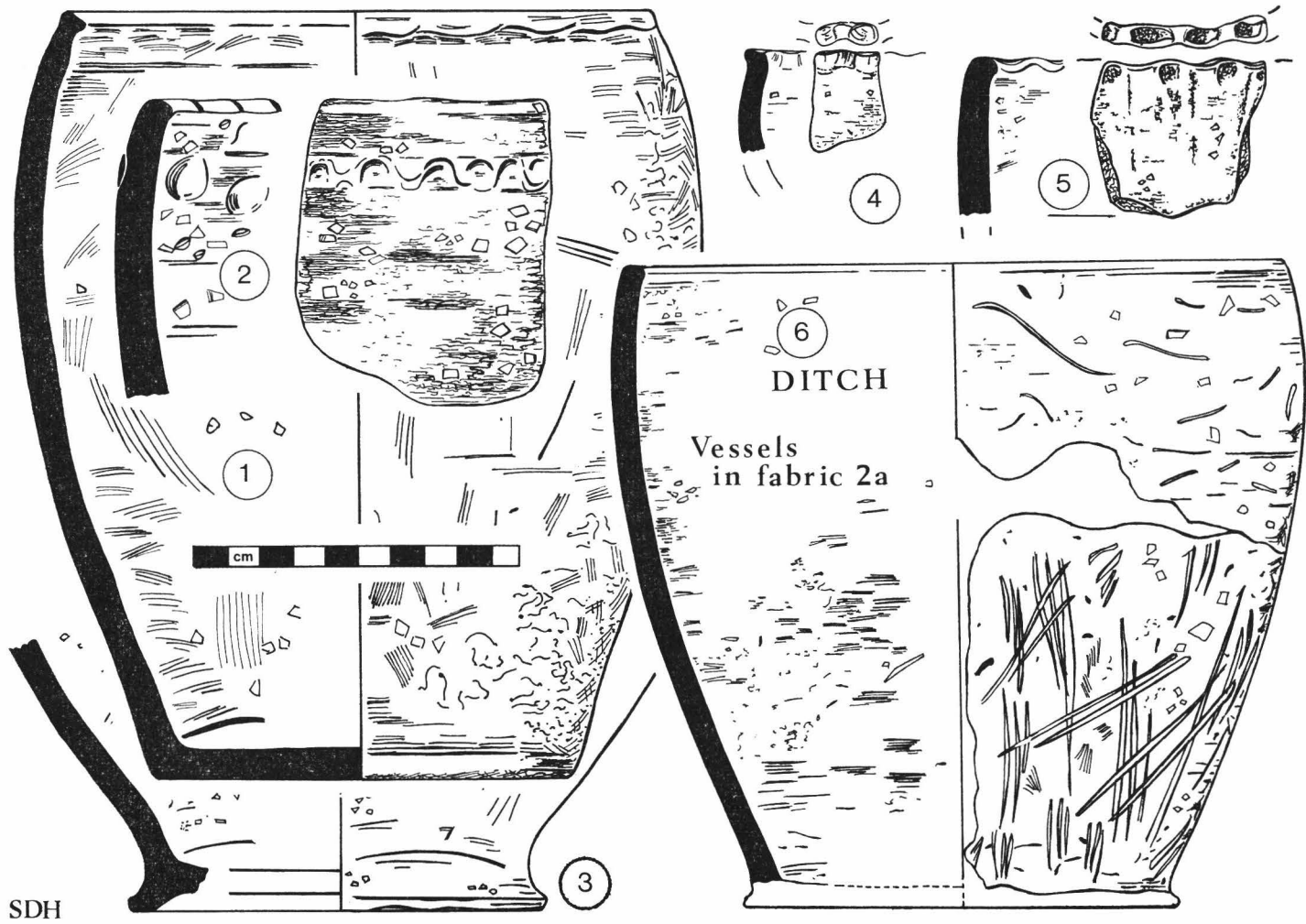
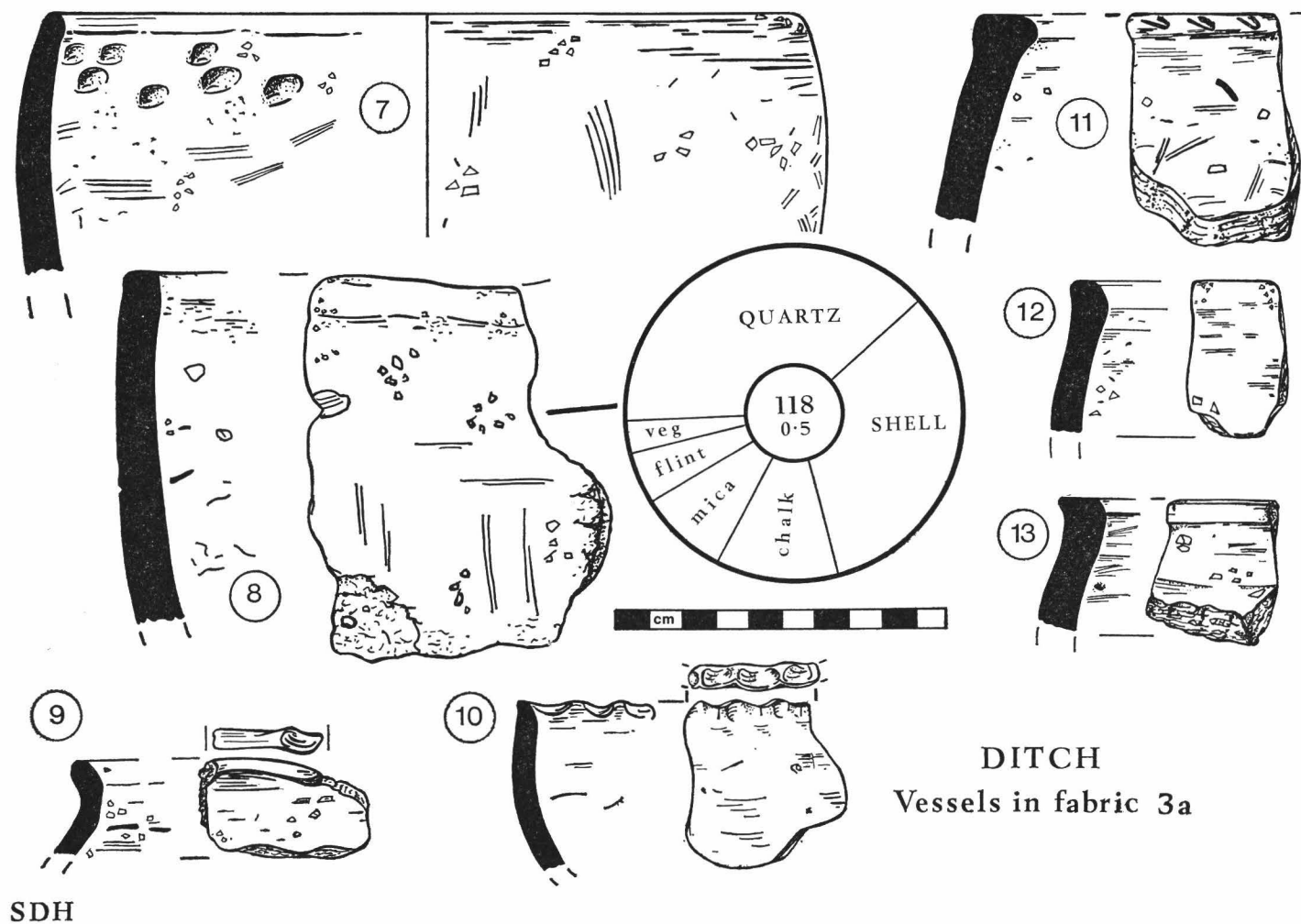


FIG. 40. Iron Age pottery from the ditch. Fabric 2a. Scale $\frac{1}{2}$

FIG. 41. Iron Age pottery from the ditch. Fabric 3a. Scale $\frac{1}{2}$

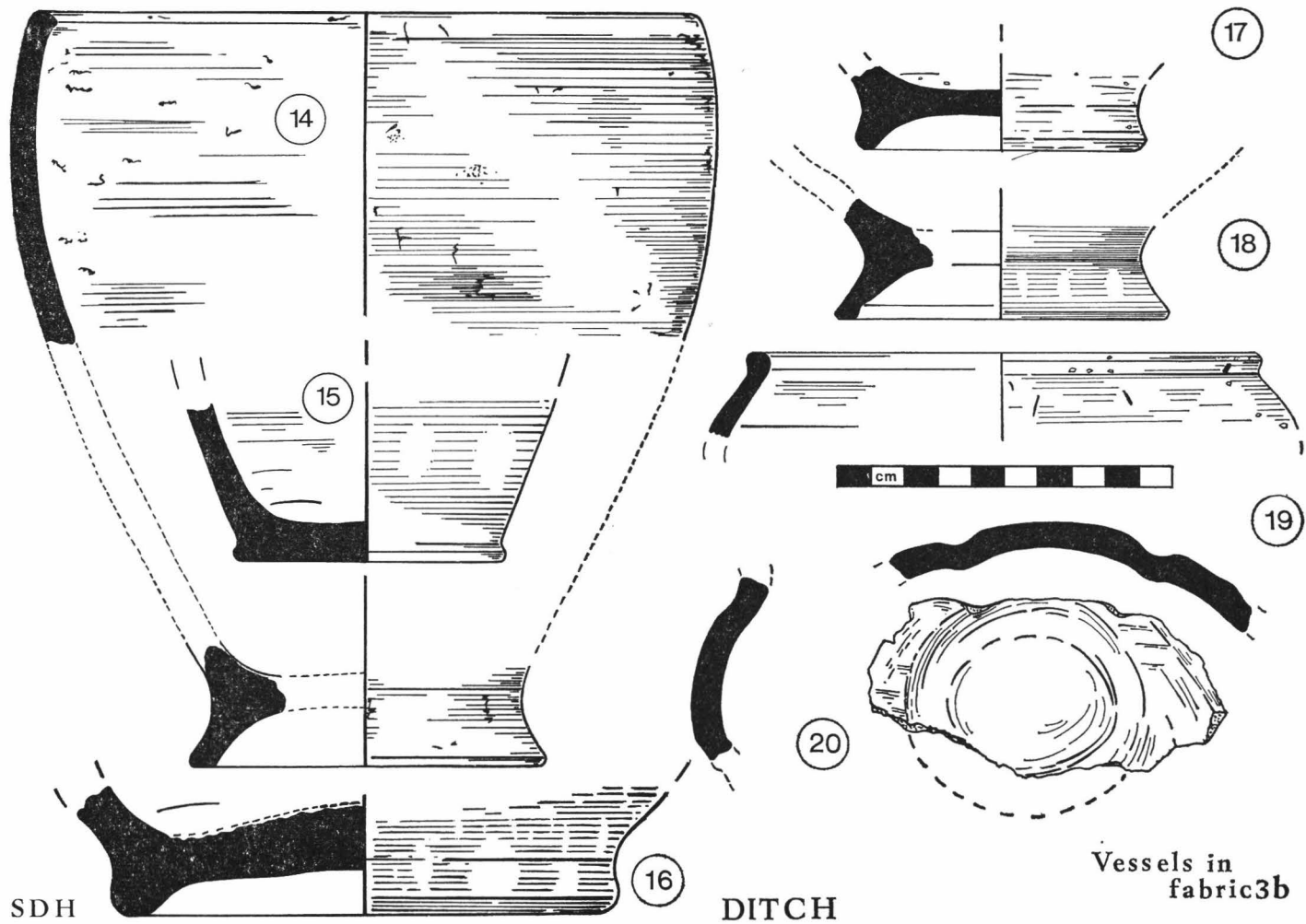
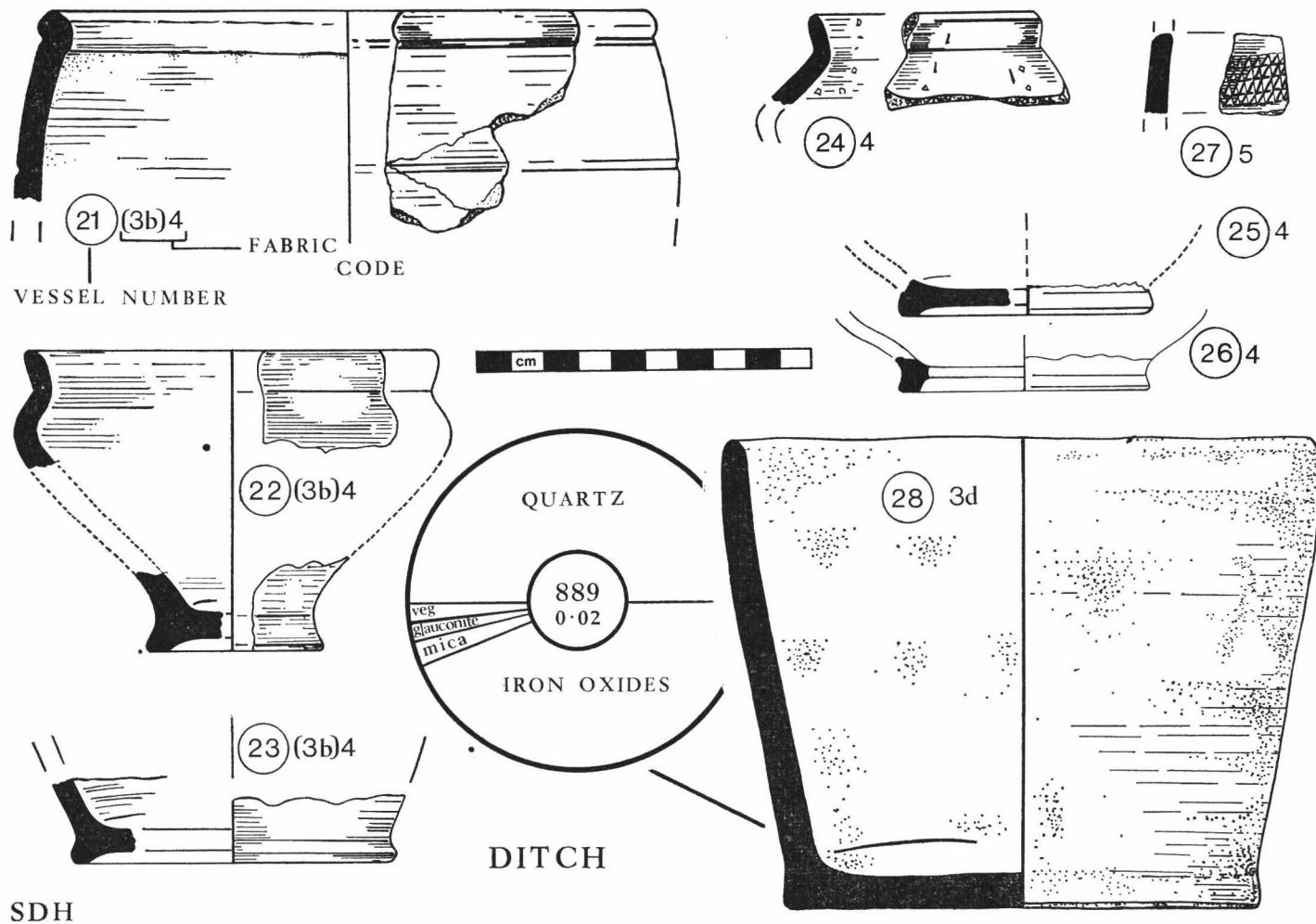


FIG. 42. Iron Age pottery from the ditch. Fabric 3b. Scale $\frac{1}{2}$

FIG. 43. Iron Age pottery from the ditch. Scale $\frac{1}{2}$

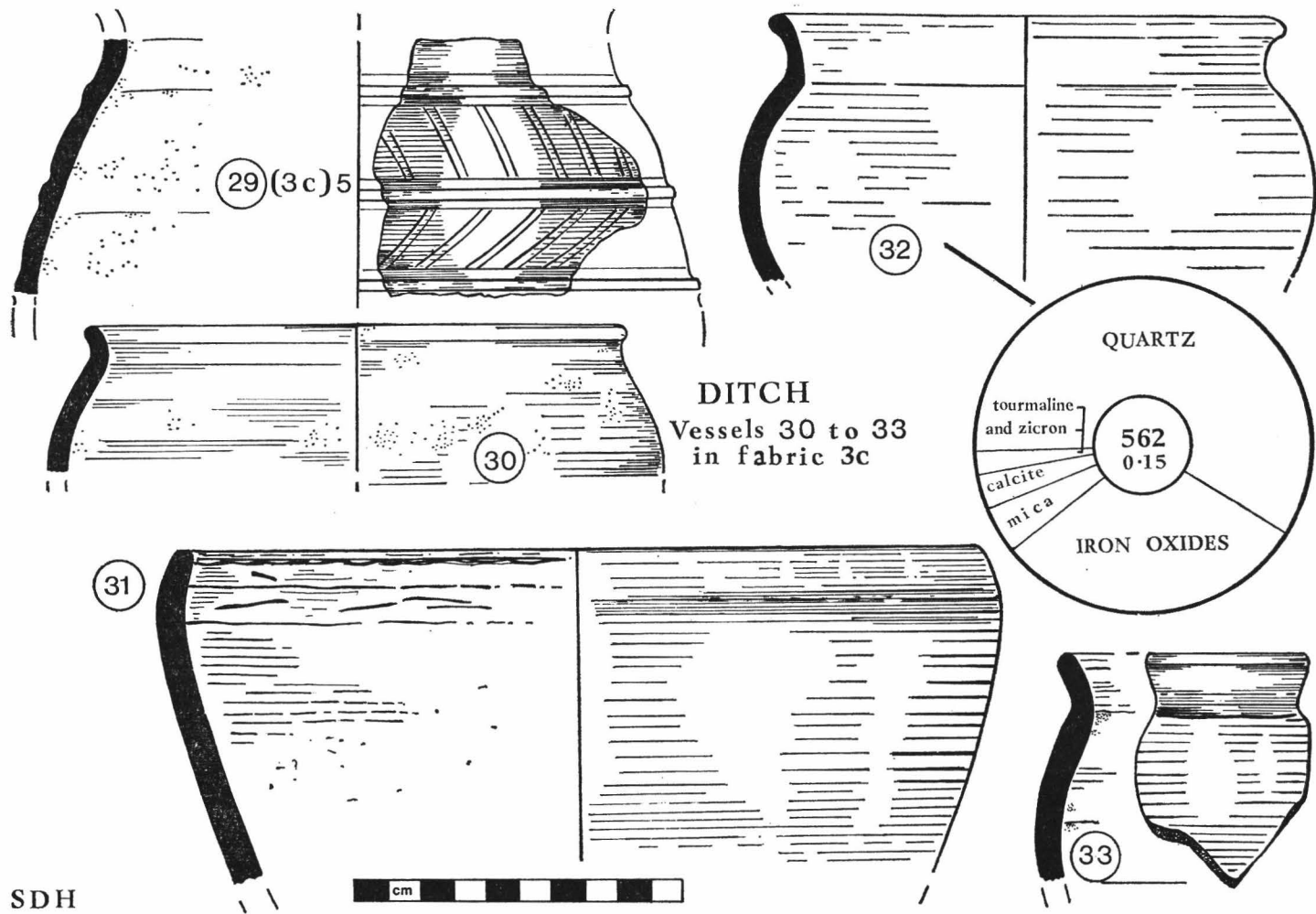
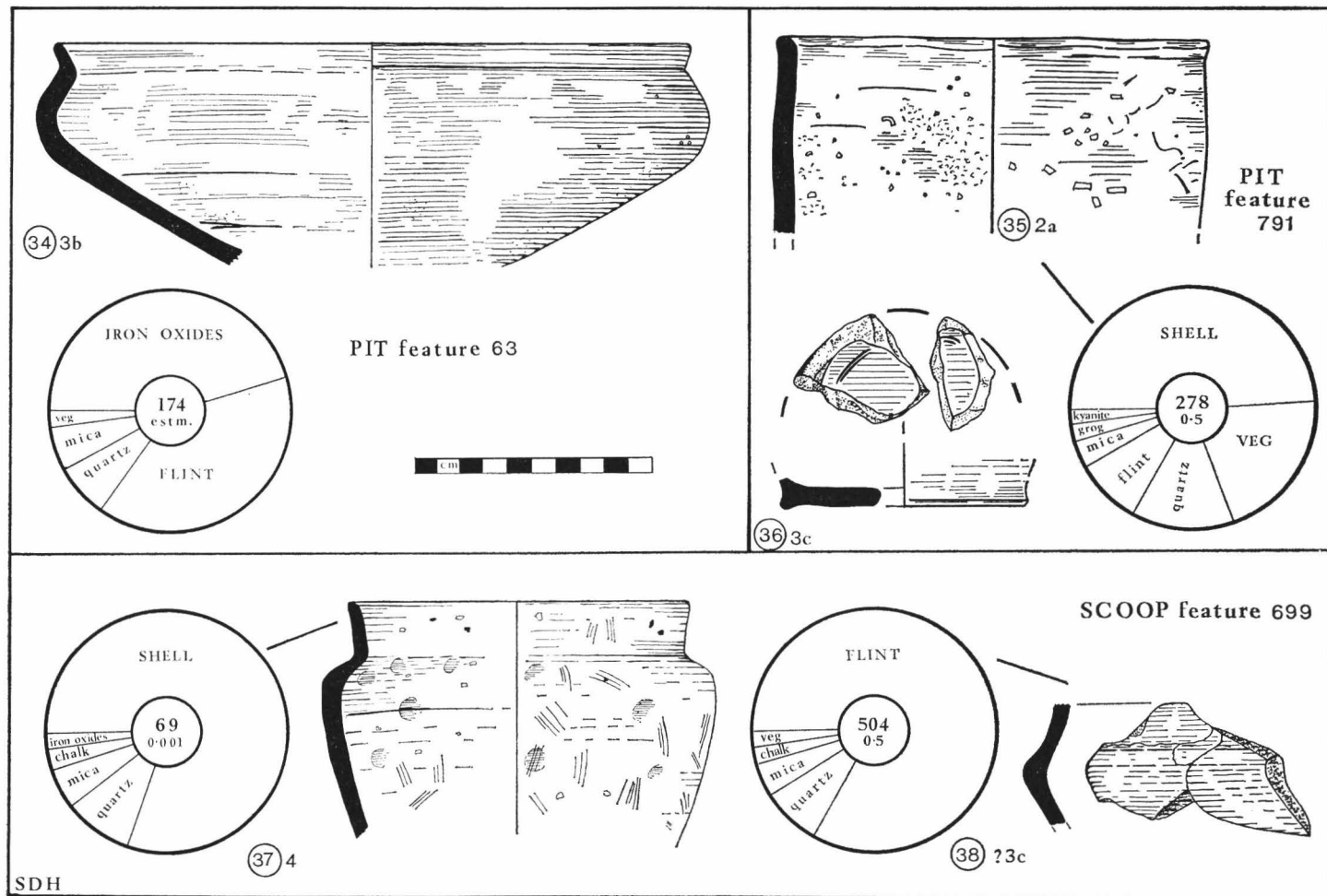
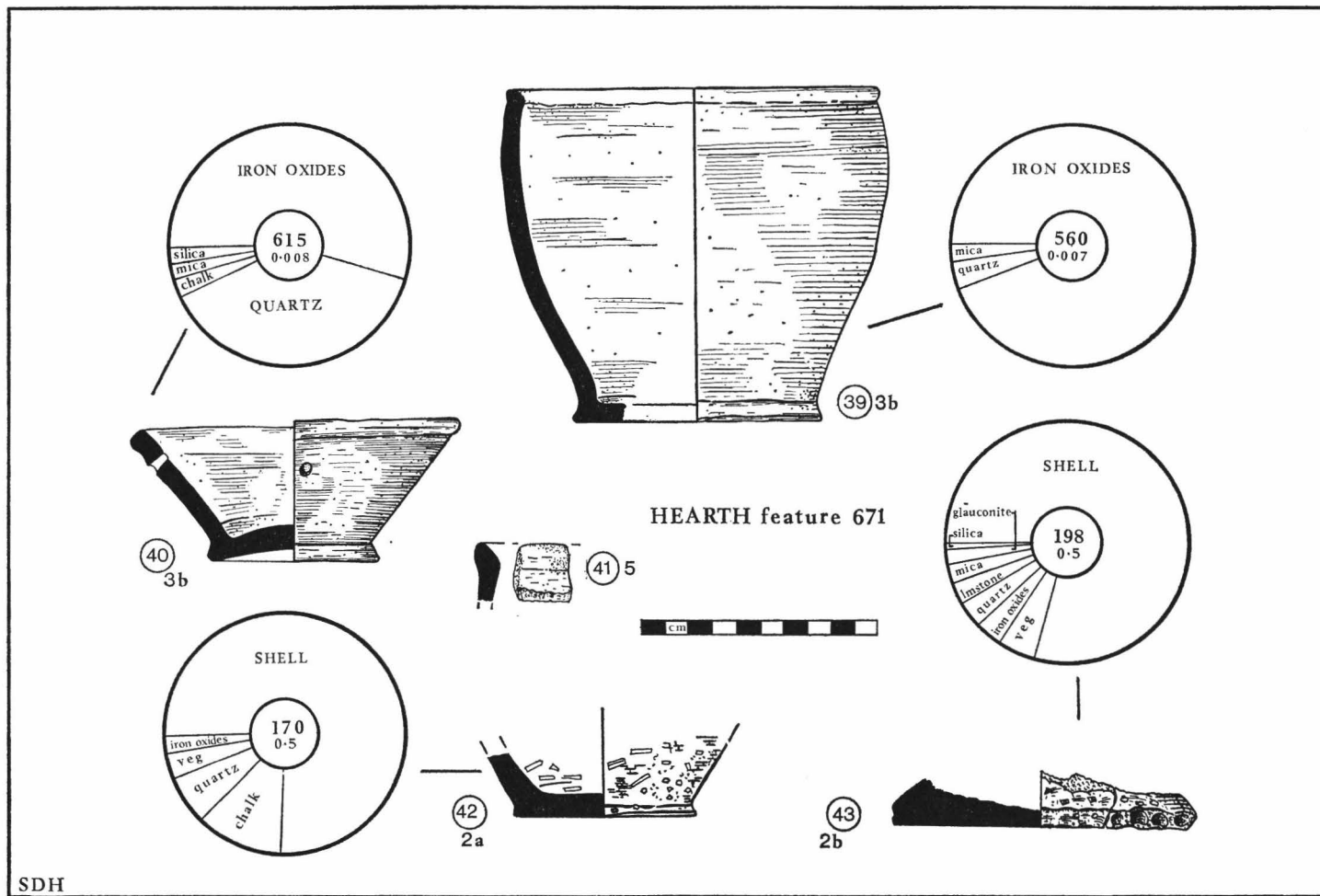


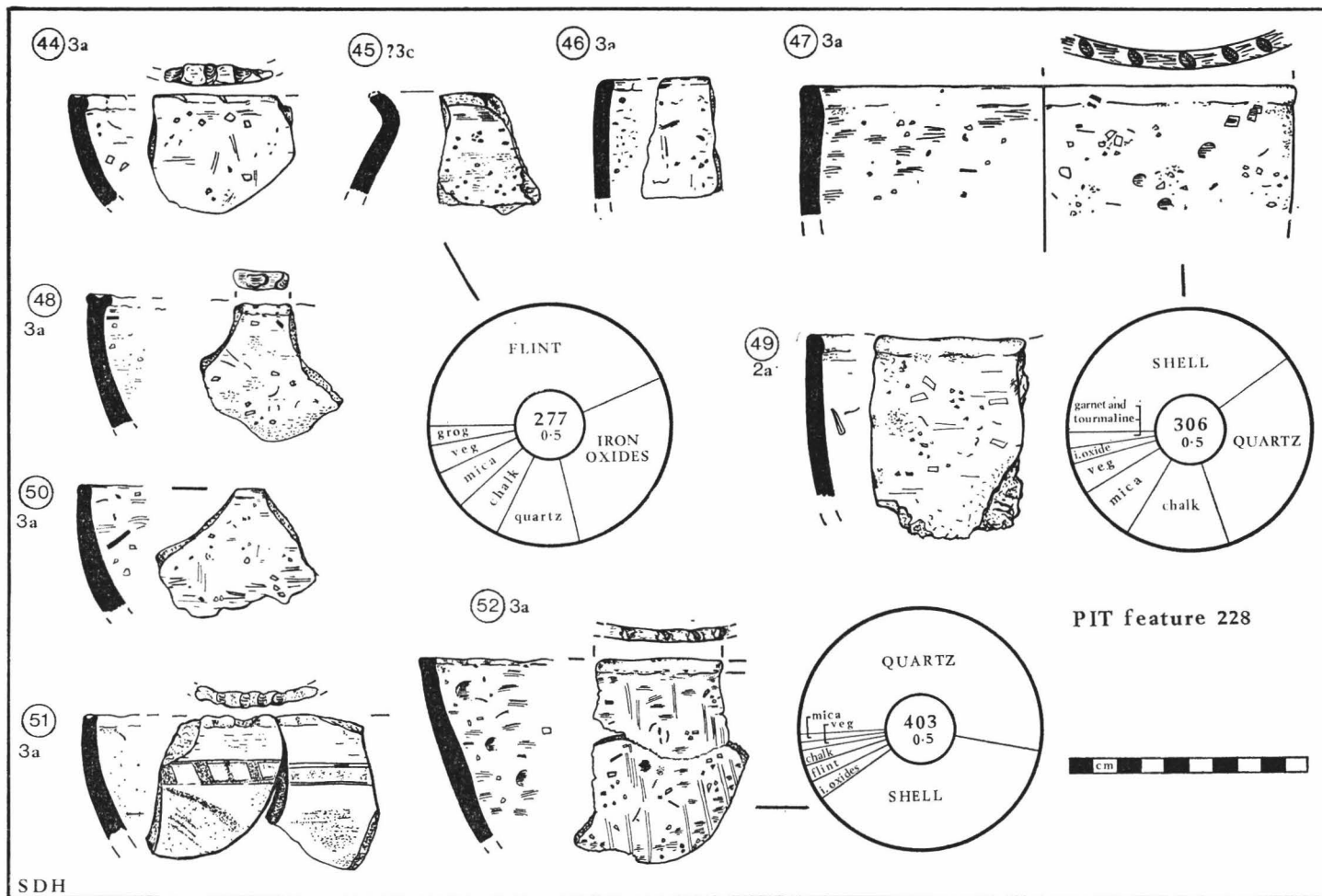
FIG. 44. Iron Age pottery from the ditch. Fabric 3c. Scale $\frac{1}{2}$

FIG. 45. Iron Age pottery from features 63, 791 and 699. Scale $\frac{1}{2}$



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FIG. 46. Iron Age pottery from feature 671. Scale $\frac{1}{2}$

FIG. 47. Iron Age pottery from feature 228. Scale $\frac{1}{2}$

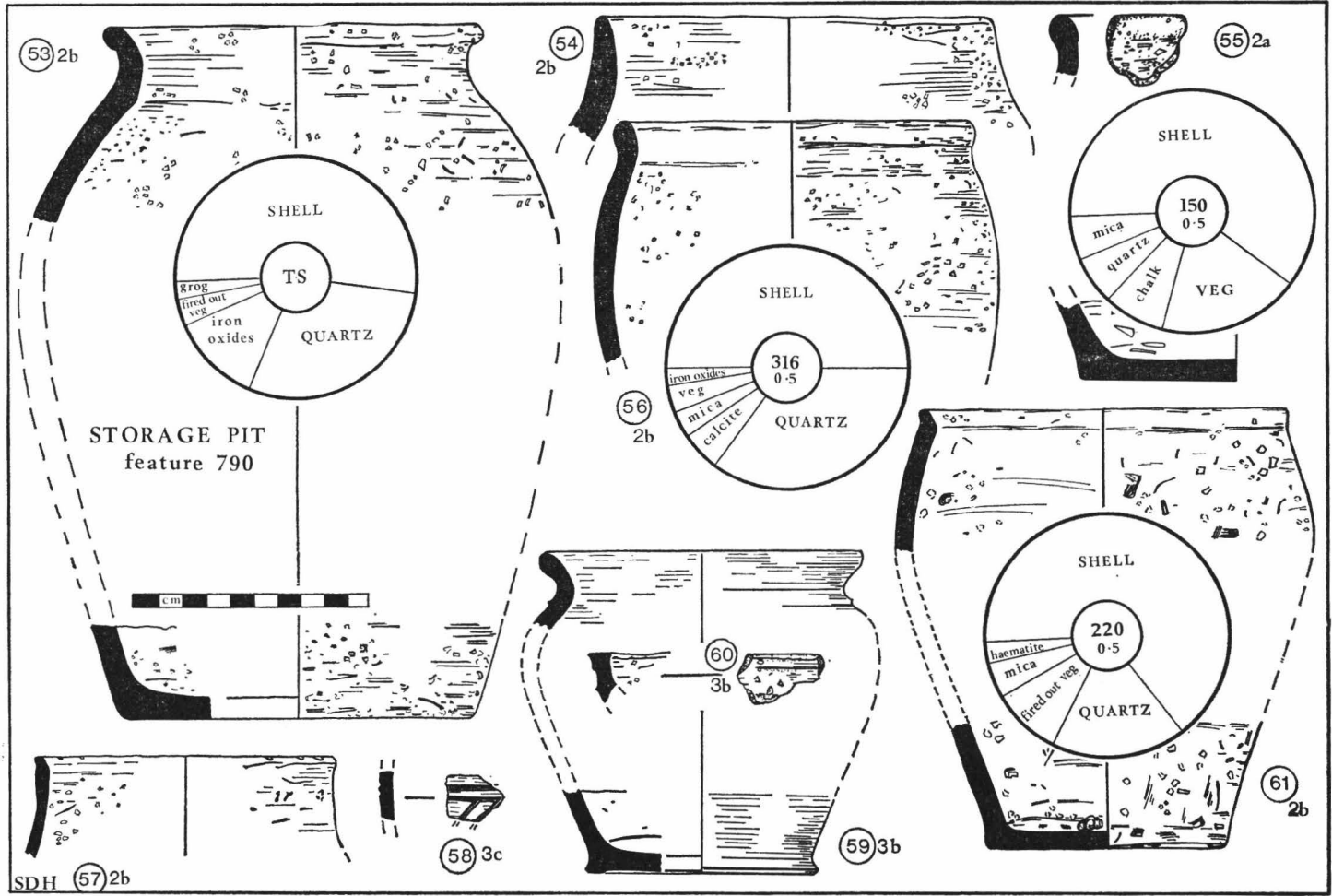
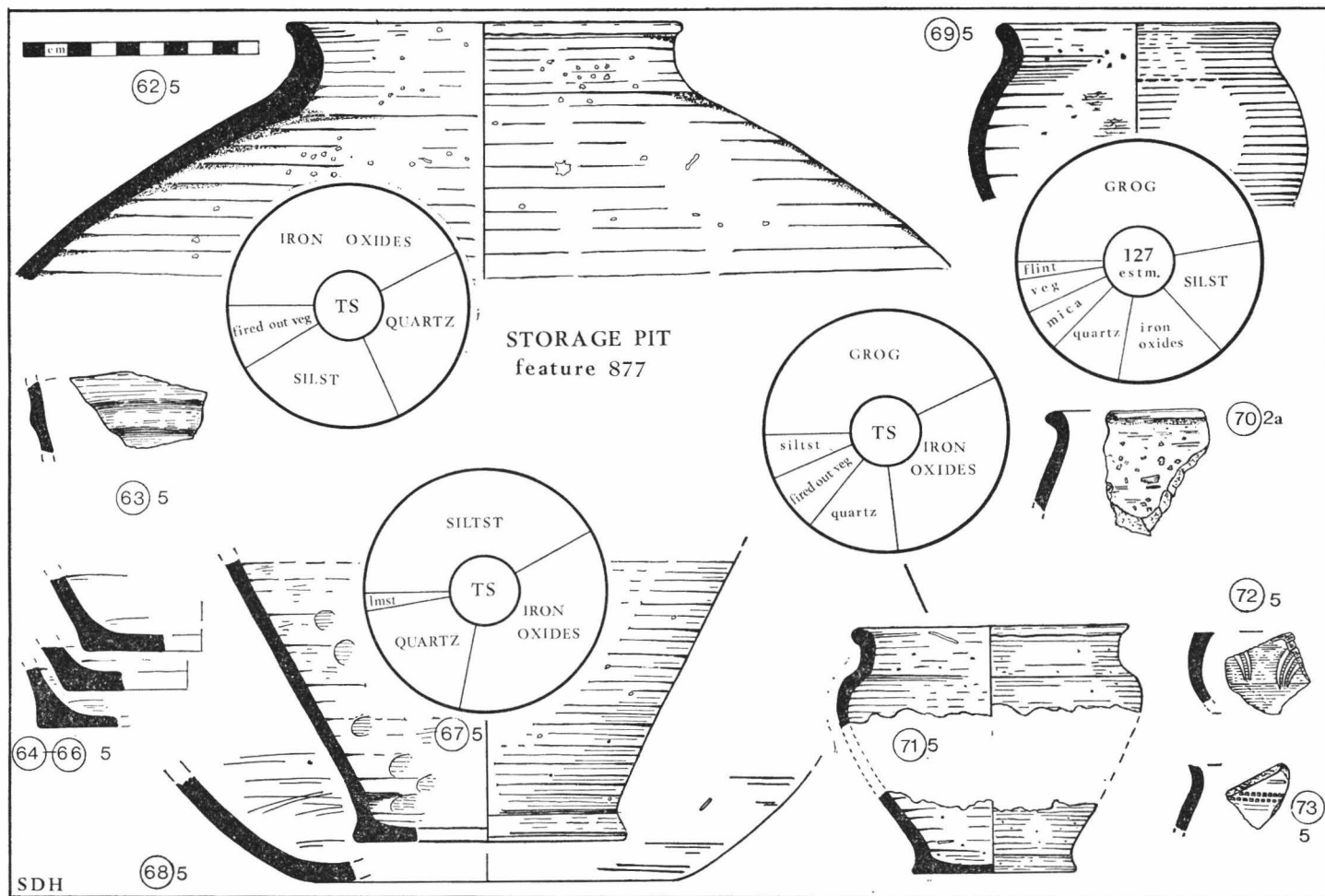


FIG. 48. Iron Age pottery from feature 790. Scale †

Fig. 49. Iron Age pottery from feature 877. Scale $\frac{1}{2}$

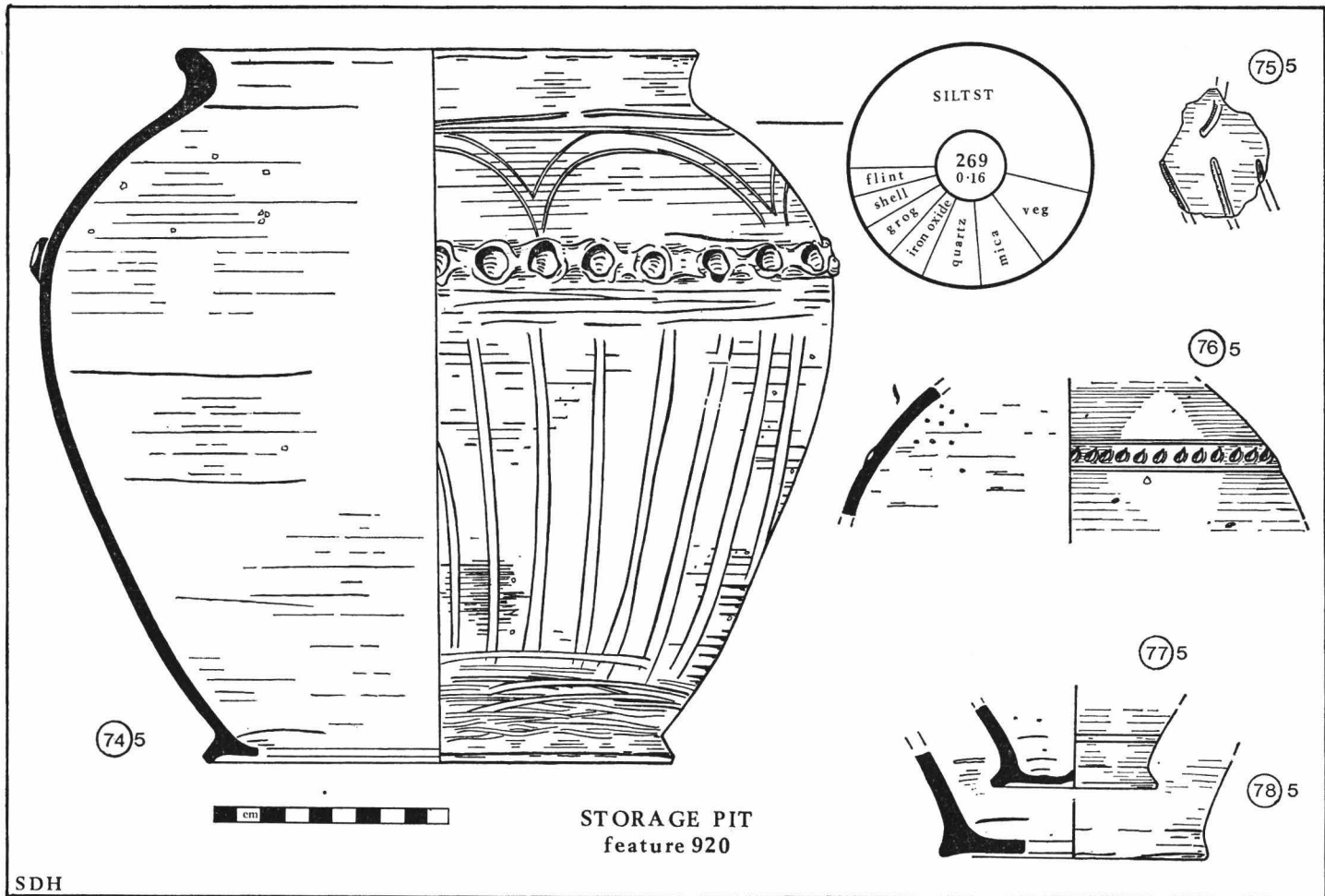


FIG. 50. Iron Age pottery from feature 920. Scale $\frac{1}{2}$

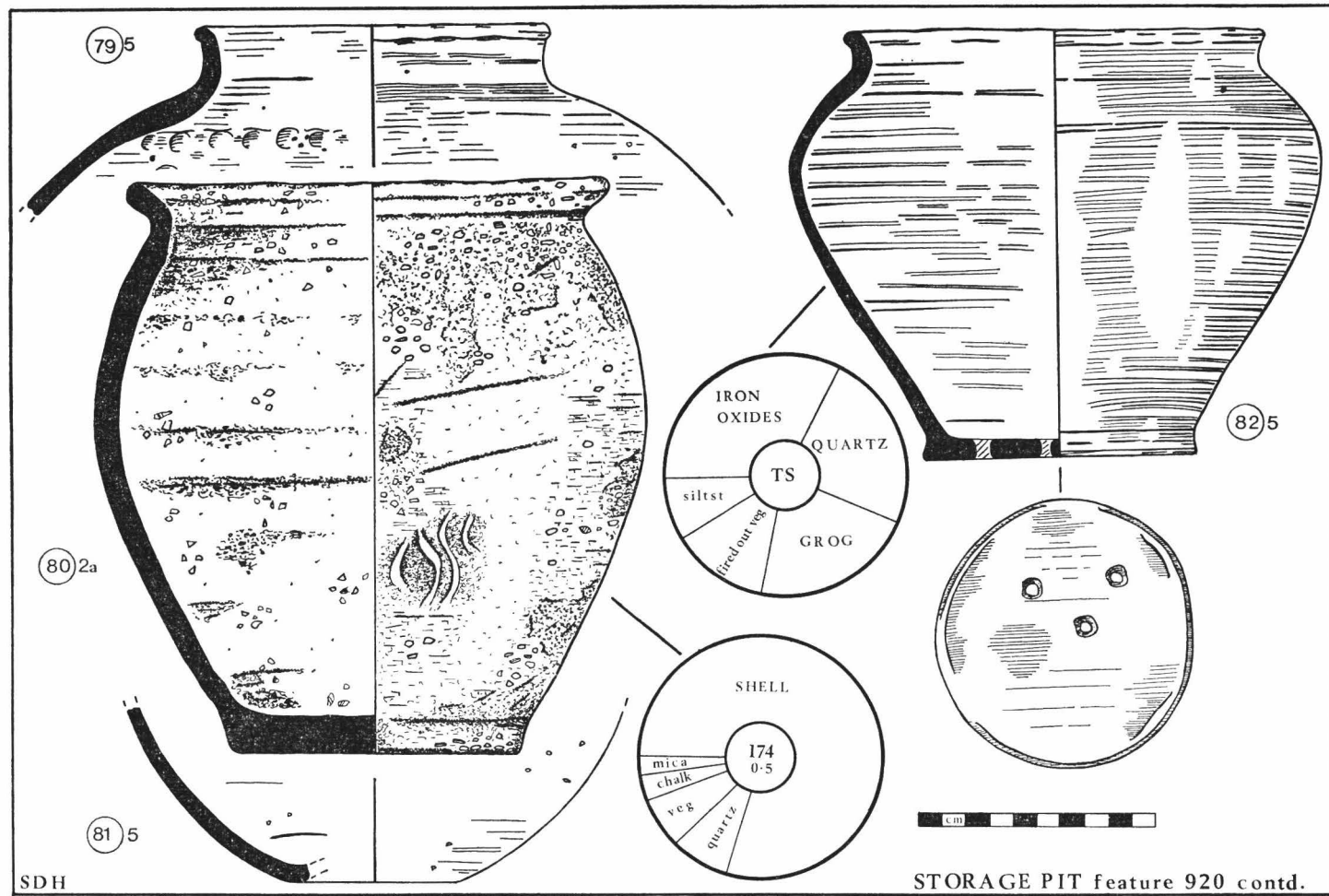


FIG. 51. Iron Age pottery from feature 920. Scale $\frac{1}{2}$

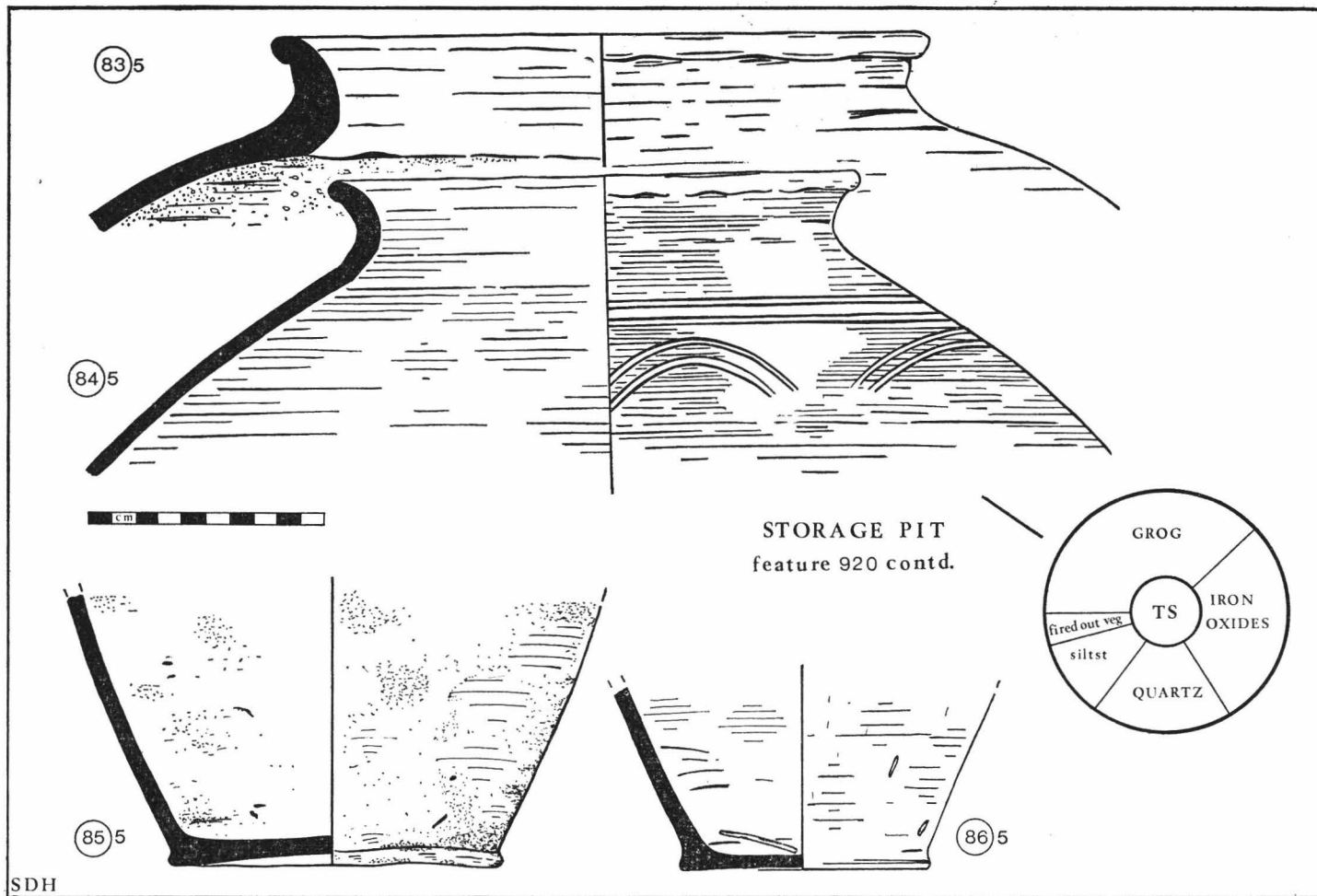


FIG. 52. Iron Age pottery from feature 920. Scale $\frac{1}{2}$

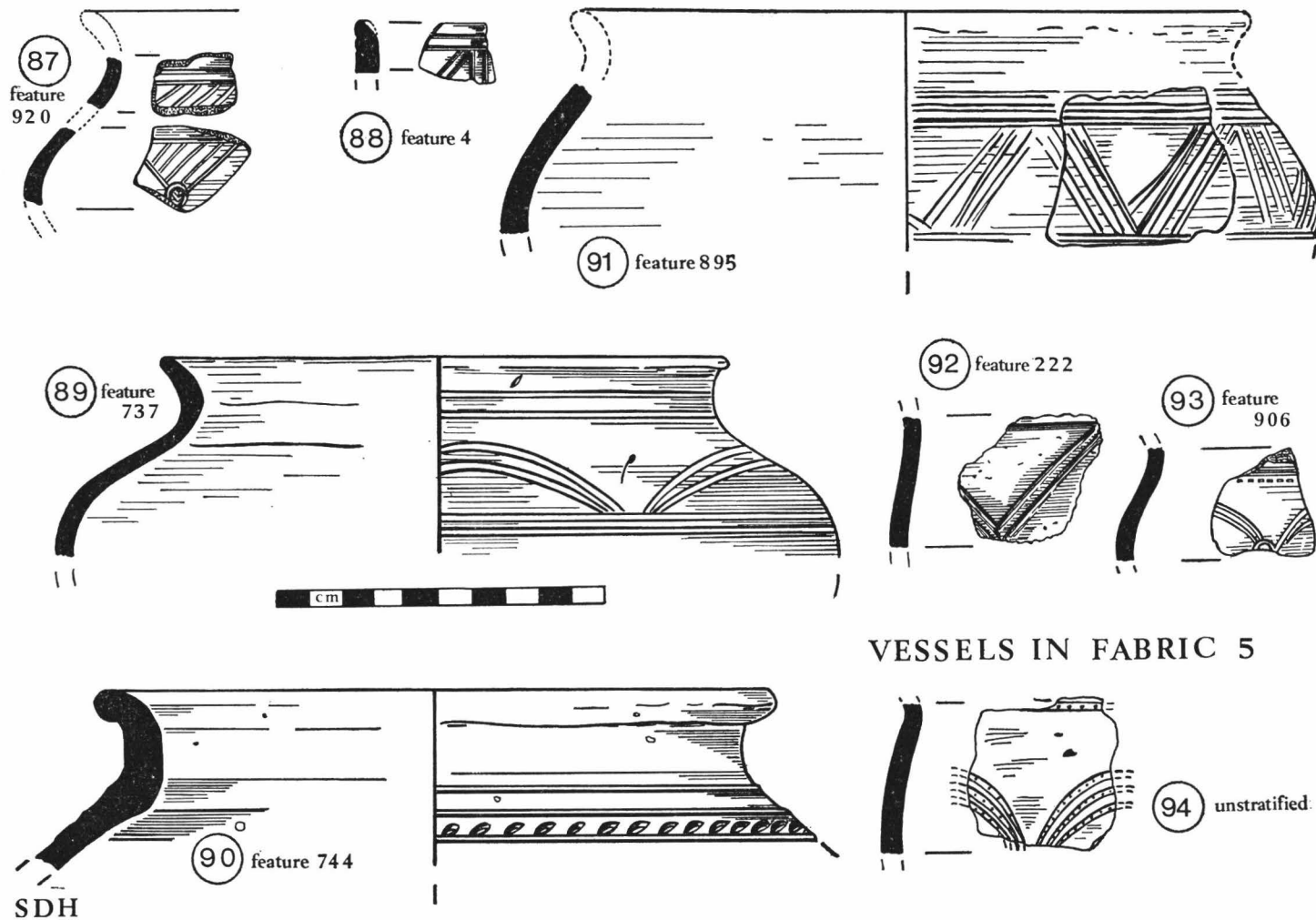
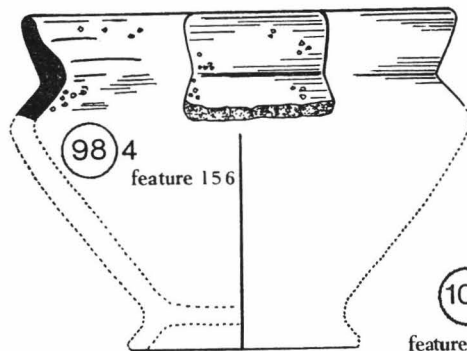
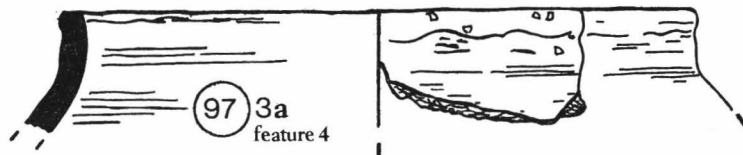
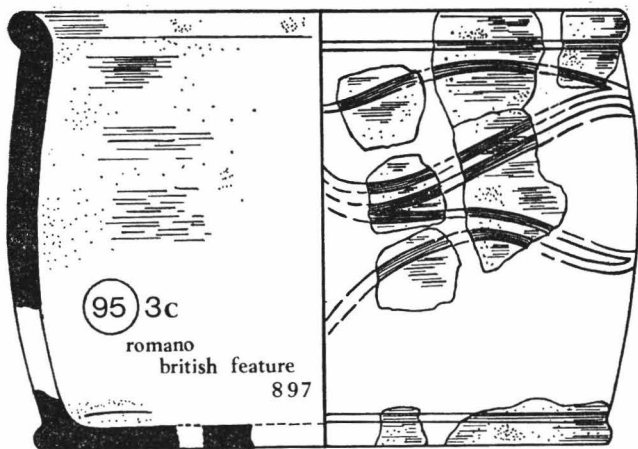
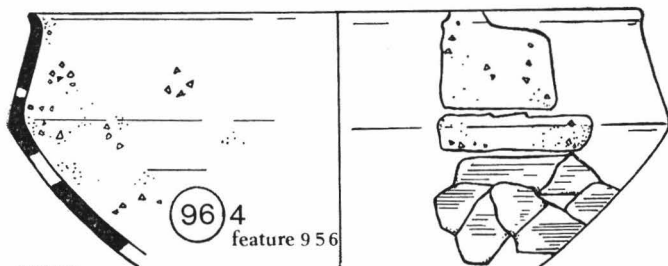


FIG. 53. Iron Age pottery in fabric 5. Scale $\frac{1}{2}$



A range of fabric and type.



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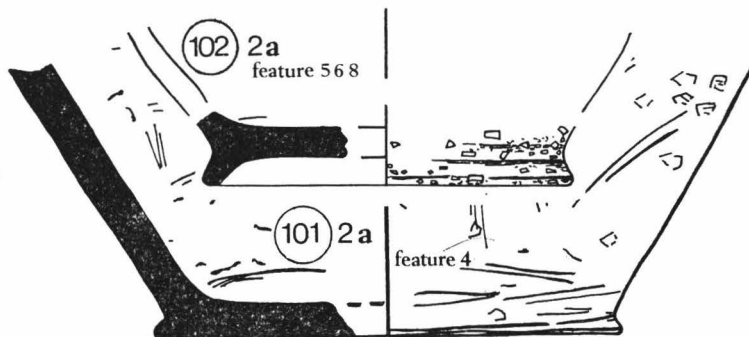


FIG. 54. Iron Age pottery in various fabrics. Scale $\frac{1}{2}$

Thin Section Examination of Three Sherds

by C. R. Cartwright and A. J. Woods

The writers carried out a study of these sherds prior to Miss Hamilton's more extensive survey. The conclusions drawn from these three sherds have been incorporated in her discussion of the fabric types where the possible clay sources are noted.

Vessel 39, fabric 3b. This contained a large number of goethite inclusions in pisolithic form scattered throughout the very fine anisotropic clay matrix. Associated with them were frequent iron minerals and magnetite inclusions. Probably occurring naturally in the clay were infrequent, mainly surrounded, small quartz fragments, many of them cracked.

Vessel 43, fabric 2b. Two sherds were thin sectioned; both contained numerous 'loose' shell fragments, a number of which were associated with, or enclosed by, pieces of grey or white limestone. Natural inclusions in the anisotropic clay matrix were infrequent rounded, very small quartzes.

Bronze Age vessel 16, fabric 1a. The main constituents were small rounded often polycrystalline grains of quartz, some exhibiting wavy extinction; these were probably present in the clay utilised. Several large chunks of flint also occurred and iron minerals were present as were patches of iron staining (? haematite).

IRON AGE SMALL FINDS

THE OBJECTS OF FIRED CLAY (Figs. 56-58)

Most Iron Age features contained pieces of fired clay, together they numbered 4,620 fragments, and weighed 34.3 kilogrammes. The greatest concentration was in layers 1 and 2 of the enclosure ditch on the south side, and where no provenance is given for the pieces illustrated and described they were from here. One explanation for this nucleation is that fired clay objects and pottery were produced in this area. In terms of fabric and filler the clay objects and domestic pottery were closely comparable, the former being made very largely from pottery fabric 2a. The predominant filler in clay objects was shell, some of it of non-fossil marine origin. Others of the shells are definitely fossil; these have been examined by Dr. John Cooper of the British Museum (Natural History), whose report is below. He has shown that the clay used came from the Newhaven outlier of the Woolwich and Reading Beds. Further confirmation of this is provided by the occurrence of limonite concretions and lignite in some daub fragments. Seeds and chaff were often present in small proportions, and a few pieces contained chalk, beach pebbles and fragments of a vesicular non-metallurgical slag.

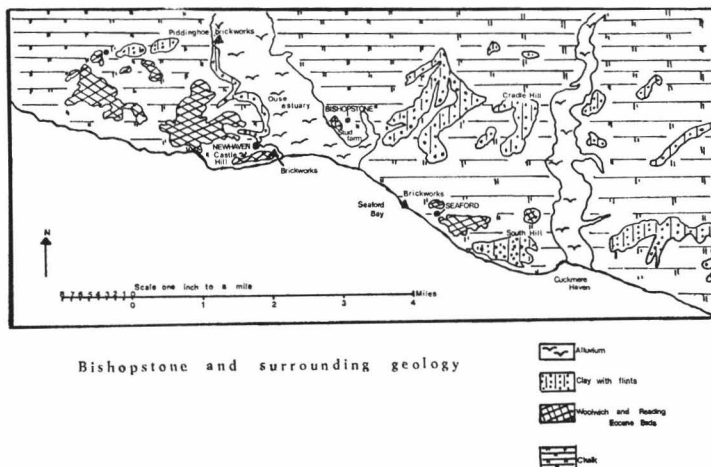


FIG. 55. Sketch map of the drift and solid geology of the area around the site

78% of the pieces of clay were amorphous lumps without any distinguishing features to suggest what purpose they might originally have served. Impressions of wattle frameworks were encountered on 2% of the pieces, the wattles generally being circular and of average diameter 12mm. Much of this daub was found in late Iron Age pits and has already been discussed. This leaves a small number of pieces with a definite shape for which it is possible to suggest a function.

Triangular loomweights. (C1 and C2). Twenty-four pieces of triangular clay loomweights were found in early Iron Age contexts; of these the two most complete, from layers 2a and 3 of the enclosure ditch, are illustrated. Both examples are perforated at one angle only, but other pieces had at least two and possibly three perforated corners. The estimated weight when complete of No. C1 is c. 815 grams, and of C2 c. 750 grams. In addition to those from the ditch examples came from Pits 906 and 543.

Circular loomweights. (C3). Twenty pieces came from circular weights which were poorly fired and contained chalk as the chief filler. Similar weights have been found in Bronze Age contexts at Cock Hill and Itford Hill.¹ Examples came from the enclosure ditch and Pits 22, 671, 4 and 791.

Spindle whorls. (C4 and C5). Only two examples were made of clay and they are both illustrated. C4 is a circular type with oval section. It was found in Pit 906 and is of pottery fabric 2b. C5, which is drum-shaped, came from the top fill of grave 531. The fabric is similar to pottery fabric 5, and the surface is burnished.

Sling-shot. (C6 and C7). Two examples from the top fill of the enclosure ditch, both in pottery fabric 3a.

Circular rimmed vessels. (C8, C11 and C12). These are thicker circular vessels in fabrics similar to 2a and 3a. They range in thickness between 18mm. and 10mm. Some examples like C8 are from straight sided plain rimmed vessels with plain angled bases, similar in shape to the modern flowerpot. Others, like C11 and C12, are small bowls or lids. Many pieces of these vessels were heavily damaged by heat on the concave, presumably the inner, surface. C11 had an impression on the outer surface of some object with which it had been in contact; this will receive further consideration in conclusion.

Thick-sided trays. (C13-C14). These were rectangular vessels similar in fabric and thickness to the above. C13 had signs of burning on the ? inner surface. It was not always possible to distinguish individual sherds from those of circular rimmed vessels; the two types together produced 137 sherds from the ditch and features 4, 662, 510 and 588.

Thin-sided trays. (C9 and C10). By comparison with the circular vessels and thick-sided trays these were often very crumbly and poorly fired. The surfaces showed a tendency to laminate and only small sherds were found, but a few pieces like C10 were much harder fired than any of the other objects, except C15. These had a grey/blue exterior and inner surface. A total of 39 pieces were found in the ditch and Pit 790.

Hearth brick. (C15). A rather anomalous single piece from Pit 790, layer 4. It had been fired at a high temperature resulting in some blistering of the surface. Apparently it was securely stratified but its remembrance to a modern hearth or refractory brick suggests that it might possibly be intrusive.

Clay Pillars. (C16 and C18). Twenty-five objects with a roughly circular cross-section were found in the ditch, and one of these, C16, can be tentatively reconstructed. In that example the pillar is roughly octagonal in shape and expanded towards one end.

No. C17. The corner of an object with four impressions where it had been in contact with bars or other objects which have left dished marks of oval section; from the ditch.

Wedge-shaped pieces (C19 and C20). Sixteen of these were found. C19 had been very roughly fashioned into a triangular shape by squeezing in the fingers; it was found in posthole 671. No. C20 is more carefully made and better fired; this and the other examples are from the ditch.

The Bars. (C21-C26). These are of square or rectangular section similar in appearance to kiln bars or small bricks. Thirty-four pieces were found in the ditch, some were of uniform section, others probably tapered from the centre. One example, C26, expands towards one end in the fashion of the pillars.

¹ H. B. A. and M. M. Ratcliffe-Densham, 'An anomalous earthwork of the late Bronze Age, on Cock Hill, Sussex,' *S.A.C.*, vol. 99 (1961), pp. 100-101; and G. P. Burstow and G. A. Holleman, 'Late Bronze Age settlement on Itford Hill, Sussex,' *P.P.S.*, vol. 23 (1957), pp. 200-201.

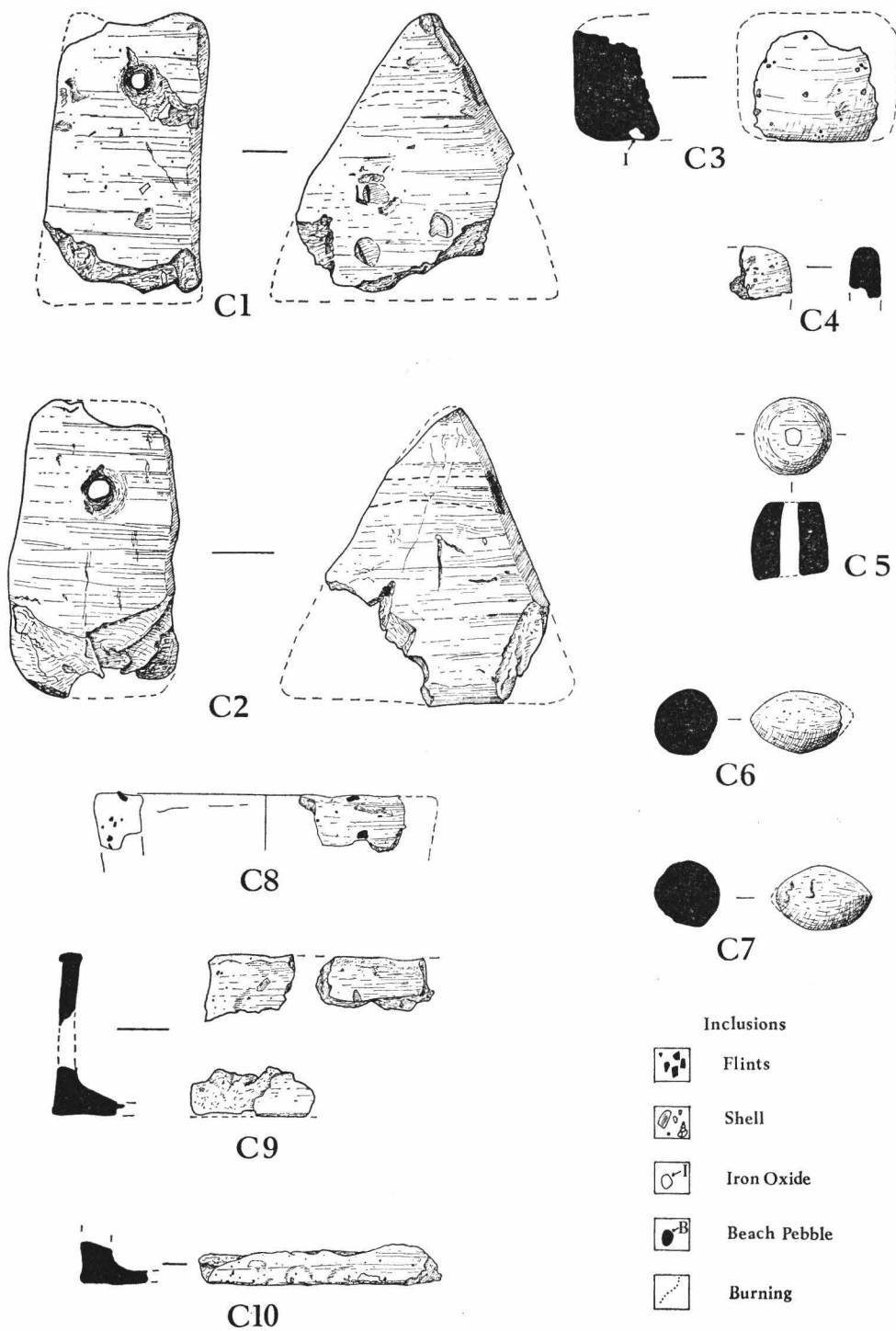


FIG. 56. Fired clay objects C1-C10. Scale $\frac{1}{4}$

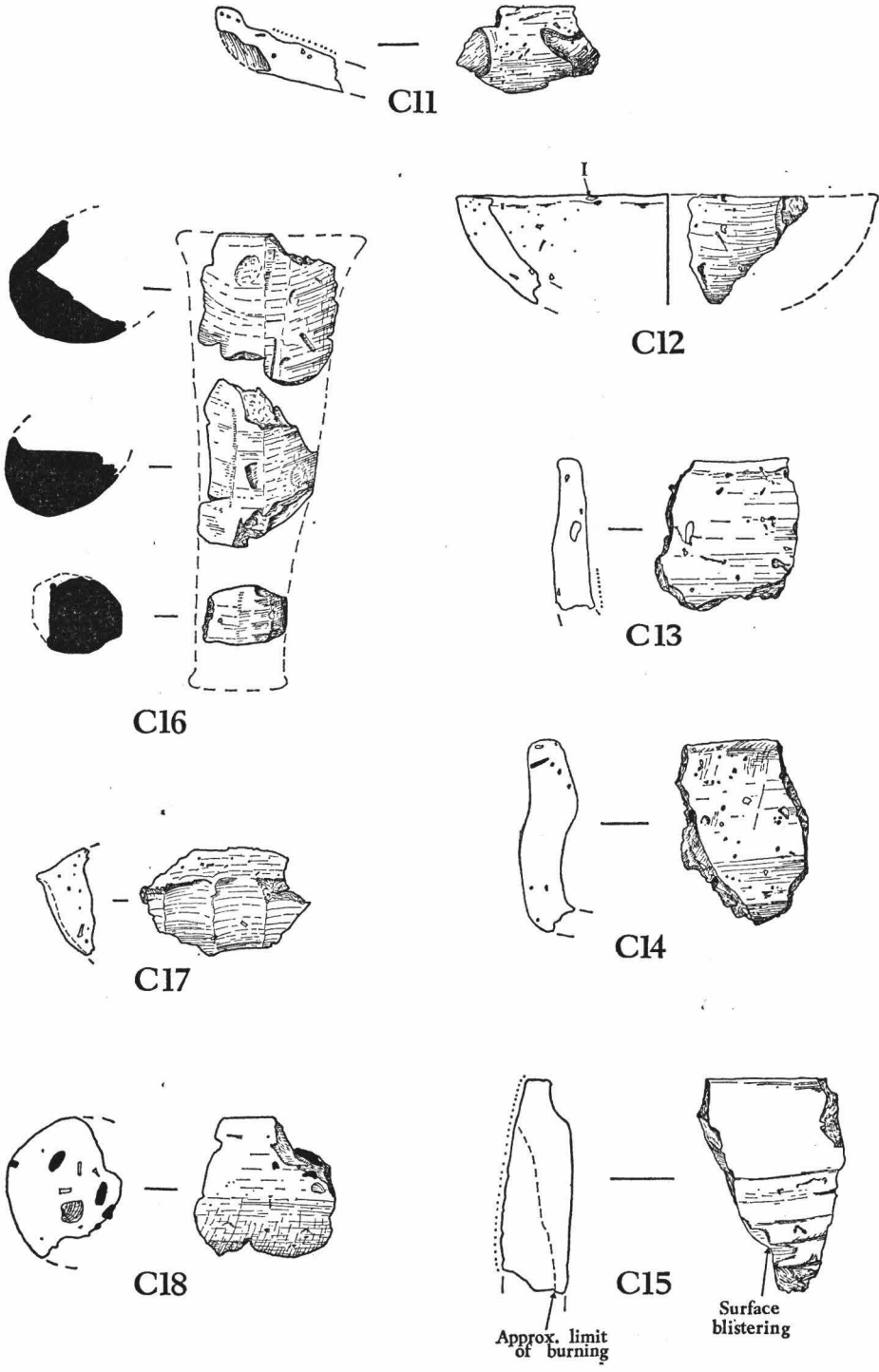


FIG. 57. Fired clay objects C11-C18. Scale $\frac{1}{4}$

THE HYPOTHESIS OF SALT PRODUCTION EXAMINED

Many of the fired clay objects are of types generally associated with the extraction of salt from seawater. Bars, pillars, wedges and the vessels are all paralleled by finds on the Essex and Dorset coasts.¹ A growing body of evidence suggests that these objects were used in the final stages of the extraction process, after brine had been concentrated by natural evaporation. It then appears to have been further evaporated in rectangular trays and clay vessels supported over a fire by bars and pillars. An indication that shallow clay vessels were indeed supported by pillars is given by C11, which has on its side the impression of an object which might almost be C16, or a type of T-shaped object found at Goldhanger, Essex.²

The environs of Rookery Hill would, in the Iron Age, have provided a most suitable location for the extraction of salt. The alluvial flats at the mouth of the Ouse appear to have been an estuary with occasional shallow inlets, one of which probably ran up nearly to the present Bishopstone village. Similar coastal inlets were chosen for salt production in Essex and Hampshire.³ There is also evidence for salt production on the opposite side of the Ouse valley during pre-history, at the multi-period site on Castle Hill, Newhaven.⁴ Like so many of the finds from that site the bars were not stratified but were very similar to C21, and the similarity is reinforced by the fact that the Bishopstone examples were made of clay from Castle Hill. Settlements in the Ouse valley still produced salt at the time of the Domesday Survey.⁵ The obvious potential of the estuary margin does not however explain why these artifacts came to be found at the top of the hill at between 44 and 50m. above O.D. Nor does it explain the similar finds at Castle Hill, or Mill Hill, Shoreham.⁶ The latter site is at 46m. O.D., and overlooks the former estuary of the Adur to its west. Assuming that seawater was not carried up to these sites we are left with two alternative explanations. The first is that the artifacts were made on the site but used on the margins of the estuary at the bottom of the hills. The second is that preliminary evaporation took place on low ground, but that concentrated brine or clay mixed with salt was then brought to the settlement for final stages in the extraction process. This could be desirable if these final stages took some time, during which careful watching was necessary. The latter hypothesis was favoured in the case of sites at Hobarrow and Kimmeridge in Dorset, both on the tops of cliffs overlooking shelving beaches.⁷

At Bishopstone the evidence is inconclusive; no hearths or flues could be associated with the winning of salt, yet such are seldom found even on the Essex Red Hills. The objects certainly appear to have been made on the site together with pottery. We should not therefore totally exclude the possibility that some of these objects may also have been used in bonfire kilns. As R. A. H. Farrar has demonstrated, these activities share a requirement for clay and fuel, and are likely to be associated.⁸ The burnt surfaces of clay objects and the impressions on objects C11 and C17 indicate that they had been used, suggesting that the final stages in the extraction

¹ F. W. Reader, 'Report of the Red Hills Exploration Committee, 1906-7,' *Proc. Society of Antiquaries*, vol. 22 (1908), pp. 165-207. For sites elsewhere see K. W. de Brisay and K. A. Evans (eds.), *Salt: the study of an ancient industry* (Colchester Archaeological Group, 1975).

² F. W. Reader, 1908, op. cit., Fig. 14.

³ F. W. Reader, 1908, op. cit.; and R. Bradley, 'Salt and settlement in the Hampshire-Sussex borderland,' in K. W. de Brisay and K. A. Evans (eds.) 1975, op. cit., pp. 20-25.

⁴ In the McEvory Collection, Barbican House Museum, Lewes.

⁵ S. H. King, 'Sussex,' in H. C. Darby and E. M. J. Campbell (eds.), *The Domesday geography of South-East England* (1962), pp. 456-7.

⁶ I am grateful to the excavator, Mr. F. H. Witten, for information about this site.

⁷ B. W. Cunliffe, 1974, op. cit., pp. 278-9.

⁸ R. A. H. Farrar, 'A note on the Prehistoric and Roman salt industry in relation to the Wyke Regis site, Dorset,' *Proc. Dorset Natural History and Archaeological Society*, vol. 83-4 (1961-2), pp. 137-144.

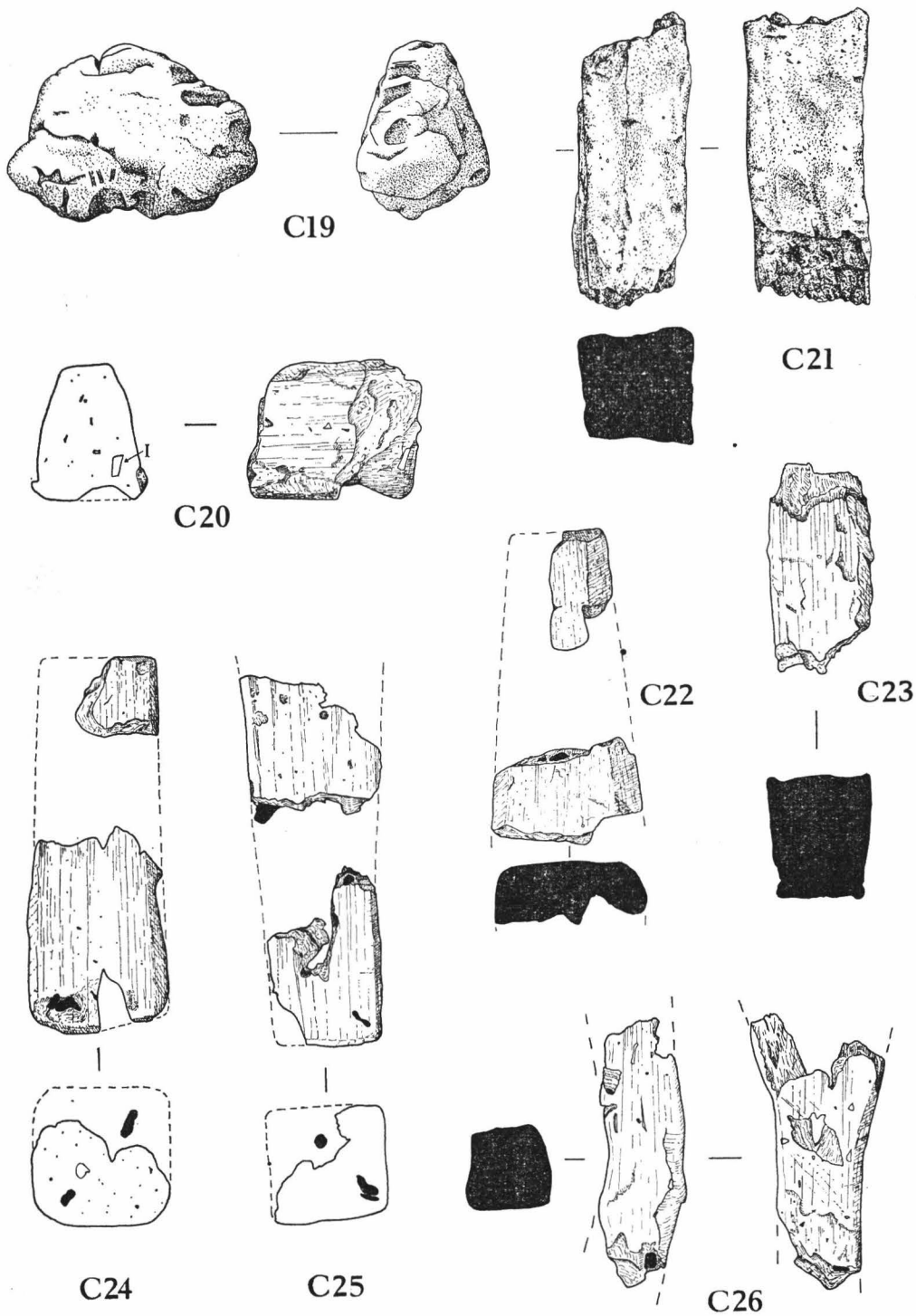


FIG. 58. Fired clay objects C19-C26. Scale $\frac{1}{4}$

process probably took place in the settlement. It is possible, though unproven, that some of the thick clay vessels are moulds for the finished product.¹

The evidence of salt production comes mainly from the early Iron Age enclosed settlement, none of the objects being associated with the pre-enclosure features. Quantities of daub, much of it with flat faces, were found in several late Iron Age pits. Similar pieces are known from the Essex Red Hills,² but this is insufficient evidence to conclude that the industry continued into the late Iron Age.

FOSSIL MOLLUSCS FROM THE POTTERY AND CLAY OBJECTS (Plate XXI)

Shell was present in a large number of the clay objects and pieces of pottery, particularly those made from numerically the largest pottery type, fabric 2a. Nearly all the identifiable pieces are fossil, somewhat surprising in view of the presence of marine molluscs in the Iron Age diet. Several quite large intact gastropods were visible and disorganised aggregates of bivalve shell occurred in a calcareous matrix. Forty-three of the clearer examples were examined by Dr. John Cooper of the British Museum (Natural History) who made identifications as follows:—

(i) Pottery in fabric 2a, mostly from the Iron Age enclosure ditch, layer 1.

Corbicula cordata or *cuneiformis*, 2 examples.

Ostrea bellovacina Lamarck, one specimen.

Ostrea sp., one fossil specimen.

Ostrea sp., a fresher specimen which is probably non-fossil; it has minute borings made by marine organisms on its surface.

Brotia melanoides (J. Sowerby), 5 examples.

Tympanotonos funatus (J. Sowerby), 1 example

A Cerithiid which cannot be more specifically identified.

One sherd in a fabric similar to type 2b contained a large gastropod fossil and three or four smaller ones. These do not appear to be Eocene and probably come from the Weald Clay.

(ii) Clay objects connected with salt production. The fabric is similar to fabric 2a, and the objects came from the Iron Age enclosure ditch, layer 1.

Tympanotonos funatus (J. Sowerby), two examples from thick vessels similar to object C8. A third very well preserved example was from object C26 (Plate XXIa).

Brotia melanoides (J. Sowerby), one example.

Probably *Corbicula sp.*, two examples.

(iii) Pottery in fabric 2b from Pit 790. This contained aggregates of shell fragments typical to those found in the Woolwich Beds. Small pieces of lignite were also noted.

Ostrea sp., one specimen.

Corbicula sp., one specimen

Tympanotonos funatus (J. Sowerby) or *Brotia melanoides* (J. Sowerby) one specimen.

One sherd contained Mollusca which appeared to derive from Lower Cretaceous Wealden Beds, but the remainder show that the major clay source was the Woolwich and Reading Beds at Newhaven. In fact the mollusc fauna reported here is very similar indeed to that found by a field meeting which visited the outlier in 1970.³

THE OBJECTS OF STONE

A large number of pieces of stone were found, the geological origins of which are discussed in a separate section. Only a small proportion of them had been worked into artifacts.

Querns

1. The entire upper stone and about half the lower stone of a finely made rotary quern of Lower Greensand. The top surface of the upper stone was flat and exhibited tool marks. A neat handle slot had been cut in the top and the spindle hole, though worn, appears originally to have been oval. The lower side of the same stone was concave to fit the convex upper surface of the lower stone. The two grinding surfaces were both worn by use. The lower stone is perforated by a small hole and has a concave base. Querns with these features are known from Romano-British contexts,⁴ but, as this example shows, they were being produced before the conquest. Found in Pit 920, layer 7.

2. Broken lower stone of a saddle quern with one flat face smoothed by use. The lower, unworked, surface shows that it was made from a broken boulder of banded granite. Found in the early Iron Age ditch, layer 1b, beside the southern entrance.

3. Part of the lower stone of a saddle quern with a concave upper surface smoothed by use; also some secondary use as a rubber on one side after breakage. The piece is a siliceous sandstone, possibly from the Lower Greensand, and was found in early Iron Age Pit 228.

¹ See:- K. Riehm, 'Prehistoric salt-boiling,' *Antiquity*, vol. 35 (1961), pp. 181-191.

² F. W. Reader, 1908, op. cit.

³ A. J. Rundle, 'Report on a field meeting to Newhaven, Sussex (August 9th., 1970),' *Tertiary Times*, vol. 1, No. 3 (June 1971), p. 48.

⁴ E. C. Curwen, 'Querns,' *Antiquity*, vol. XI (1937), pp. 133-151 and N. Norris and G. P. Burstow, 1950, op. cit., pp. 50-52.

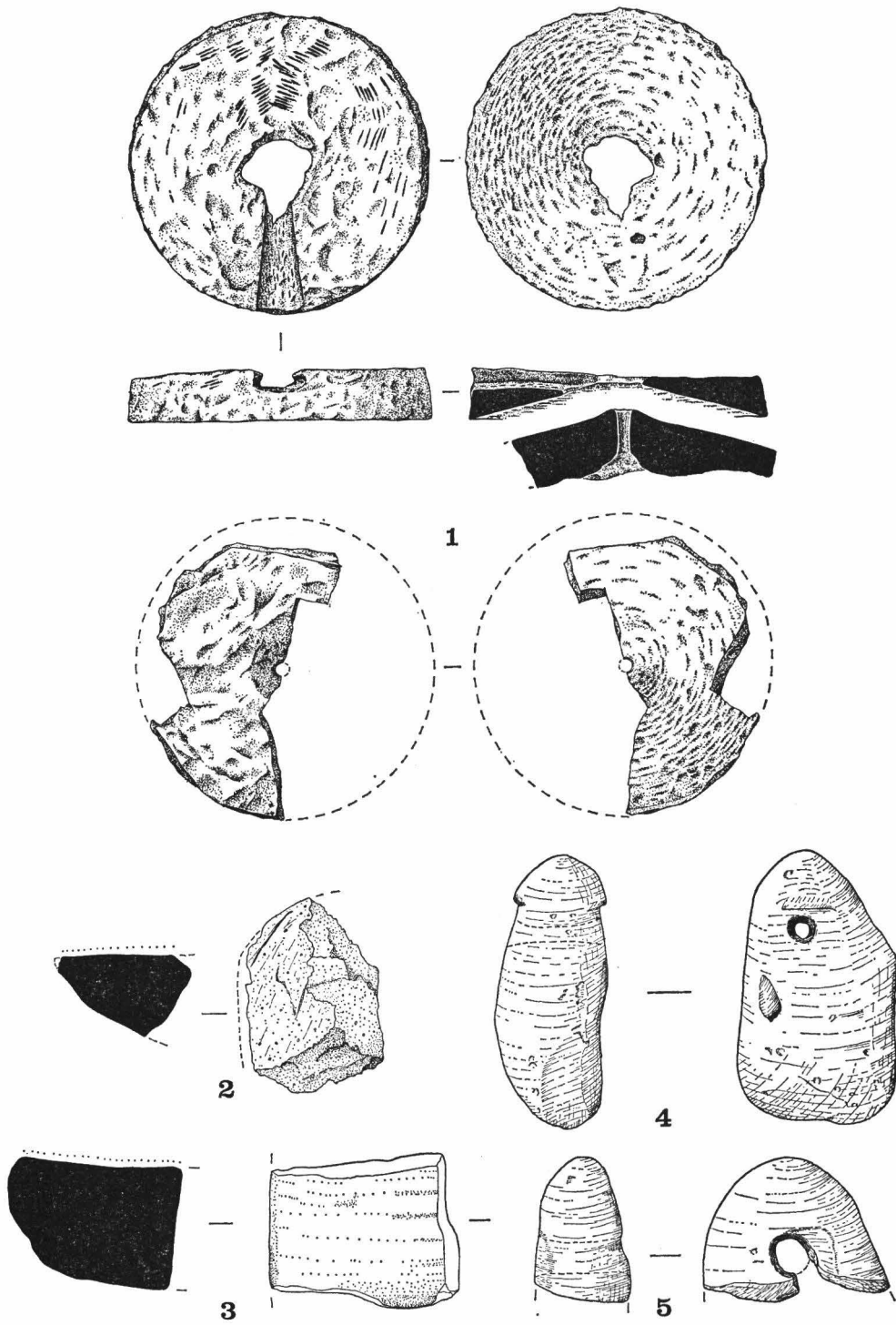


FIG. 59. Stone objects 1-5. Scale: 1, $\frac{1}{4}$; 2-5, $\frac{1}{2}$

Chalk Weights

4. A large chalk weight with an hour-glass perforation, weight 723 grams. Seen from the side the object has a slightly bulbous top which ends just above the perforation in a ridge. The surface has been rounded and smoothed, and this has obliterated all but the slightest traces of surface pitting caused by marine molluscs. The traces do however show that the boulder of hard grey chalk from which it was made was collected on the seashore. Probably it served as a loomweight. Found in early Iron Age Pit 228.
5. Part of a chalk weight which has broken across the perforation; made from soft chalk like that encountered on the site. From late Iron Age Pit 906.
6. A large triangular-shaped chalk weight broken at one end and weighing 1.8kgs. It appears originally to have been worked into an artifact, but has been subsequently attacked by boring molluscs. One species, probably the piddock, has produced two intersecting perforations, and another has made numerous small pits all over the surface. Possibly it was a net weight. Found in late Iron Age Pit 877.
- Not illustrated.* A fourth large chalk weight, from Pit 730, is in the possession of Mr. D. Thomson.

Other Chalk Objects

7. An irregularly shaped lump of hard grey chalk, ? Melbourne Rock. One side was smoothed flat; on the other are a series of grooves, parallel in places but elsewhere seemingly random. It looked almost as if it had been used as a whetstone, if so the raw material is most unusual. From late Iron Age Pit 920.
8. A very neatly carved drum of local chalk, weighing 35.4 grams; possibly a counter or gamepiece. Found in Iron Age Pit 787.
9. Part of a carved piece of chalk, two remaining smooth surfaces. On one of them there were two carefully incised lines which converge, there were also slight grooves at right angles to the surviving edge. Use unknown but possibly part of a figurine. From the enclosure ditch layer 1.
10. Chalk spindle whorl weighing 35 grams, rather rectangular in shape with a biconical section and hour-glass perforation. From the enclosure ditch, layer 4.
11. Just over half of a circular spindle whorl broken across the hour-glass perforation. Estimated weight when complete 113 grams. On both surfaces were concentric grooves made by a rotating object indicating that it may not have functioned as an ordinary spindle whorl. Found in the enclosure ditch, layer 1.
12. About half of a large discoidal weight, which has broken across the perforation. The hard chalk from which it was made is unlikely to have come from the site, and small pits on the surface may have been produced by boring molluscs. Its estimated original weight is 227 grams. Possibly it was a spindle whorl despite being rather larger than normal. Chalk discs of similar size are reported from Maiden Castle.¹ Found with early Iron Age burial 1.

Not illustrated. Two chalk spindle whorls, one from Pit 895, layer 2, the other from the top soil.

Pebble Tools

13. A pebble of ? Eocene silicified sandstone used as a hammer as shown by zones of battering on both ends. From the enclosure ditch, layer 2.

Not illustrated. Two quartzite pebbles similar to the above, used as hammers. From the enclosure ditch, layer 2.

14. A flint beach pebble, on one surface a cross has been made with an iron object. It might have been used in a game or accidentally produced by the passage of a plough. If so this happened in prehistory for the cross predates a calcareous tufa on the surface, and the object was stratified in the enclosure ditch, layer 1b.

15. Quartzite pebble with a rather flat and polished face produced by use as a rubber. The article on which it was used had an iron content which imparted a very slight red-brown stain on the polished surface. One possible use is as a pot burnisher, if so it was used on the iron-oxide rich fabrics 3b and 3c. From early Iron Age Pit 228.

16. Part of an object of fine grained sandstone, perhaps Lower Greensand. A curved surface was preserved, and this showed signs of abrasion consistent with use as a pestle. From the enclosure ditch, layer 1.

Not illustrated. Seven stones which were used as rubbers. Two were sarsen and there were individual examples made from the following: Lower Greensand, Upper Greensand, Eocene Sandstone, ferruginous sandstone and a foreign stone sedimentary pebble. All from the ditch.

17. A siliceous foreign pebble, on both sides were distinct scratch marks produced by abrasion. On one side these are along the axis of the pebble and in a narrow zone at right angles to the edge. On the other side all the marks are at right angles to the axis, and there are patches of iron staining showing it was a whetstone used on iron tools. From Pit 920.

18. Fragment of a foreign stone pebble, used as a whetstone and stained by iron oxide. From Pit 920, layer 7.

19. Fragment of a foreign stone pebble. A small slightly dished area exhibited slight polish, perhaps where it was habitually held. On the edge was iron oxide staining showing use as a whetstone. From Pit 920.

20. A foreign stone pebble slightly rubbed on one surface, probably used to burnish pottery. From Pit 920, layer 7.

A similar extensive use of foreign pebbles from the foreshore as both hammers and whetstones was apparent in the Glastonbury Lake Village.² There, as here, few examples showed any signs of forming or preparation before use. Similar pebbles were still being used as whetstones and hammers in the Romano-British period (see p. 183).

¹ R. E. M. Wheeler, 1943, op. cit., p. 294, and Plate XXXIII.

² A. Bulleid and H. St. George Gray, *The Glastonbury lake village*, vol. II (1917), pp. 621-622. Others come from Mount Caburn and are in Barbican House Museum, Lewes. Future

studies of such pebbles should evaluate the possibility that some, particularly in the later contexts, may be from wheel ploughs: see G. Lerche, 'Pebbles from Wheelploughs,' *Tools and Tillage*, vol. 1 (1968-71), p. 150.

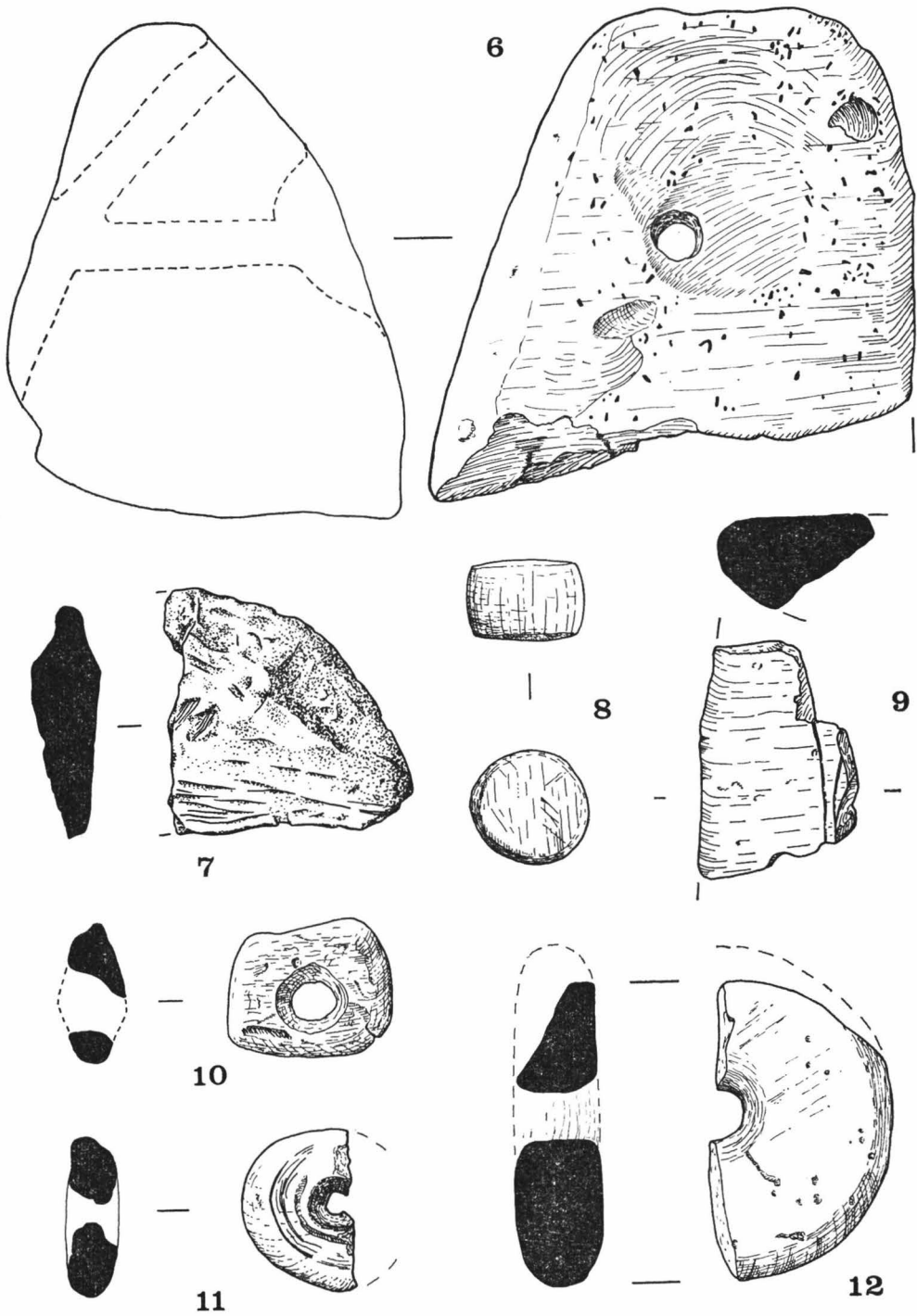
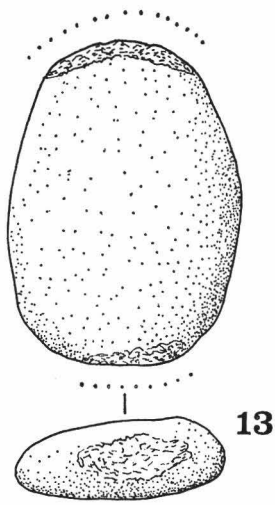


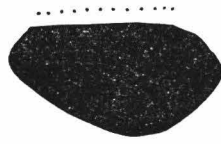
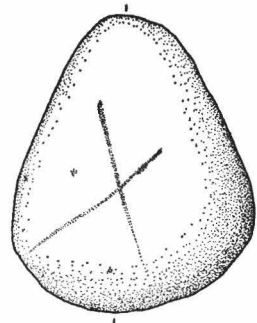
FIG. 60. Stone objects 6-12. Scale $\frac{1}{2}$



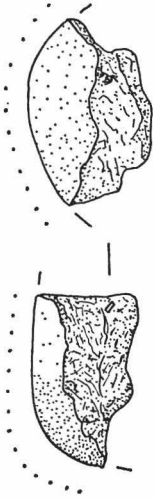
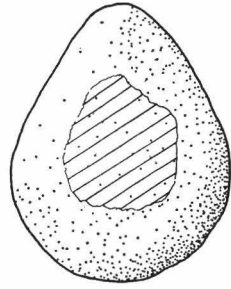
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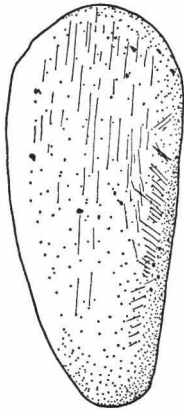
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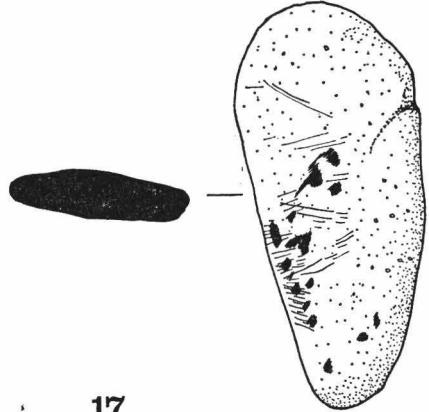
15



16



17



18




-  Utilised or Polished surface
-  Iron oxide stain
-  Polished area

FIG. 61. Stone objects 13-18, with a key to wear traces. Scale $\frac{1}{2}$

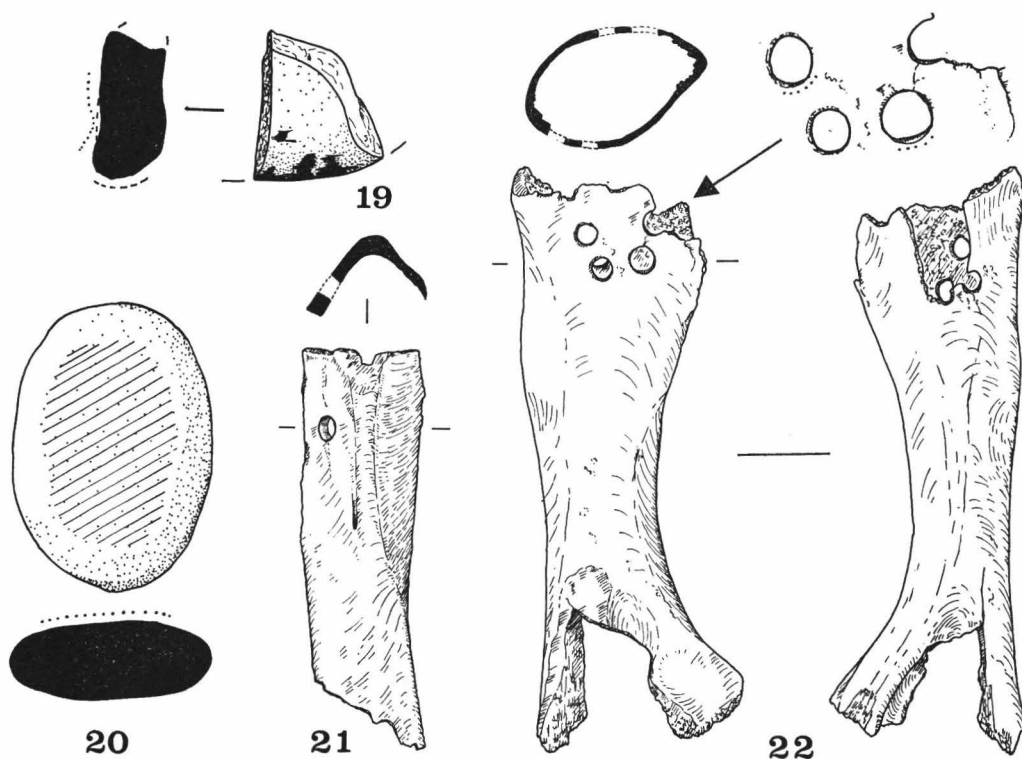


FIG. 62. Stone objects 19 and 20; bone objects 21 and 22. Scale $\frac{1}{2}$

BONE OBJECTS

21. Part of a pig's tibia with one cut end and a break at the other end. Near the cut end was a perforation which shows no wear on its edge; the angle of the bone at the cut end has been slightly bevelled. Only about half the circumference of the bone remains and the object's function is obscure; it might be the proximal end of a weaving comb. Several cut and perforated long bones very similar to this were found in the Glastonbury and Meare lake villages.¹ Found with early Iron Age burial 1.

22. A pig's humerus broken at both the distal and proximal ends. Near the proximal end are four perforations on one side and on the opposite side two (remaining). Two opposite members of the group of four holes had traces of wear on one side, as indicated on the drawing. No other parts of the bone show obvious signs of utilisation. Its function is unknown but similar objects were found at Glastonbury.² From the enclosure ditch, layer 2a. *Not illustrated.* A horn core of *Bos* sp. neatly sawn off at the proximal end and broken at the tip, possibly used as a handle. From Pit 228.

METAL OBJECTS

23. A thin, slightly domed, metal disc, the edges of which were thin and badly preserved. The convex surface had traces of a greyish metal coating. Slight bumps, shown on the drawing, probably represent the centres of corrosion which has destroyed much of the surface. Faintly visible on the surface were indications of curved ridges, perhaps the remnants of relief decoration. Found with the disc was a fragment of a second object with a similar grey surface coat on which were two distinct ridges, possibly part of a curvilinear design. Dr. Nigel Seeley kindly agreed to examine the two objects using X-ray fluorescence on an unprepared surface. The disc could only be analysed in the area where grey metal was exposed, and this was shown to be a tin bronze with somewhere in the region of 40% tin. However the non-destructive method used was not particularly quantitative. The smaller piece of greyish metal was shown to be a high tin bronze which did not contain significant quantities of

¹ A. Bulleid and H. St. George Grey, 1917, *op. cit.*, pp. 415-419, particularly Plate LXIII, Nos. 198, 177; and H. St. George Gray and M. A. Cotton, *The Meare lake village*, vol. 3 (1966), pp. 313-314.

² A. Bulleid and H. St. George Gray, 1917, *op. cit.*, pp. 415-419, particularly Plate LXIII, No. B.217.

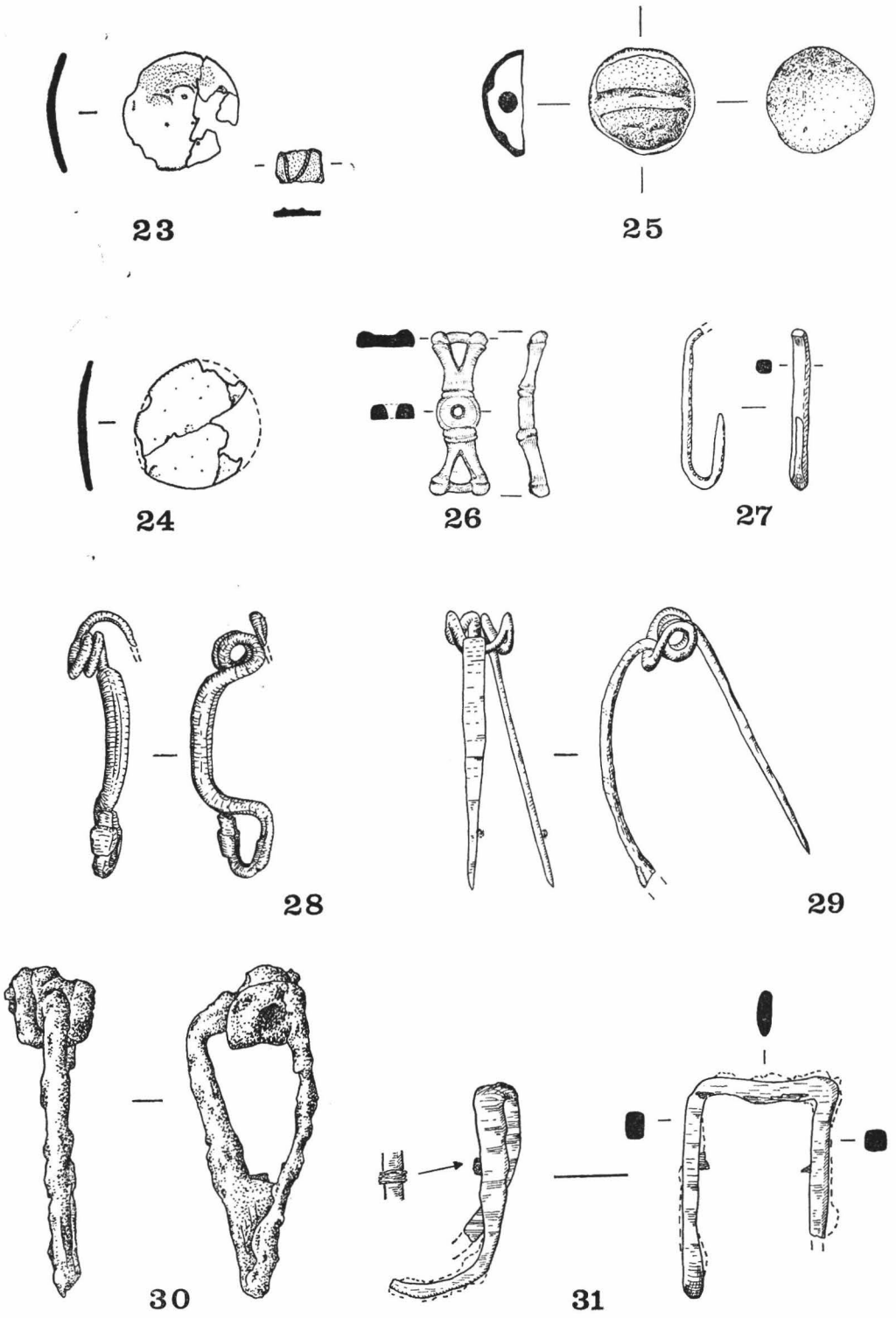


FIG. 63. Metal objects 23-31. Scale: all at 1/1 except 26 and 31, $\frac{1}{2}$

other elements. Again exact quantitative measurements are not available but the likely composition is approximately 50% of each metal. The identification of these two objects as high tin bronzes suggested that they may have been fragments of potin coins, which are known to have a similar composition,¹ and to exhibit a surface design comparable to that on the smaller object. I am grateful to Dr. J. P. C. Kent and Dr. M. Spratling of the British Museum for examining the objects and confirming the possibility that they are potin coins; certainty is however not possible in view of their poor condition. From the burnt clay in late Iron Age Pit 716.

24. A thin slightly domed bronze disc, similar to No. 23, but with no trace of tinning and no indication of decoration. It was corroded and the edges damaged. From Pit 15.

25. A bronze stud or button with a hollow back across which is a circular cross-bar. Comparable examples are known from early Iron Age contexts; the settlement at Staple Howe, Yorkshire,² dated to the fifth and sixth centuries B.C., had 120 examples. Several were also found with Halstatt burials at Court-Saint-Etienne, Belgium, dating probably to the seventh century B.C.³ Their function is not known with certainty but at the latter site it was suggested that they may have been ornaments on horse harness. Found in hearth 671 in the area of early Iron Age settlement.

26. Submitted to Miss J. Foster, B.A., who writes as follows:—

A bronze ornament in excellent condition. It was cast in one piece, resulting in a slightly asymmetric article and finished by filing. Some of the filing marks can still be seen on the back. Unlike the front, which has curved and polished surfaces, the back is flat and undecorated and therefore was probably not meant to be seen. It is likely that the object was designed for attachment, perhaps to a belt; it is ornamental rather than functional, and unlikely to be part of a buckle. The filing marks on the back show little wear. The hole through the centre on the other hand is worn smooth; the ornament was perhaps attached by the centre rather than the triangular ends.

The various British parallels for it presuppose an Iron Age date.⁴ One similar bronze object was found at the late Iron Age site of Charleston Brow, Sussex, only 5km. from Bishopstone.⁵ The object was described in the report as a link to join two parts of a belt at the back. A fragment of very similar design came from Glastonbury.⁶ Bulleid and Gray referred to it as part of a mirror handle, because fragments of bronze sheeting and rivets were attached to it. In view of the strong profile curve of the Bishopstone example, it is unlikely that this is a mirror handle. Another less elaborate example from Maiden Castle⁷ was described as a strap union; this too may have been used for a belt. The Bishopstone object is not strictly stratified, having been found in the ploughsoil on top of the lynchet (Fig. 109), but consideration of the parallels mentioned above leads to the conclusion that it was made and abandoned during the Iron Age or early Roman period. The lack of wear suggests that it was virtually new when lost.

27. A length of bronze, rectangular in section and pointed at one end where it was bent round in the fashion of a hook. It was also bent at the other end where there was a break. One possibility is that it served as a fish-hook. From the ditch, layer 2.

28. A bronze brooch⁸ of D-shaped profile with a long, low bar and a short catch plate. Running down the bow is a small central rib; there may have been other decoration but one cannot be certain. The spring has two turns and it is then broken, probably what remains is about half of a non-functional skeuomorphic spring in the middle of which was a pivoted pin. The diagnostic features of this brooch typify a group of insular La Tène fibulae recently discussed by Professor F. R. Hodson, a close parallel for this example is brooch B from Hammersmith.⁹ The continental La Tène I brooches to which this is related are of fourth century date, but this insular British type might be fourth century or later. Strictly speaking the brooch was unstratified having been found amongst spoil taken from the enclosure ditch. It was however enclosed in a chalky material which showed that its origin was almost certainly layer 2.

29. A bronze brooch which was examined by the late Mr. M. R. Hull who stated that it was a Nauheim derivative type which vanished from use in Britain before A.D. 70.¹⁰ A terminus ante quem for the type in Britain is likely to be the mid first century B.C.¹¹ From Pit 906, layer 1.

Not illustrated. Part of a bronze pin shaft 12mm. in length with a circular cross section of diameter 3mm. Possibly a fibula pin. From Feature 618.

30. A corroded iron fibula made from a length of iron wire with a relatively high arched bow of round cross section; a triangular, probably solid, catchplate, though the latter must be uncertain in the absence of an X-ray. The spring is bilateral with, probably, four turns. The profile is similar to brooches of the so called Colchester type, and is likely to have been produced in the hundred years preceding the conquest. A similar but incomplete example comes from the Caburn.¹² From Pit 920, layer 3.

¹ D. F. Allen, 'British potin coins: a review,' in M. Jesson and D. Hill (eds.), *The Iron Age and its Hill-Forts* (1971), pp. 127-154.

² T. C. M. Brewster, *The excavation of Staple Howe* (1963), pp. 114-116.

³ M.-E. Mariën, *Trouvailles du Champ d'Urnes et des tombelles Hallstattiennes de Court-Saint-Etienne* (1958), pp. 34, 72 and 237.

⁴ For similar objects not specifically listed see:— Hunsbury, Northants. *Archaeological Journal*, vol. 93 (1936), Plate IIB; Bury Hill Camp, Hants., *Antiquaries Journal*, vol. 20 (1940), p. 121; Arundel, Sussex, *S.A.C.*, vol. 64 (1923), p. 201; Letchworth, Herts., *Proc. Society of Antiquaries*, vol. 26 (1913-14), p. 240.

⁵ W. J. Parsons and E. C. Curwen, 'Charleston Brow, near Fittle Beacon,' *S.A.C.*, vol. 74 (1933), Fig. 1, 168.

⁶ A. Bulleid and H. St. George Gray, *Glastonbury lake village*, vol. I (1911), Plate XLII, E1. See also *ibid*, Plate XLIV, E262.

⁷ R. E. M. Wheeler, 1943, *op. cit.*, Fig. 88, 4.

⁸ I am grateful to Professor F. R. Hodson and the late Mr. M. R. Hull for information on this brooch.

⁹ F. R. Hodson, 'Three Iron Age brooches from Hammersmith,' in G. de G. Sieveking (ed.) *Prehistoric and Roman Studies* (British Museum—1971), pp. 50-57.

¹⁰ C. F. C. Hawkes and M. R. Hull, *Camulodunum* (1947), pp. 308-313.

¹¹ See D. W. Harding, 1974, *op. cit.*, pp. 216-218.

¹² E. C. Curwen, 'Excavations in the Caburn, near Lewes,' *S.A.C.*, vol. 68 (1927), pp. 10-12, Plate IV, No. 20.

31. An iron fitting or clamp originally fashioned from a roughly square bar. The bar was bent in two places so as to form three sides of a rectangle, on the middle side the bar was hammered into an oval shape. The ends of both the other sides were hammered round as the side view shows. It was a fitting on a wooden article, impressions of the cellular structure of wood have been preserved by decay products of iron. The impressions were present on all three sides, and in each case the wood grain was on the same axis which was parallel to the top of the object. Part of a similar object comes from the Romano-British enclosure ditch (32). This example was from Pit 877. *Not illustrated.* An iron nail 83mm. long from Pit 895.

GENERAL DISCUSSION OF THE IRON AGE OCCUPATION (Fig 64)

Three main phases have been identified in the life of the Iron Age settlement. The first, unenclosed phase, could only be isolated where features were cut by the later enclosure ditch and, with less certainty, where they lay outside the enclosure. Pottery fabrics and vessel forms from the pre-enclosure phase were essentially the same as those from the enclosure, and we may postulate that the two phases represent a continuous development towards an enclosed form of settlement. Attempts to date these developments must rest very largely on the associated pottery, but the close dating of many locally produced wares is impossible as was shown by the continuance of the same vessel forms throughout the life of the early Iron Age settlement. The earliest Iron Age pottery seems to be related to Professor Cunliffe's Ultimate Deverel-Rimbury and Kimmeridge-Caburn groups which, he reports, are frequently associated on Sussex sites.¹ This might indicate that the settlement began as early as the sixth century B.C. An even earlier date is suggested by thermoluminescent dating of two sherds in fabric 2a from layer 1 of the enclosure ditch. The average T.L. age of these was 950 B.C. \pm 300 years. This layer was by no means the earliest Iron Age context and it should be stressed that the total ceramic assemblage from the top of the ditch would normally be dated a good deal later, for although the bulk of the pottery in this layer was in fabric 2a, it was associated, here and in the pits, with finer burnished wares, often with pedestal bases. The latter seem likely to belong principally to the fourth and third centuries B.C. A single radiocarbon date of 270 \pm 80 b.c. (Har—1086) has been obtained from Pit 11 in the area of early Iron Age settlement.² If it is accepted that a bank stood on the inside of the ditch, then this pit and its neighbour, No. 15, may have postdated the functional life of the earthwork. Certainly occupation continued after the ditch had become virtually full, as the accumulation of the domestic debris in its top layer showed. The early Iron Age settlement did not however continue into the period when 'saucepan pots' were an important vessel form, as they seem to have been between the third and first centuries B.C.³ By this time the main locus of settlement had shifted to the northern part of the former enclosure. The earliest features in this area were pits 787, 790, 791 and ditch 868. Presumably if the site was continuously occupied in this phase then the main settlement area lay outside the excavations. The final phase of the Iron Age settlement was much better represented. Pottery of this period was ornamented with shallow tooled lines in eyebrow patterns, occasionally augmented by stamps and finger impressed raised bands. The cultural affinities of this pottery, which were clearer than those of any of the preceding vessel types, were with Cunliffe's Eastern Atrebatian types which he has dated to the century before the conquest.⁴

¹ B. W. Cunliffe, 1974, *op. cit.*, p. 33.

² Attention is drawn to the need to calibrate radiocarbon dates in order to determine calendar dates: see G. J. Wainwright and V. R. Switsur, 'Gussage All Saints—a chronology,' *Antiquity*, vol. 50 (1976), pp.

32-39; in particular the Iron Age calibration chart, Fig. 1.

³ B. W. Cunliffe, 1974, *op. cit.*, p. 42.

⁴ B. W. Cunliffe, 1974, *op. cit.*, pp. 89-96.

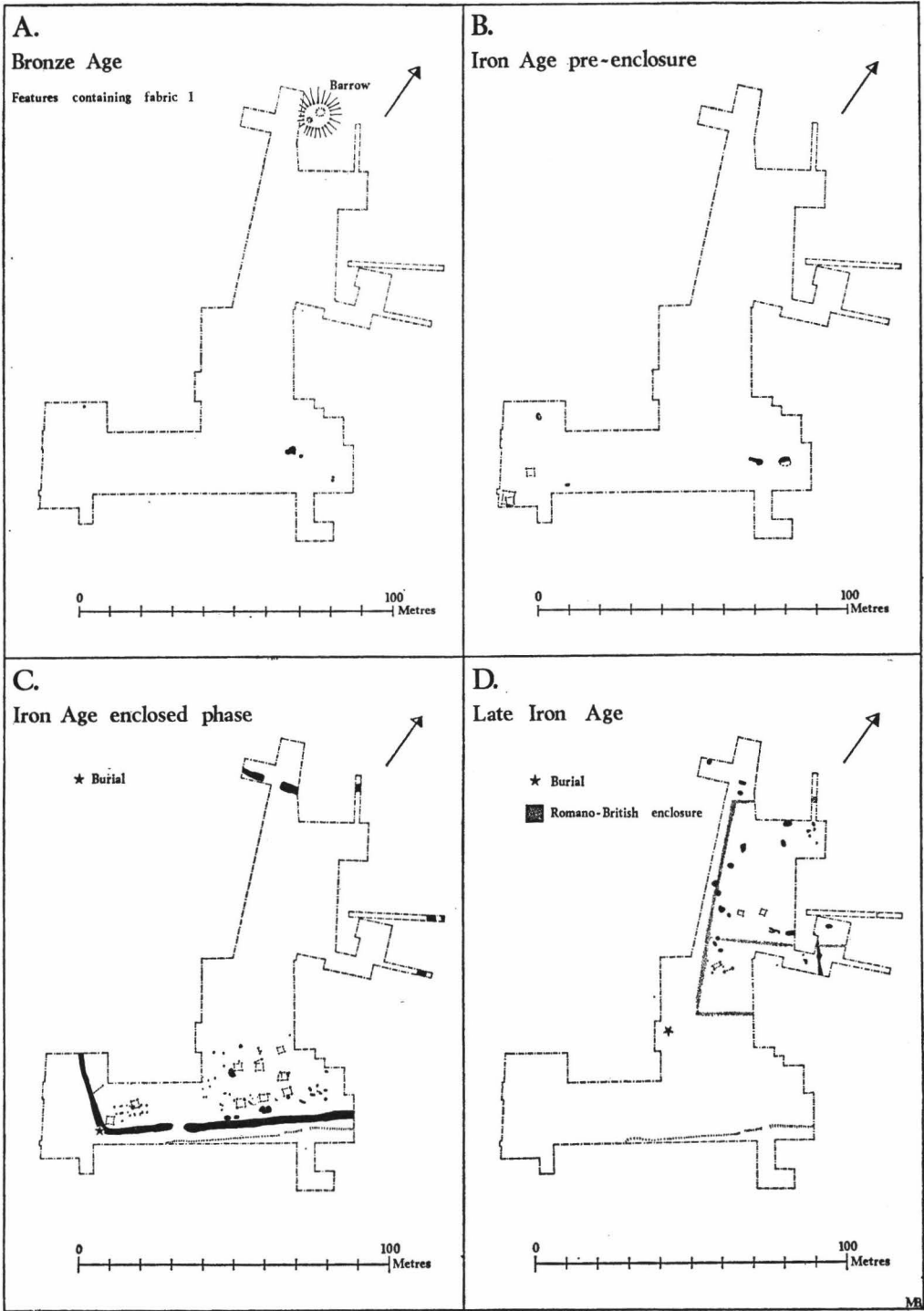


FIG. 64. Phase plans showing the development of the Iron Age site

Datable metalwork, though rare, was consistent with the chronology advanced on the basis of pottery. From the early settlement came the bronze stud and La Tène 1 fibula. Features in the late settlement produced a Nauheim derivative brooch (c. 50 B.C.-A.D. 70); a 'Colchester type' iron fibula, of a type made in the hundred years preceding the Roman conquest; and fragments of two possible potin coins. The production of the latter, apparently in North Kent, seems to have extended from early in the first century B.C. until the conquest.

Occupation seems to have taken place on the site during each of the locally represented phases of the Iron Age. We should remember however that at present the dating of material remains belonging to this period is so coarse that a gap of a century might well go undetected. It is therefore impossible to tell with certainty whether the change in settlement location between the earlier and later Iron Age reflects a hiatus or a continuous development. If the latter it might simply be the result of moving away from a part of the settlement which had become polluted by domestic refuse. Similar occasional changes in the locus of settlement seem to have taken place at Park Brow.¹ However the change does seem to have been accompanied by some variation in the character of the features as the following table will show:—

	Pre-enclosure	E.I.A. enclosure	Late Iron Age	Total
Storage pits	1	3-4	13	17-18
Other pits	3	1-2	3	7-8
4-post structures	2	10	2+1 rectangular	15
6-post structures	1	1-2	—	2-3
2-post structures	1	5	2	8

A situation in which there were a much smaller number of pits than post structures during the early phase was reversed in the later phase. Similarly a paucity of pits was apparent during the early Iron Age at Muntham Court, Findon, where only one pit was found in excavations which produced over 900 postholes.² Taken at face value these figures might indicate that the pits and four-post structures successively fulfilled the function of, for instance, cereal storage but no doubt other, less simplistic, interpretations are possible.

Environment and Economy

Our knowledge of the local environment during the Iron Age is derived largely from studies of the land molluscs by T. P. O'Connor and K. D. Thomas. By this period there were no indications of the shade-loving species which were present in some Neolithic samples, the hillside had been fully cleared and was given over to agriculture. Mollusca from the Iron Age enclosure ditch and Pit 11 indicated very dry open conditions, as we might expect from the presence of fields outside the enclosure on at least two sides. Excavation of a positive lynchet on the south side of the hill showed that it was forming during the Iron Age, and that here too there was a mollusc fauna of dry and open conditions.

Carbonised seeds provide some indication of the crops and weeds that grew in the surrounding fields. A particularly full picture from the early Iron Age is provided by two samples from Pit 11. In both of these the main species were spelt (*Triticum spelta*), which accounted for 87%

¹ G. R. Wolseley, R. A. Smith and W. Hawley, 1926-7, op. cit., pp. 1-40.

² G. A. Holleyman, 'Muntham Court,' in S. Frere (ed.), *The Problems of the Iron Age in Southern Britain* (1961), p. 20.

and 92% of the seeds in each sample. There was also a small proportion of six-row barley (*Hordeum vulgare*) at between 3% and 8%. Other cultivars, represented by single identifications, were oats (*Avena* sp.) and peas (*Pisum* sp.). Among the crop seeds were those of weeds found on cultivated and waste ground, poppy (*Papaver* sp.) and Common Cleaver (*Galium aparine*). Two other early Iron Age samples, those from postholes 505 and 522, consisted entirely of weedy species to the total exclusion of well established crop plants. However the proportion of Fat Hen (*Chenopodium album*) in 522 was such that one suspects it may have been cultivated or collected as it was elsewhere in prehistory.¹ The remaining species from these two samples, Common Orache (*Atriplex patula*), Black Bindweed (*Bilderdykia convolvulus*) and Common Knot-grass (*Polygonum aviculare*), might indicate the burning of weeds collected from cultivated ground, or the burning of vegetation prior to the construction of a building. For the later Iron Age we have to rely on a small number of seeds from Pit 920, layer 7. The only crop represented was six-row barley which was associated with the following weed species: Corn Gromwell (*Lithospermum arvense*), Common Cleaver and a member of the cleaver family (*Galium* sp.). Further evidence of arable agriculture is provided indirectly by storage pits and probably also by four- and six-post structures. Fire cracked flints and clay ovens have been mentioned in connection with their probable use for corn drying and the final stages in corn preparation are represented by saddle and rotary querns.

In discussion of the Iron Age enclosure it has already been suggested that it represents the integration of the arable and pastoral aspects of the economy. Abundant evidence of pastoralism was found in the form of animal bones. The two chief species were cattle and sheep/goat, but there were significant proportions of horse and pig whilst other domestic species were dog, cat and domestic fowl (*Gallus* sp.). Throughout the period cattle would have produced much the greater meat weight, but there is some evidence that sheep increased in relative importance towards the end of the Iron Age.

Despite the fact that these domestic species accounted for the vast majority of animal bones some variety was given to the diet by hunting and collecting. Products of the chase were red deer, roe deer and fox. Fowling was indicated by bones of gull (*Larus* sp.) and swan (*Cygnus* sp.), the clay sling-shot providing ideal missiles for this purpose. Nor did these people ignore the rich food potential of the nearby marine environment. The larger mammals such as seal and whale were taken and fishing was practised, some of the larger chalk weights may indeed have functioned as net weights. The most extensive exploitation of the seashore was however of its molluscs. The main species collected were mussel, limpet, oyster and common periwinkle; crabs were also collected.

It would be wrong however to think of these people simply as husbandmen who occasionally practised hunting and collecting. Their economy was much more complex and integrated than that and involved a series of productive and craft activities, certain of which were a natural development of farming. Some of the sheep were obviously kept for wool and a cottage textile industry is attested by spindle whorls and numerous loomweights. Cheese was also probably made and Vessel 82 had perforations in the base which might have served for taking off the whey. Other activities were based upon resources which occurred quite naturally in the site's environs. One such was clay, the most important outcrop being on Castle Hill, Newhaven. Miss Hamilton has shown convincingly that a large proportion, particularly of the early Iron Age pottery, was

¹ J. M. Renfrew, 'Palaeoethnobotany' (1973), p. 170.

made from this Eocene clay; furthermore Eocene fossils were present in both the pottery, daub and fired clay objects. In view of the fact that this clay was transported to the site in order to make ovens, and possibly to line pits, it is highly likely that many of the pots and clay objects were made on or near the site. If so, this might account for the large quantities of material found in the final layer of the enclosure ditch. Miss Hamilton's mineralogical analyses have also shown that other locally available types of clay such as Clay-with-Flints and riverine clay were used for pott- ing. A particularly interesting use of the Eocene clay was in the production of briquetage. The proximity of the flooded Ouse valley would have made this site a suitable one for salt produc- tion. Obviously this was a resource only available to sites near the coast, and as such it must have been a potentially exchangeable product.

This introduces us to the question of these people's relationships to their neighbours who, as our references to Professor Cunliffe's pottery scheme indicate, were using vessels with certain stylistic similarities. It has not yet been possible to compare the pottery fabrics on this site with those on others, but observation has shown that many of Miss Hamilton's fabrics occur on other sites in this part of the South Downs. By no means all of the Bishopstone pottery was made on the site, of local clays, indeed as the Iron Age progressed local wares seem to have declined in importance. The mineralogy of many of the vessels studied has shown that they were made from clays which outcrop at least 30km. north of the site in the High Weald. We must assume therefore that these came as finished products by way of trade or exchange. As for the better known items sometimes traded during the late Iron Age, such as Gallo-Belgic wares and amphorae, none have come from securely stratified pre-conquest features.¹ This is in contrast to the inter- esting late imports found on a similar small farming site at Owslebury, Hampshire.² Nor was there very much metalwork at Bishopstone; only seven bronze and three iron objects and frag- ments of two possible potin coins. Small amounts of iron forging slag and bronze melting slag were found, but insufficient for us to assume that metal was worked on the site at any time during the Iron Age.

IRON AGE SETTLEMENT PATTERN (Fig. 65)

Field surveys have not yet added, in any major way, to the Iron Age sites recorded by previ- ous archaeologists working in this area. Rather than indicating an originally sparse settlement pattern this most probably reflects the fact that the favoured settlement areas have yet to be scrupulously searched. The best known sites in the region are of the 'hillfort' type, Castle Hill, Newhaven; Seaford Head; Mount Caburn; and neighbouring Ranscombe. The first of these has produced a considerable quantity of finds indicating occupation throughout the Iron Age,³ whilst the second has only been the subject of a small nineteenth century excavation which leaves unresolved the question of whether it was ever occupied.⁴ Mount Caburn, by far the most intensively studied of the four sites, has been shown to have developed from a palisaded farm into a fairly heavily occupied hillfort centre.⁵ Ranscombe did not have a complete defended

¹ The unstratified pieces of this material all seem likely to be of post-conquest date: see report by Mr. Green on p. 152.

² J. R. Collis, 'Excavations at Owslebury, Hants.: An interim report,' *Antiquaries Journal*, vol. 48 (1968), pp. 18-31.

³ C. F. C. Hawkes, 1939, *op. cit.*, p. 291.

⁴ J. E. Price, 'On excavations in the camp, the tumulus and the Romano-British cemetery, Seaford, Sussex,' *S.A.C.*, vol. 32 (1882), pp. 167-200.

⁵ E. C. Curwen *The archaeology of Sussex* (2nd ed. 1954), pp. 218-268; and references therein.

Distribution of Iron Age Finds

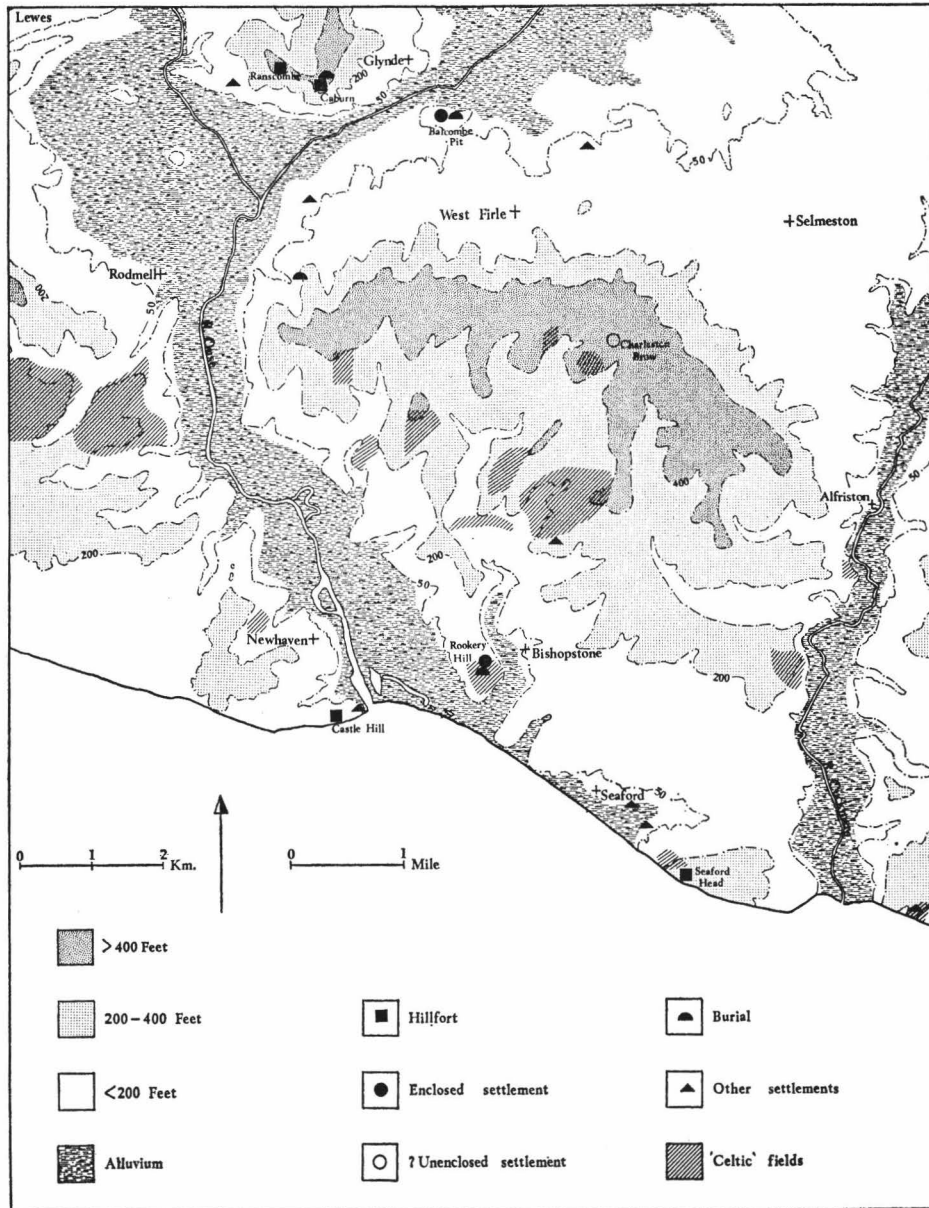


FIG. 65. The distribution of Iron Age finds in the area around the site

circuit and might better be seen as a timber-laced promontory dyke.¹ Situated between these major sites and seemingly on rather lower ground were a number of smaller, presumably farming, settlements, the most extensively excavated of which is the Rookery Hill site. A very similar and also enclosed site has been partially excavated at Balcombe Pit, Glynde and was occupied during both the early and later Iron Age.² Other such settlements are likely to have been unenclosed as was Bishopstone in the later phase: a possible example is the late Iron Age site at Charleston Brow.³ To these three excavated sites we may add eight others, the locations of which are suggested by finds of Iron Age pottery.⁴ The experience of Bishopstone indicates that some of the field systems in this area may have had Iron Age or even earlier origins, as did several of the spur top Romano-British settlements which have been mapped elsewhere.⁵

¹ G. P. Burstow and G. A. Holleyman, 'Excavations at Ranscombe Camp, 1959-60,' *S.A.C.*, vol. 102 (1964), pp. 55-67, and R. Bradley, 1971, *op. cit.*, pp. 71-83.

² G. P. Burstow and N. Norris, 1958-62, *op. cit.*, pp. 307-309.

³ W. J. Parsons and E. C. Curwen, 1933, *op. cit.*, pp. 164-180.

⁴ West Dean, Short Brow (TV528974); Seaford, Fitzgerald Avenue (TV 489984); Seaford, Steyne Road; South Heighton, Well Bottom (TQ 477024); Newhaven Fort (TQ 449002); West Firle, Newhouse Farm (TQ 481081); Beddingham, The Lay (TQ 443070); Southerham (TQ 431090).

⁵ M. G. Bell, 1976, *op. cit.*, Fig. 1.

THE ROMANO-BRITISH PERIOD

The features of Romano-British date were in the north east corner of the excavations, exactly the same area where all the late Iron Age features were found. Indeed this essentially agricultural settlement seems to have continued from one period to the next with little change. In addition a noticeable nucleation of Romano-British pottery occurred in the top soil at the east corner of the excavation; no features of the period were found in that part of the site but there may have been occupation outside the area cleared. Two fairly distinct phases are discernible; the earliest, dated to the late first and early second centuries A.D., is represented by a rectangular enclosure, a number of pits and a few postholes. With the exception of one pit and a posthole all these features were inside the enclosure. By the late second century the enclosure ditch had become silted and a reduced level of activity during the third century is suggested by a small number of sherds and a single pit. It is this period of more restricted occupation which separates the two phases. During the fourth century, particularly the second half, there was once again fairly extensive occupation represented by pits, postholes and a corn-drying oven.

THE ENCLOSURE (Figs. 2 and 66 and Plate I).

This lay in the northern corner of the early Iron Age enclosure. Its north and west sides were roughly parallel to the corresponding sides of the latter and were between two and three metres inside the early Iron Age ditch. At the time when the Romano-British enclosure was laid out the early Iron Age enclosure must still have been visible, if only as a grassy hollow flanked by a degraded bank. Another feature of the landscape which survived from the early Iron Age period seems to have been the supposed trackway linking the two entrances of the earlier enclosure. We can deduce this because the west side of the Romano-British enclosure lay on a line with them. The enclosed area was in the shape of a parallelogram, with remarkably angular corners for an earthwork. It was divided into two units by a cross ditch. The following data concern the dimensions and area of the enclosure and its component parts:

	N-S dimension	E-W dimension	Area in hectares	Area in acres
Total enclosed	69.4m.-70m.	50.8m.-51m.	0.35	0.85
North part	44.4m.-46.4m.	50.8m.-51m.	0.225	0.54
South part	23.4m.-24.6m.	50.8m.-51m.	0.118	0.28

These figures and the plan demonstrate that the enclosure was regularly and carefully laid out. The northern part is almost exactly two thirds of the total area, and the southern part one third; furthermore the southern part is approximately twice as long as it is broad. It seems possible that the people who laid out the area employed fixed measurements and surveying techniques. However no attempt has been made, at this stage, to relate its dimensions to units of measurement known to have been used at that time. As for entrances, no causeways across the outer ditch were found, but some evidence will be considered below which points to an entrance in the north west corner during the later phases of the enclosure's life. The two parts of the enclosure were linked by a 2.2m. wide gap near the west end of the cross ditch.

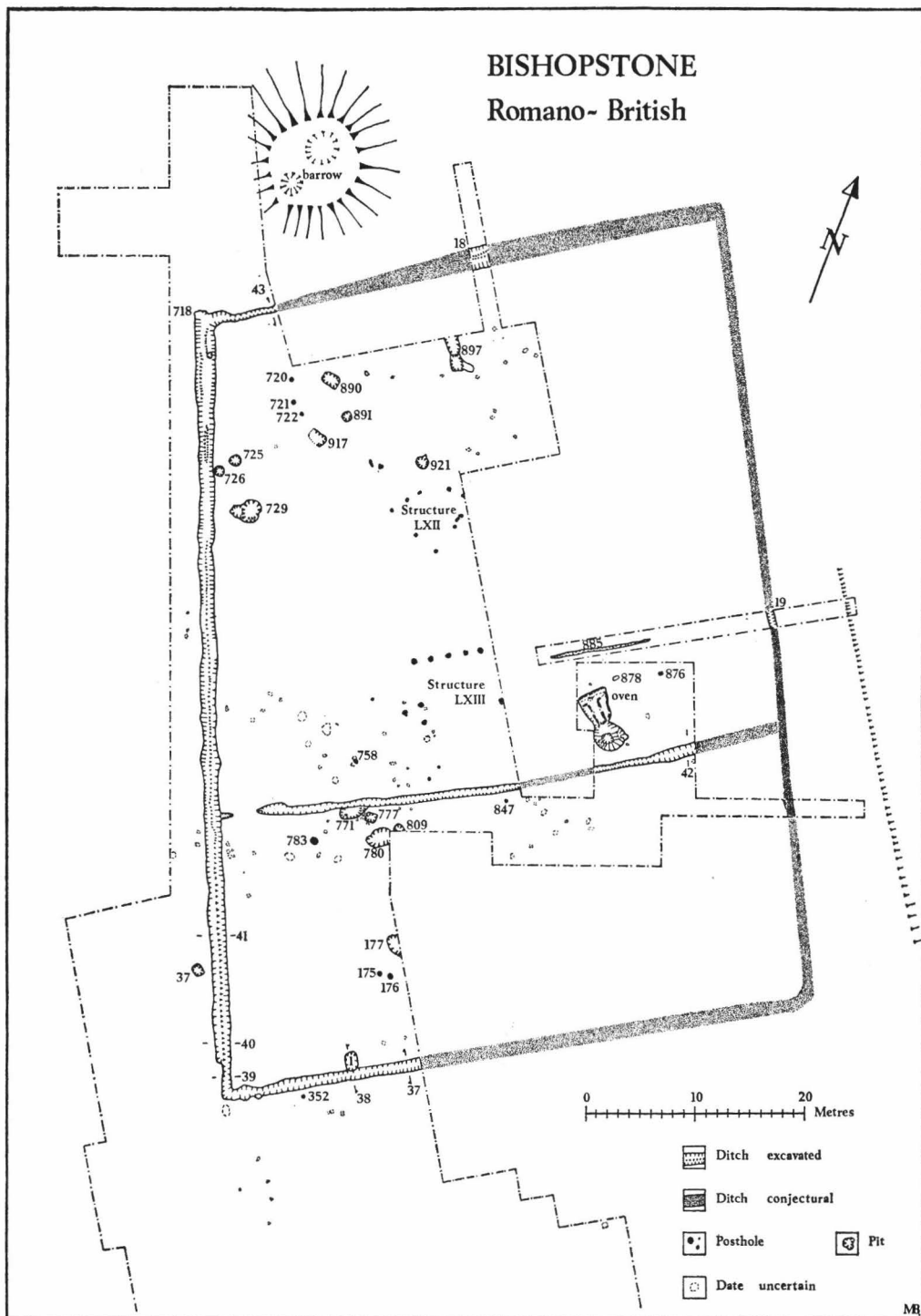


FIG. 66. General plan of the Romano-British site

Like its Iron Age predecessor the Romano-British enclosure had a fairly complicated history, during which the ditch was recut on a number of occasions. The most convenient place to begin describing this sequence of events is on the west side where the ditch was at its widest (Fig. 67) with average dimensions of 1.5m. wide and 0.8m. deep. Latest of the sediments in all ditch sections was soil and small chalk rubble (1) which had slumped into the feature as a result of settling. Below this was a U-shaped recut 0.72m. wide and 0.25m. deep; the fill was of soil, chalk rubble and flints (2), with a band of darker soil marking its base. This contrasted with the underlying predominately chalk rubble layer 3, which filled a flat bottomed recut 1.5m. wide and 0.25m. deep. Finally below this was the primary ditch cut, a narrow steep-sided feature with a flat bottom; its west side had been removed by the recuts, but we can reconstruct the original dimensions as about 0.7m. wide by 0.4m. deep. A basically similar profile and stratigraphic sequence was encountered along almost the entire west side, however it varied a little at both ends. North of Feature 726 the recut, which was filled by layer 2, narrowed and became deeper. The result was a composite profile with a ridge down the middle and a cut on either side. Towards the southern end the recuts became more shallow (Section 40) and eventually disappeared three metres from the south west corner (Section 39). Only the deeper primary ditch turned the corner to form the southern side of the enclosure. However some sections on this side (e.g. 38) had a slight slope on the outside which might be interpreted as the last vestige of a recut which had penetrated only a little into the surviving chalk surface.

Two areas of the ditch on the north side were excavated and these showed an interesting contrast. At the west end only the primary ditch turned the corner; it was 0.6m. wide and 0.25m. deep, filled with chalk rubble which was probably deposited not long after it was originally dug (Section 43). The east section (Fig. 29.18) showed a more substantial and complex feature 1.84m. wide and 0.56m. deep. In the centre of the profile was a ridge with two chalk rubble filled ditch cuts on either side. These were truncated by a recut filled with humic soil, and possibly also by a further recut on the south side which contained a greater amount of chalk. The contrast between the two sections is probably explained by the existence of an entrance at the west end of the north side. In this area the ditch seems to have been infilled soon after it was dug and then left as a causeway during subsequent recuts.

For information about the east side of the enclosure we have to depend on two rather narrow trenches in only one of which (Fig. 29.19) was the ditch fully preserved. Here it was 0.3m. wide and 0.35m. deep, remarkably straight sided with a flat bottom and a fill of chalk rubble and soil. In the other section (Fig. 29.20) most of the ditch had been removed by a twentieth century army trench. Neither section gave any reason to believe that the ditch on the east side had been recut. The cross ditch that divided the enclosure into two parts was similar in profile to the primary cut of the main ditch, on average 0.6m. wide and 0.3m. deep. No indications were found of recuts. Logic dictates that a bank was originally associated with the ditch, though no trace of one was found, nor was there any indication as to whether it had stood on the inside or outside of the enclosure.

Among the sediments in the ditch was a profusion of shells, bones, foreign stones, and, in particular, pottery. Three groups of the latter have a bearing on the enclosure's date. Group i comes not from the ditch itself but from feature 718, an oven, the flue of which opened out on to the ditch in the north west corner. Pottery in this feature indicated that the initial laying out of the enclosure was during the Flavian period. The earliest pottery from the enclosure itself was Group ii from the lower fills of the ditch. This dated principally to the last quarter of the

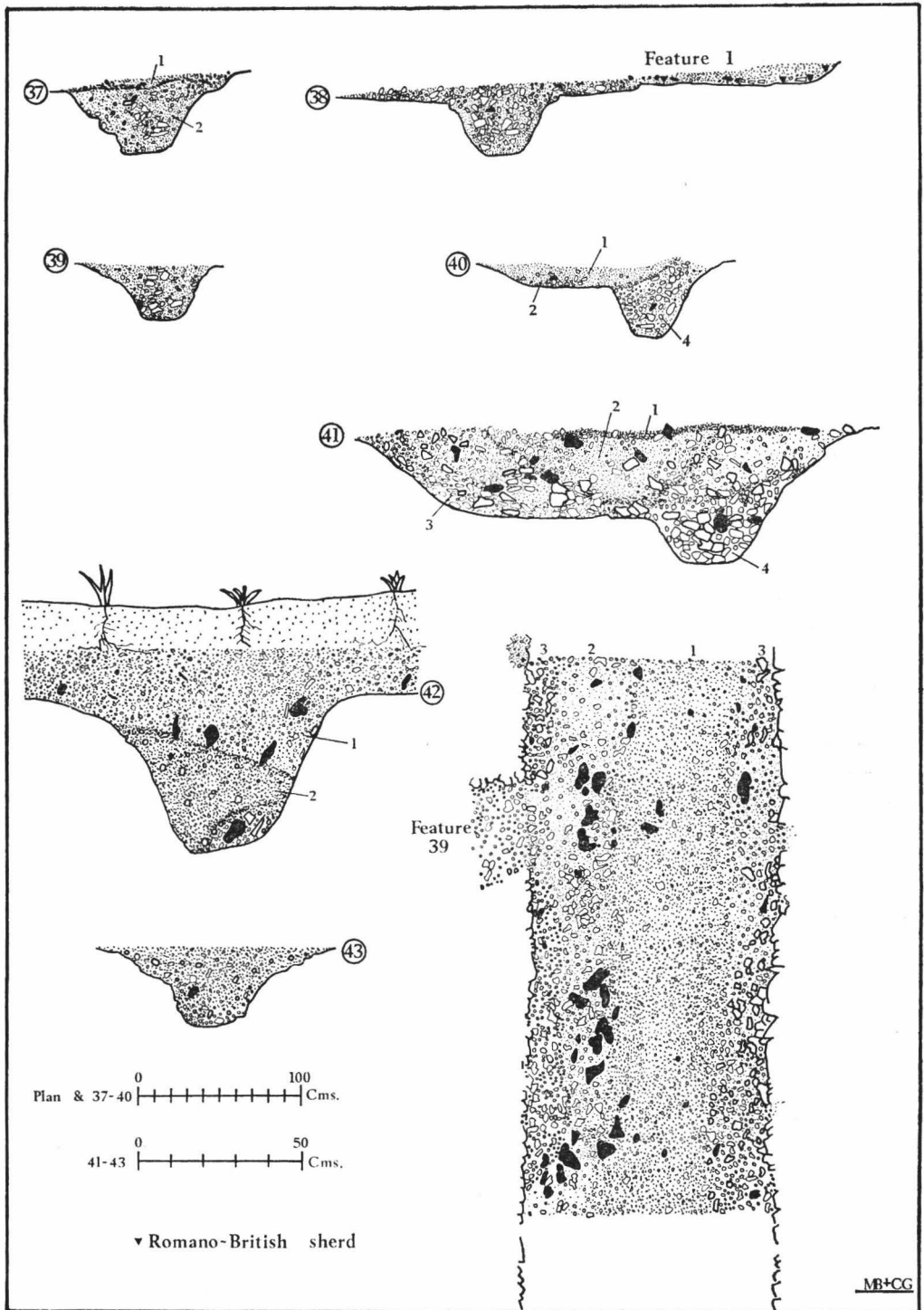


FIG. 67. Sections and plan of the Romano-British enclosure ditch

first century A.D., though a small number of second century pieces were included. Pottery from the upper fill has been considered together as Group iii, which is essentially first and early second century in date, and shows that the ditch had become largely infilled by the mid-second century. One or two later sherds were however introduced in layer 1 as a result of settling of the ditch silts. Much the densest concentration of artifacts was along the western side of the enclosure. Notable small finds from the ditch included the following: pottery spindle whorl (1); pottery counter (2); stone rubber (8); whetstone (11); decorated bone object (13); bone pin shaft (16); and the following iron objects—26, 28, 32, 33, 34, 37, 38 and 42. In addition there were a group of hobnails probably representing a shoe, and pieces of probable bloomery slag.

The Small Gully 885

This lay in the larger part of the enclosure and was parallel with, and 11m. north of, the cross ditch. Its total length was 9.4m. but it petered out at both ends and may originally have been longer. The section was U-shaped varying in width from 30 to 15cm., and a maximum of 15cm. deep. Dating evidence was sparse being confined to sherds of grey ware and East Sussex Ware, probably therefore it was of similar date to the ditch and might represent a further subdivision of the enclosed area.

General discussion of the Enclosure

Among the most striking features of the enclosure are its rectangular form, regularity and the presence of recuts. Anticipating discussion of the enclosed area we may note that it contained postholes and pits. A recurrent feature among the fills of the latter was refuse from corn-drying. It would seem that we have here an agricultural enclosure analogous to the modern farmyard. For similar examples associated with an accredited farm we only have to look to the basilican villa at West Blatchington.¹ There also the ditches were recut, and within the enclosures which they formed were corn-drying ovens. Nearer Bishopstone are two rural settlements which have produced traces of a similar layout. At East Blatchington, 1.47km. south east of Rookery Hill, is a site excavated by Messrs. D. Thomson and N. Norris; they found two parallel ditches between which they suggested a road had run.² The second site is 9km. to the north at Southerham, here there was a length of enclosure ditch of similar dimensions to the cross ditch at Bishopstone, and nearby was a corn-drying oven.³

THE PITS

These are divisible into five chronological categories under which they will be discussed.

(a) *Possibly predating the enclosure*

Pit 37 (Fig. 68). Rather square in plan, measuring 1.2m. by 0.9m. and 0.42m. deep with steeply sloping sides. Apparently it was deliberately filled all at once with chalk rubble, soil and a large number of flints. The suggestion that it predated the enclosure has two bases; firstly it was the only pit found outside the enclosure, secondly the pottery, amongst which was a small number of Iron Age sherds and seven thin wheel-made early Romano-British sherds. There were also 23 pieces of daub.

¹ N. Norris and G. P. Burstow, 'A Prehistoric and Romano-British site at West Blatchington, Hove,' *S.A.C.*, vol. 89 (1950), pp. 1-56. For one interpretation see: S. Applebaum, 'The pattern of settlement in Roman Britain,' *Agricultural History Review*, vol. 11 (1963), pp. 1-14.

² Unpublished excavations at *c.* TV 476996; thanks are due to the excavators for information. Noted in *S.N.Q.*, vol. 16 (1963-7), p. 35.

³ Personal communication from Dr. O. Bedwin.

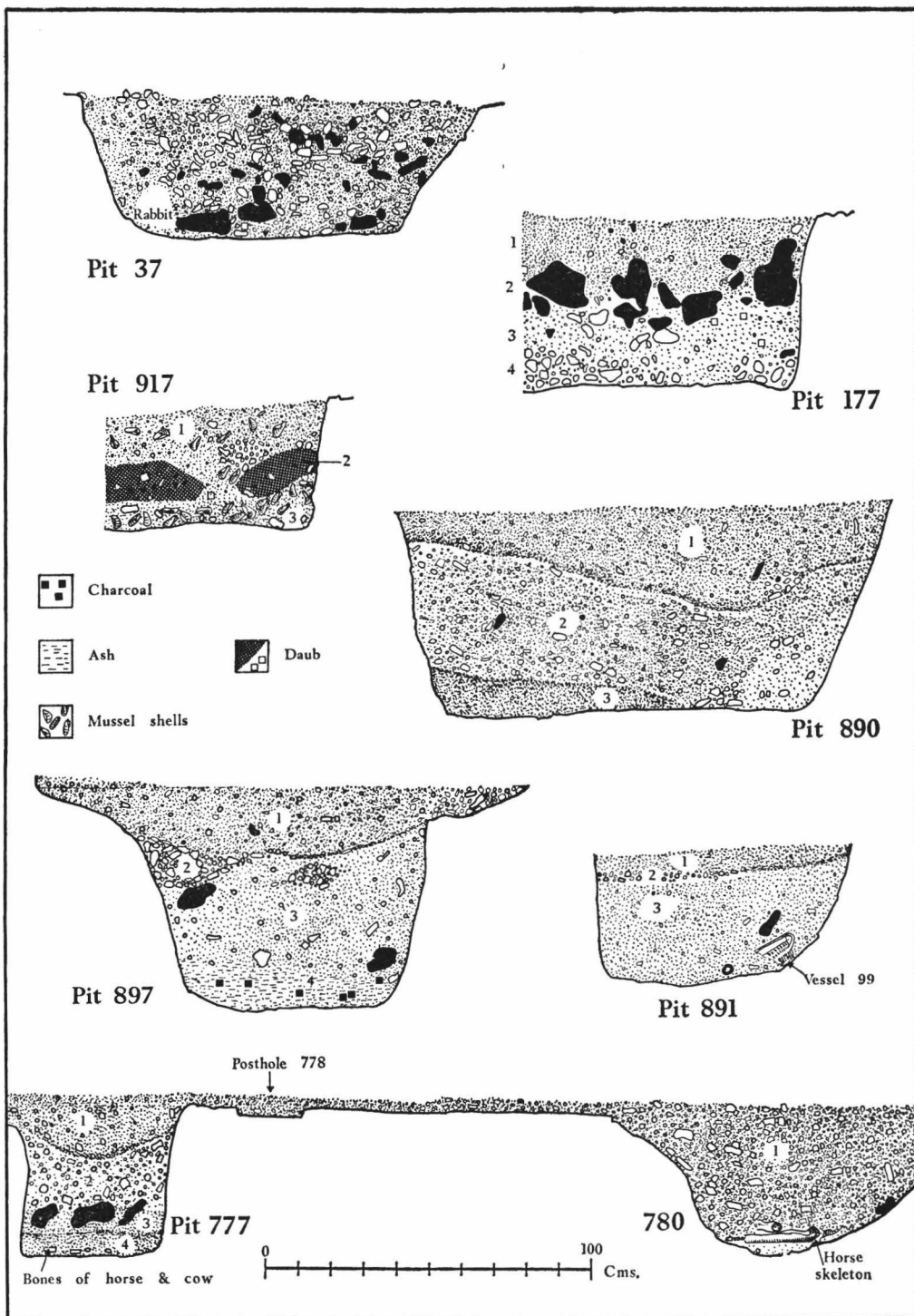


FIG. 68. Sections of the Romano-British pits

(b) *Contemporary with the enclosure*

Pit 718 (Fig. 5). An oval pit 0.76m. by 0.89m. slightly undercut in places and 0.3m. deep. To the south it opened out on to the enclosure ditch. Covering the floor of the pit was a layer of ash and pottery, this was overlain by burnt clay, and finally by chalk rubble. It seems likely that the feature was a small corn-drying oven, the clay dome of which had collapsed. Some confirmation of this theory was provided by Mr. Arthur's analysis of the ash, which showed it to contain seeds of cereals and weeds of cultivation. The opening between the pit and the enclosure ditch presumably served as the stoke hole. A resemblance between the slabs of clay and those from late Iron Age pits was one reason for suggesting that the latter came from corn-drying ovens. Land mollusc sample 10 was from this feature, but it yielded a disappointingly small number of snails. Pottery found amongst the primary layer of ash comprised Group i, an interesting series of first century forms associated with a sherd of Flavian samian.

Pit 917 (Fig. 68). A small roughly rectangular pit with rounded corners, not fully excavated as part of it lay under a modern fence. For this reason the minimum dimensions are given:- 1.2m. by 0.7m; the sides were vertical and the depth 0.41m. It had three principal layers, the earliest (3) was small chalk rubble and soil in which were a great many mussel shells. Above this were two patches of stiff yellow/orange clay (2), some of which had been fired at a low temperature. Then came the final fill of small chalk rubble and soil (1). The feature is dated to the second century A.D., by the pottery it contained; 18 sherds of grey ware, 7 pieces of East Sussex Ware, and a sherd of Hadrianic/Antonine samian. Flotation of part of layer 3 produced 108 pieces of barnacle, a grain of barley and a piece of non-metallurgical slag.

Pit 729. An L-shaped feature measuring 2.05m. by 2.5m. The base of the L consisted of a square pit 0.66m. deep, west of which was a shallower portion 0.48m. deep. The fill was earth, ash and daub with 78 flint nodules. The daub has been classified as follows: 174 amorphous lumps; 24 pieces with a flat surface and the impressions of circular wattles; and 14 roughly tile-shaped pieces. In such quantities this is likely to represent the remains of a clay oven, indeed the presence of ash might indicate that the pit was itself a corn-drying oven. However if it were one would expect the flints and daub to have taken on a more coherent structure, perhaps held in place by mortar. More probably the pit was filled with refuse from an oven, amongst which was a quantity of pottery, 104 sherds of East Sussex Ware and three sherds of grey ware, with a late second century samian sherd. Small finds included two fragments of bronze (19 and 20), an iron ring and two metamorphic beach pebbles, one used as a hammer (9), the other a whetstone (10). A piece of fine grained sandstone used as a rubber has been examined by Mr. F. E. Dimes who states that it may be of Coal Measure or Millstone Grit age.

Pit 177 (Fig. 68). An oval pit 1.37m. by at least 0.94m. (it ran under the baulk); straight sided and 0.56m. deep. The feature had four main layers, a thin primary fill of chalk rubble (4), above which was soil and small pieces of chalk with a little daub (3). Covering this was a layer of large flint nodules and soil (2), and finally small chalk rubble and soil (1) which had slumped into the top of the feature. Much of the pottery was of late Iron Age types but it included sherds of East Sussex Ware and grey ware, and also a piece of flat floor tile. Accordingly it is regarded as first or second century in date.

Scoop 771. An oval scoop 2.4m. by 1.17m. and about 0.3m. deep, filled with chalk rubble and apparently contemporary with the cross ditch which it joined on the north.

(c) *Third century*

Pit 1 (Fig. 67). An oval feature 1.6m. by 1.2m. but remarkably shallow, being between 3 and 6cm. deep. On the southern edge it just touched the Romano-British enclosure ditch but there was no overlap to establish their stratigraphic relationship. Flotation of the dark soil fill showed that it contained numerous pieces of charcoal, and carbonised seeds of wheat, barley and five weeds of cultivation. The interesting group of pottery it contained is discussed as Group iv and dated to the third century A.D. Other finds were part of a combed flue tile; two flat floor tiles; a thin oven tile; five iron nails; and a small iron bar.

(d) *Fourth century*

Pit 890 (Fig. 68). A rectangular pit with rounded corners 1.4m. by 1.2m. with steeply sloping sides and a depth of 0.62m. The primary fill was a rich dark deposit (3) which suggested to the excavators that it might originally have been a cess pit; no analyses have however been made to test this theory. Overlying this was a layer of chalk rubble and soil (2), and finally small chalk rubble and soil containing a good deal of charcoal and 93 pieces of fired daub, some of which carried the impressions of wattles. The pottery was largely East Sussex Ware with some grey wares; Thundersbarrow Ware; and three pieces of late Roman colour-coated pottery, one with a rosette stamp. The feature is probably contemporary with the neighbouring Pit 891, which produced similar pottery and is dated to the late fourth century. It had not however filled up entirely by the fifth century because layer 1 contained two Anglo-Saxon sherds. Small finds included an iron object in a bone handle (17); tile fragments; part of a Green-sand quern; three iron nails; and a piece of iron binding similar to No. 32.

Pit 891 (Fig. 68). A small circular pit 0.92m. by 0.97m., bowl-shaped in profile and 40cm. deep. A primary fill of small chalk rubble and soil (3) contained charcoal, twelve pieces of daub and some pottery. Overlying this was a thin lens of chalk (2), and a final fill (1) similar to layer 3. Amongst the fill were chips of rock from the same outcrops as the material used to build the corn-drying oven, with which this pit was roughly contemporary. The pottery comprises Group vii and is dated to the late fourth century A.D. Small finds were the shaft of a bronze pin (21), and the following iron objects: an eyelet spike (30); a split spike (31), and an iron nail.

Pit 897 (Fig. 68). A long rectangular pit, 3.07m. by 1.07m., it might more accurately be described as two intersecting pits which were apparently contemporary, the depth of the southern part being 0.69m., and that of the northern part 0.82m. The northern part ran under the baulk but sufficient of this was removed to demonstrate that the end of the pit was 0.25m. beyond the baulk. The pits contained four layers of sediment of which the primary was 15cm. of ash and charcoal (4); amongst this were 69 pieces of chalky daub/mortar, some of which had marks of wattles. There was also a number of pieces of sandstone and ironstone from the Eocene outcrops at Newhaven. Sealing this was a layer of soil with some chalk (3); after the deposition of which the feature was allowed to weather, and a weathering cone developed with a lens of chalk rubble at its base (2). Finally the cone was filled with soil and small chalk rubble. Much of the material in layer 4 was clearly from a corn-drying oven, indeed it is possible that the feature represents the subterranean parts of such an oven, viz. the stokehole and the flue. The chamber might perhaps have stood on the ground surface and have been lost through erosion. Pottery Group viii came from the pit, it is dated to the late fourth century A.D. Small finds included part of a rotary quern (7); 2 pieces of floor tile; and nails 39, 43 and 44. The Romano-British pit appears to have been cut through an Iron Age feature, part of which might have been a shallow runnel on the east side. This is suggested because amongst the pottery was an interesting Iron Age group, including the illustrated vessel 95 in Miss Hamilton's report.

Pit 777 (Fig. 68). A roughly square pit with slightly rounded corners, it measured 0.92m. by 0.84m. The sides were neatly cut and vertical, it was obvious that the feature had only been open a short time, the depth was 0.45m. Filling it were four layers of sediment, the earliest a thin band of soil (4) in which were several butchered cow and horse bones, the former being represented by segments of rib and five articulated vertebral bodies. Covering this were a number of large flints (3), and a large Eocene sandstone block standing vertically against the side and measuring 30cm. by 28cm. and 7cm. thick. Above this were broken chalk and occupation refuse (2) and finally small chalk rubble and soil (1) which had slumped into the feature. The pottery forms Group v which is dated to the late fourth century. Three sherds of Anglo-Saxon pottery were found in layer 2, and the following small finds came from the pit:- 3 tiles, one with combing (4); a beach pebble used as a rubber; and five iron nails.

Pit 780 (Fig. 68). Roughly oval in shape, 2.3m. by 1.5m., with a step on the west side; it had a much flatter floor than the line of the section would suggest and was 0.45m. deep. Lying on the floor was a substantial part of a horse's skeleton, the skull and vertebral column were articulated, but the limbs and pelvis were absent. Seemingly the pit was dug expressly to dispose of this partially dismembered carcass; it was then filled with chalk rubble, amongst which were a number of bones of sheep, dog, cattle and pig. The pottery included 17 sherds of East Sussex Ware and, from the top of the fill, two Anglo-Saxon sherds (Figs. 103, 24 and 25). Small finds included a clay sling bullet (3), part of a floor tile and several pieces of daub with wattle impressions.

Pit 809. An oval feature 0.8m. by 0.6m. but running under the baulk in the latter direction, 25cm. deep. It had a fill of broken chalk and soil containing 20 sherds of East Sussex Ware and 18 pieces of daub, three of which had flat faces and wattle impressions. A nucleation of fourth century features and pottery in the topsoil hereabouts suggests that the feature was of this period.

Pit 878 (Fig. 71). A small oval pit 0.43m. by 0.74m. with straight sides and a flat bottom, 0.35m. deep, filled with loose chalk rubble and chalky soil. The finds included nine sherds of East Sussex Ware; one sherd of colour-coated pottery; and a beach pebble utilised as a hammer, similar to object 9.

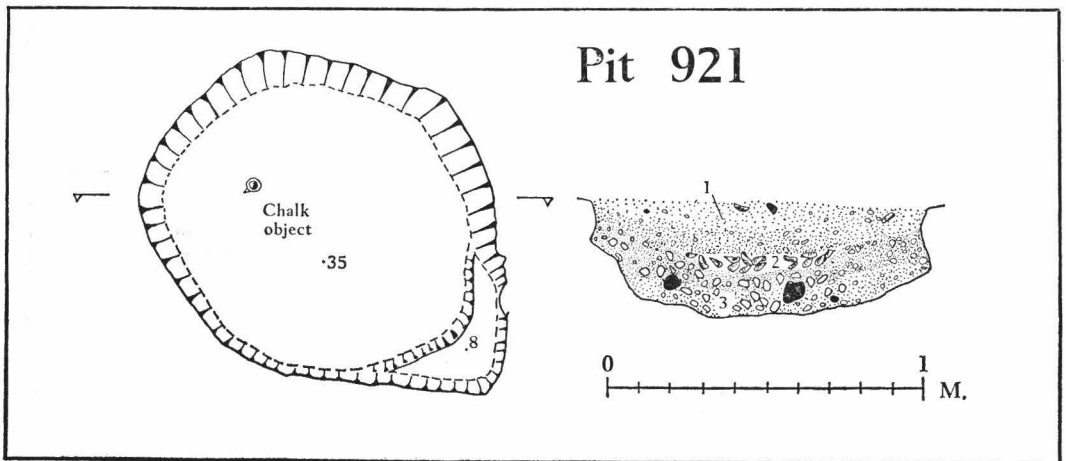


FIG. 69. Plan and section of pit 921

Pit 921 (Fig. 69). A roughly circular pit 1.02m. by 1.05m., bowl-shaped in profile, slightly undercut in places with a rounded bottom and maximum depth of 0.35m. On one side was a triangular shaped extension of depth 8cm. The primary fill was brown soil and chalk rubble with flecks of daub and carbon (3). Above this was a lens of mussel shells (2), and finally small chalk rubble and soil (1). Flotation of the pit contents produced numerous land and marine molluscs, pieces of charcoal and two grains of spelt. The pottery included 30 sherds of East Sussex Ware and four Anglo-Saxon sherds. At the junction between layers 2 and 3 was a carved chalk lamp or spoon (12). Attention should perhaps be drawn to the rather curious similarity between the shape of the feature and that of the chalk object. Dating the feature presents us with some difficulties, the object has Neolithic parallels, but the pottery is all much later. The majority of the sherds were in fact Romano-British, and included a sherd of grog-tempered 2 fabric; the feature seems most likely to be associated with a nucleation of fourth century pottery in the top soil in this area. This assumes that the three Anglo-Saxon sherds found in layer 2 were intrusive for there was no clear evidence of Anglo-Saxon buildings in the vicinity of the pit (but see discussion of Romano-British Structure LXII).

(e) *Undated Pits*

Pit 726. A shallow circular pit or hearth 0.87m. by 1.02m., straight sided and 0.19m. deep. Filled with ash, daub and pottery which has not been studied by the writer since it was excavated by Mr. D. Thomson, who retains possession of the finds.

Pit 725. A shallow circular pit or hearth 0.92m. by 1m. and about 0.30m. deep. Filled with ash, daub and pottery, excavated as above.

THE ROMANO-BRITISH STRUCTURES (Figs. 66 and 70)

Associated with the Romano-British occupation were 32 postholes which were dated either by finds of that period, or by their assignment to structures, other members of which contained finds. Only one datable Romano-British posthole, No. 352, lay outside the enclosure. Three structures could be assigned to the period, and with the possible exception of XXVI they were of fourth century date. In addition to these is Structure XLVII, originally dated to this period but now regarded as probably Anglo-Saxon, under which period it is more fully discussed.

STRUCTURE LXII. A group of ten small shallow postholes, the diameter of which varied between 20 and 40 cm., and the depth between 5 and 17cm. They did not form a regular building plan but lay on the periphery of a roughly kite-shaped figure, the diagonals of which measured some 5.5m. enclosing an area of about 30 square metres. This rather irregular grouping was given a degree of coherence by two observations. Firstly the absence of other significant postholes in the area. Secondly the existence of a very noticeable nucleation of fourth century pottery at the base of the earthworm-sorted zone in the area of the building. Associated with this nucleation were two coins (Nos. 2 and 3), one of second, and the other of fourth century date; pieces of slag; two lead fishing weights (22 and 23) and a chalk spindle whorl. Though this material was not stratigraphically related to the postholes an association is implied by similar pottery from the holes themselves; one sherd of a? Portchester fabric D rilled jar from posthole 924; two sherds of East Sussex Ware from both 923 and 924, and also from the latter a sherd of grey ware and a piece of bloomery slag. A further link between these postholes and the site's occupation during the second half of the fourth century was the use of small fragments of Eocene ironstone and yellow sandstone as posthole packing, these materials were extensively used in the corn-drying oven. Regardless of this dating evidence attention should be drawn to a general similarity between these postholes and those found in the Anglo-Saxon settlement. A relationship may be suggested both by their size and in particular by the possibility that 925, 927 and 928 may originally have been doubles. A few Anglo-Saxon sherds were indeed found at the base of the earthworm-sorted zone in this area, but there was no noticeable nucleation, nor were any sherds found in the postholes. We must conclude therefore that, on the evidence which has survived

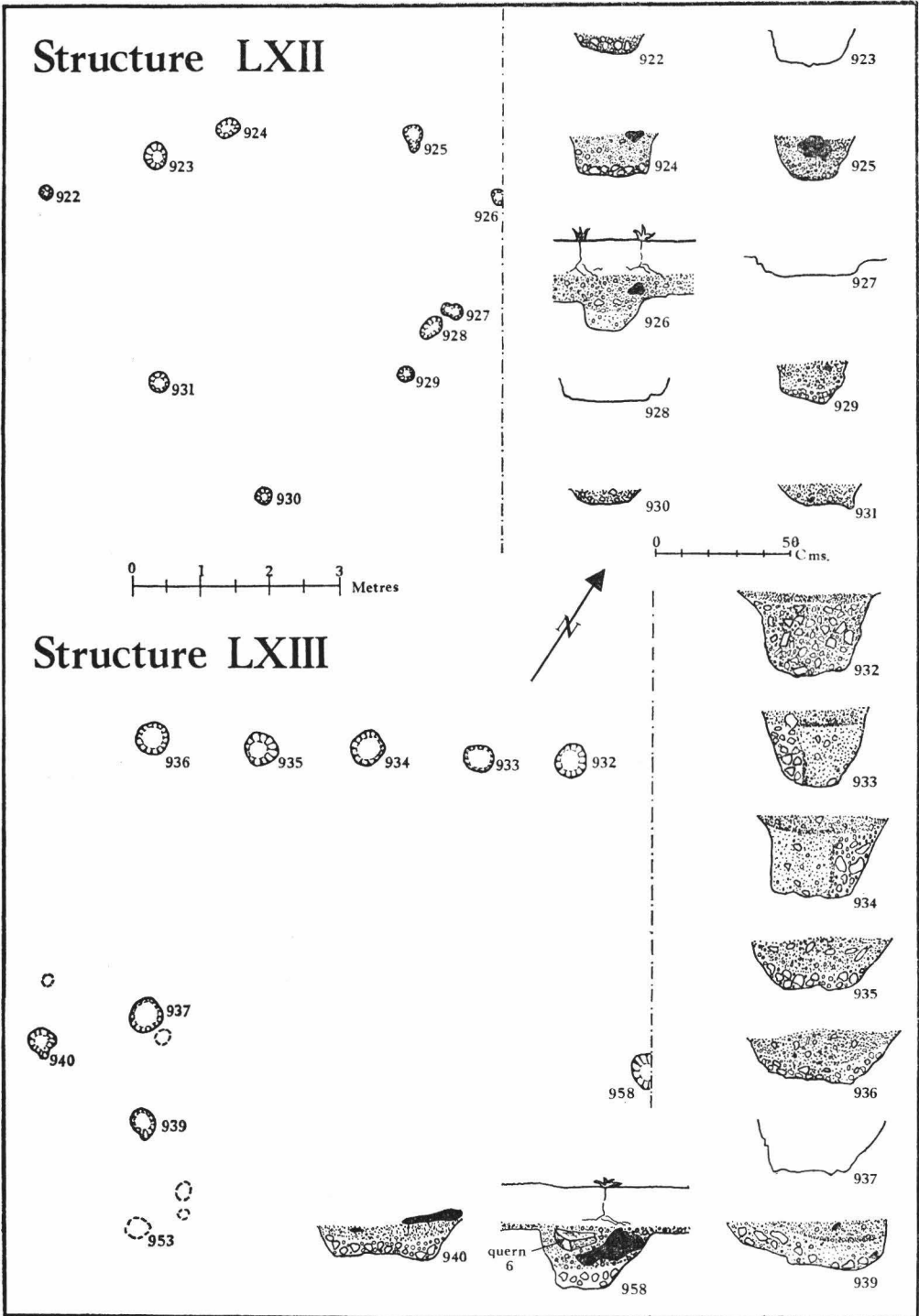


FIG. 70. Plan and sections of the Romano-British structures

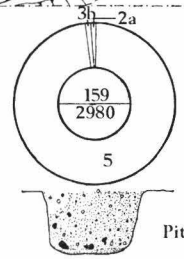
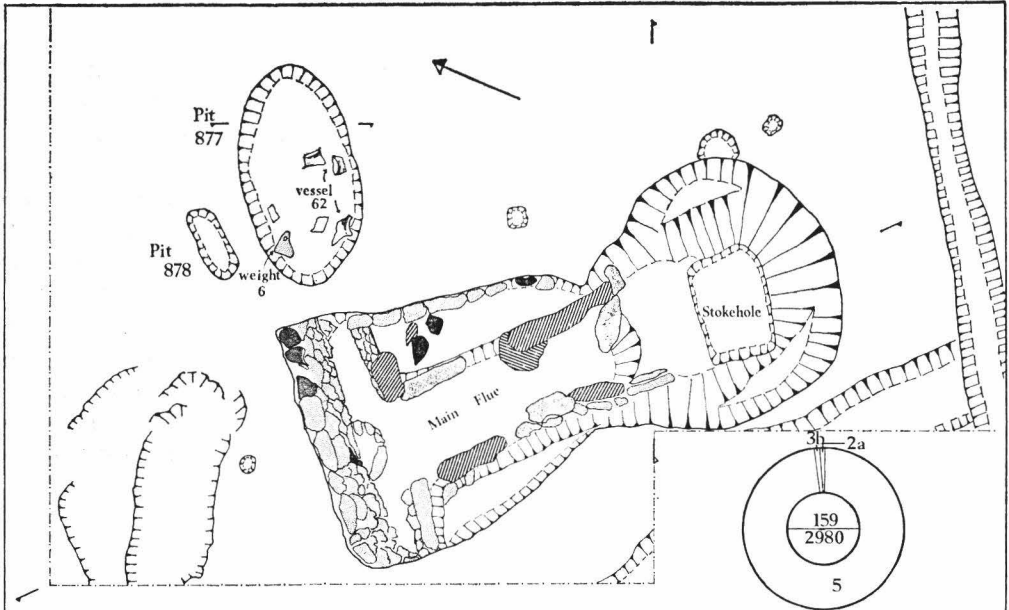
erosion, the postholes appear to represent a Romano-British structure of the second half of the fourth century A.D. Its function must remain unknown, the associated nucleation of pottery allows for interpretations ranging from a domestic building to a fence round a midden.

STRUCTURE LXIII. Ten postholes of similar shape, about 40cm. in diameter and between 30cm. and 12cm. deep. Five were in a line 6.6m. long, neatly spaced at intervals of about 1m. It was however debatable whether the remaining five could be associated with these as part of a single structure, though finds showed them to be contemporary. Postholes 937, 939 and 953, the latter undated, might have formed part of a row at right angles to the first. In all, six postholes contained Romano-British sherds, totalling 26 pieces of East Sussex Ware and four other pieces, including a sherd of colour-coated pottery; the post in 958 had been packed with a quern segment (6). These finds show the structure to have been associated with the fourth century occupation. Parts of it obviously lay outside the excavation so its interpretation must be subjective. We might however see it as a rectangular stockade perhaps used in cattle husbandry.

STRUCTURE XXVI. This was simply a pair of postholes, Nos. 175 and 176 of identical size and shape and 50cm. apart. They were circular, 40cm. in diameter and 25cm. deep, with straight sides and a flat bottom. No. 176 contained a sherd of East Sussex Ware.

THE CORN-DRYING OVEN (Fig. 71)

This was the only feature of the settlement clearly visible prior to its excavation; it was marked by a roughly circular grassy depression of diameter about 8m. This proved to be the site of a large T-shaped corn-drying oven, the total length of which was 5.6m. and the breadth 2.6m. For descriptive purposes the oven is divisible into three main parts, the stokehole, the flues and the drying floors. The stokehole was a large funnel-shaped pit with a small square pit at the bottom giving a total depth of 1.8m. It was entered by way of two crescent-shaped steps, one on each side of the pit. Dividing the stoking pit from the main body of the oven were buttresses of solid chalk on either side, and a slight rise in the chalk floor before it dipped down again to the main flue. The latter was a straight sided trench, 3.23m. long, which was cut 1.66m. below the top of the kiln and 1m. below the drying floor. Lining the flue were massive blocks of Eocene Sandstone and Ironstone Conglomerate which must have been brought from Castle Hill, Newhaven; the largest block measured 1m. by 0.7m. by 0.3m. thick. The flue was 0.61m. wide between the two rows of lining blocks, the faces of which were blackened and reddened by heat. The same agency had laminated the solid chalk on the floor of the flue. At the north end of the main flue was a secondary flue at right angles, this was 2.46m. long and 0.4m. wide, the same depth as the main flue. Lining the secondary flue was a carefully made wall of pieces of squared chalk supplemented by blocks of Lower Greensand and flint nodules. On the north east end of this flue two large pieces of Thundersbarrow Ware (Vessel 67) were mortared into the wall. Mortar used throughout the oven was a yellow/orange colour, a mixture of clay with large amounts of chalk. Projecting from the end wall facing the main flue was a semicircular pedestal made from chalk blocks and mortar. This would have served to divide the hot air and smoke between the two arms of the secondary flue; probably it also served as a support for the floor which covered the flue. The drying chamber was a large box-shaped pit, 2.76m. square, which stood over the flues and was sunk 0.66m. into the chalk. The end wall of the secondary flue was carried up to the sur-



BISHOPSTONE

Corn-drying Oven

- Soil
- Chalk
- Flints
- Ash
- Hard Chalk
- Ferruginous Conglomerate
- Yellow Sandstone

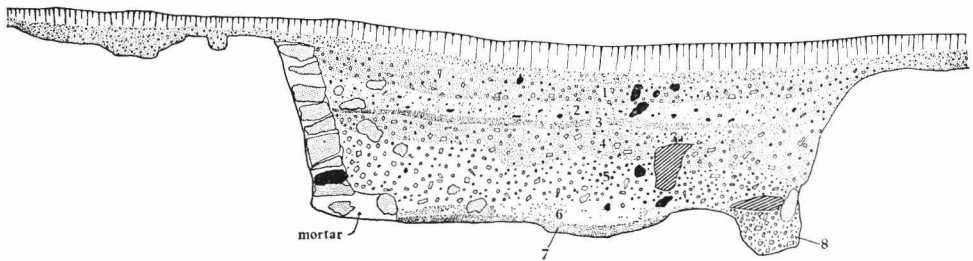
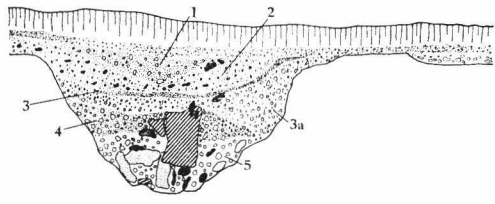


FIG. 71. The corn-drying oven

face to form the wall of the drying chamber, and a smaller wall was built of similar materials on the east side. No clear indication was observed of a wall on the west side. Nor was there any trace of the floor which covered the flue, or of that which formed the base of the drying chamber, these seem to have been robbed out. Evidence that they must once have existed is provided by examples on other sites which will be reviewed below.

Covering the bottoms of both flues were two layers contemporary with the final stages of the oven's use, the first was 10cm. of grey ash (7), and above this 15cm. of black ash and soil (6). Following the deposition of these the oven was dismantled and it was half filled with very loose chalk rubble (5), amongst which were several large pieces of stone that had been dislodged during the removal of the drying floors. There then appears to have been something of a pause in the infilling during which soil mixed with broken chalk (4) accumulated. The next layer was confined to a wedge-shaped patch on the south east side of the oven and consisted of sterile large chalk rubble (3a), probably the spoil from a newly excavated pit. Blanketing this was a thin band of grey ash, carbonised seeds and soil (3), which must represent either the backfilling of an ash dump associated with the oven, or the refuse from continued corn-drying operations nearby. After this the feature was filled with soil, chalk rubble and flints (2) and finally, as its sediments settled, part of the stone horizon of the earthworm sorted zone (1) came to occupy a trough in its top.

An interesting group of pottery (vi) dates this feature to the second half of the fourth century. Exactly how late it continued in use is more difficult to say, long enough evidently for it to have been a recognisable feature in the Saxon period as it contained twenty-eight Anglo-Saxon sherds, some of them as deep as layer 4. Perhaps we may picture the Saxons digging amongst the ruins of the oven for usable pieces of stone. Small finds included two pieces of bone pin shaft (14 and 15); a glass bead (18); a blob of bronze; numerous iron nails including 35, 36, 40 and 41; and other pieces of iron (e.g. 27). Tiles, of which there were several, seem likely to have been part of the oven's original construction. The identifiable pieces may be classified as follows: 7 floor; 2 imbrices; 1 tegula. Also possibly part of the oven were several pieces of daub on which were the impressions of wattles. Other finds were part of a large quern, a piece of adult human jaw and two ulnae of a baby. Flotation, particularly of the carbon rich layers, yielded a large number of pieces of charcoal; the species identified were poplar (*Populus* sp.) and hawthorn (*Crataegus* sp.) and presumably represent fuel used in the oven. Mixed with the wood ash were a great many carbonised seeds more fully discussed in the section on the Roman economy.

By analogy with better preserved ovens on other sites we can gain some idea of the original form of this structure and of the way in which it would have functioned. The flue would have been covered over with stone slabs as in oven II at Thundersbarrow Hill.¹ A suitable covering slab was found in Pit 777, and the floor tiles from the oven might equally have formed part of the floor. Alternatively the flue may have been covered by an arch of flints set in mortar in the fashion of the oven at Kingston Buci.² Whichever the method adopted it would have left a large square floored pit with the flue running underneath, and an open slot over the secondary flue at the end. The most well preserved ovens, like that at Atworth in Wiltshire,³ show that grain was not dried directly on the floor of the pit, where the heat and fumes would have been too intense. Drying took place on a secondary floor, which at Atworth was 15cm. above the pit floor and covered

¹ E. C. Curwen, 'Excavations on Thundersbarrow Hill, Sussex,' *Antiquaries Journal*, vol. 13 (1933), pp. 109-133.

² N. Norris and G. P. Burstow, 1950, *op. cit.*, p. 21.

³ R. G. Goodchild, 'T-shaped corn-drying ovens in Roman Britain,' *Antiquaries Journal*, vol. 23 (1943), pp. 148-53.

both the main and secondary flues, forcing the heated air to circulate below the drying floor before escaping through a side chimney. Traces of a second floor were also observed in oven II at Thundersbarrow Hill.¹ There were however no definite indications of a second floor in the Bishopstone example. We may speculate that, separated from the flames by the flue covering and an air space, it might have been constructed of wood. This was suggested in the case of the oven at Park Street villa, Hertfordshire,² and the more complicated drying floor at Great Caster-ton, Rutland.³

This oven is of a well defined type common in the rural agricultural settlements of the South Downs. A number of Sussex examples have already been mentioned, others are reported from West Blatchington (11 examples);⁴ Falmer (2 examples);⁵ East Dean near Chichester;⁶ Southerham near Lewes;⁷ Mill Hill, Shoreham;⁸ and a possible example represented by an early find at Green Street, Eastbourne.⁹ The Bishopstone oven and the two on Thundersbarrow Hill stand apart by virtue of their large overall proportions and depth. It seems, at least from the published examples, that these large ovens are almost exclusively a fourth century phenomenon. What economic factors or agricultural techniques gave rise to such large ovens is as yet unknown.¹⁰

THE ROMAN POTTERY

by C. M. Green

INTRODUCTION

All the excavated sherds were saved, with the exception of those lost by machine-stripping the topsoil in areas under the plough (largely outside the R-B enclosure). The material, with the exception of the pit groups, was generally abraded and very fragmentary. Sherds representing upwards of 400 vessels were removed for further study, providing examples of all forms and fabrics from each stratigraphical context. The pit groups (i and iv-viii) were studied in their entirety, as was the recognizably fourth century assemblage scattered across the enclosure, but it has not been possible to prepare a statistical presentation of the first to third century pottery, of which little occurred in secure contexts. The catalogue does however attempt to show a representative selection where possible.

The sherds came from three sources: the fills of the enclosure ditches; a small number of stratigraphically unrelated pits and postholes within or adjoining the enclosure; and from the stone horizon at the base of the earthworm sorted zone in the pastoral field which is called layer 2. Unfortunately practically all R-B features have been subject to partial silting with the stone horizon, which contained sherds of all periods (but particularly late Roman), and it was often difficult to isolate this material with much certainty. At the same time, pottery eroded from the upper fills of features has found its way into the stone horizon. The phenomenon is in fact one

¹ E. C. Curwen, 1933, op. cit., p. 123.

² H. O'Neil, 'The Roman villa at Park Street,' *Archaeological Journal*, vol. 102 (1945), pp. 21-110, particularly the reconstruction drawing, Fig. 24.

³ P. Corder, *The Roman town and villa at Great Casterton, second report* (Nottingham, 1954), pp. 19-24.

⁴ N. E. S. Norris and G. P. Burstow, 1950, op. cit., pp. 1-56.

⁵ N. E. S. Norris, 'Miscellaneous researches, 1949-56,' *S.A.C.*, vol. 94 (1956), pp. 1-4.

⁶ Unpublished excavation by Miss P. A. M. Keef, noted in *S.N.Q.*, vol. 14 (1954-7), p. 67.

⁷ Personal communication from Dr. O. Bedwin.

⁸ Personal communication from Mr. F. H. Witten.

⁹ I owe this suggestion to Lawrence Stevens: see H. M. Whitley, 'Discovery of Romano-British remains near Green Street, Eastbourne,' *S.A.C.*, vol. 38 (1892), pp. 160-162.

¹⁰ See H. C. Bowen, 'The Celtic background,' in A. L. F. Rivet (ed.), *The Roman Villa in Britain* (1969), pp. 45-7.

of erosional/gravitational movement of archaeological material across the site from feature to feature. In view of this, sherds have been attributed to layer 2 wherever doubt exists—most R-B postholes fall into this category. One practical consequence has been uncertainty about the status of the much eroded upper fill of the enclosure ditch (Group iii below), which contained some fourth century sherds alongside a larger amount of earlier material. I have interpreted this as a gradual silting of an already disused ditch rather than as evidence of a late recutting, but there is no conclusive proof of this. The fact that the main bulk of the pottery occurred in the effectively unstratified context of layer 2 has also hindered the analysis of the grey wares and some coarser types, for unless strongly diagnostic features are present it is not possible to date much of this material within the limits of the Roman period.

Difficulties with the stratigraphical status of the latest R-B pottery are matched at Bishopstone by difficulties with the earliest post-conquest 'South Eastern B' or 'Eastern Atrebatian' wares. Features of the Roman period sometimes contained as much pre- as post-conquest material, and while 'decontamination' was straightforward where earlier Iron Age sherds were involved, 'SEB' pottery was problematical, since vessels of notional dates between, say, 25 and 75 A.D. may prove to be typologically indistinguishable. Thus Group i was only saved from inclusion in the Iron Age report by the accident of containing a R-B lid and a samian sherd—otherwise it might have appeared to be a pre-conquest assemblage. Certain 'SEB' types do however seem to pre-date generally the conquest (those with pricked decoration, stamps or omphalos bases, for example), and such sherds have been treated as residual in R-B features; they are reported with the Iron Age pottery. On the other hand, Group vi (the finds from a fourth century corn-drying oven) contained much residual material, not all of it certainly post-conquest; it is reported here so as not to fragment this important group.¹

These special cases aside, the pottery is presented chronologically by stratified groups, and is arranged within these on the basis of fabric rather than form. Two main periods of occupation seem to be indicated: (a) the later first and earlier second centuries (Groups i-iii, types much more fully represented by similar material at Newhaven,² 2km. WNW of the site), and (b) the later fourth century, which is well represented by vessels from the major southern production sites, together with distinctive locally made coarser wares, comprising one of the largest such assemblages known from Sussex to date, with the exception of the largely unpublished material from Pevensy.³ However, the hiatus between periods (a) and (b) may well prove to be less marked than it appears; no doubt in part it simply reflects our ignorance of third century production in East Sussex. Late second and third century sherds *do* occur at Bishopstone, but at present only a few of them can be confidently identified.

This report, like the whole research project, is intended to complement the report on Newhaven—the sites are in fact just visible from one another across the Ouse. Anyone seriously interested in the first and second century pottery of the region should try to make reference to the Newhaven report, for where some types are very fragmentary here they have been left unillustrated and reference is made to the Newhaven examples (as 'Nh. 63,' e.g.); cross-reference is also made to

¹ See Miss Hamilton's report above for the bulk of the South Eastern B pottery, which is of her Fabric 5.

² C. M. Green, 'The coarse pottery' in M. G. Bell 'The excavation of an early Romano-British site and Pleistocene landforms at Newhaven, Sussex,' *S.A.C.*, vol. 114 (1976), pp. 218-305.

³ Unless undoubted associations are found with very late coinage or typologically early Saxon pottery or metalwork, it is difficult to see how there can be clear evidence for continuing pottery production in the early fifth century in East Sussex. Nonetheless it is not impossible that unrecognised 'sub-Roman' types are present here.

avoid the repetition of lists of parallels for early types, although further examples which have come to my attention are given. (Similarly parallels are not given for most of the standardized fourth century types on which there is a growing literature).

Unless otherwise stated, pots are of medium hardness, are self-coloured (i.e. colour in fracture is that of all surfaces), without larger inclusions, unslipped (or no longer visibly so), undecorated, and made and finished on the wheel. All are illustrated at $\frac{1}{4}$ scale, with the exception of 41 ($\frac{1}{8}$) and details of 99 ($\frac{1}{2}$).

The stratigraphical groups are referred to as i to ix. To facilitate cross-reference, unillustrated sherds are designated 12a, 14 a, b, c, etc., but no relationship to the illustrated type (12, 14, etc.) is necessarily implied. The pottery is now deposited in Brighton Museum, with the exception of fabric samples.¹

THE MAIN FABRIC TYPES

Hardham/Pulborough micaceous wares

A very fine smooth highly micaceous fabric known in a number of early imitation samian and 'Belgic' forms. Examples are either a dull warm red with grey core (when oxidized), or more often a dark grey with red core and black surfaces (when reduced). The surfaces are highly finished. The quantities of this material found at sites along Stane Street (London to Chichester) in late first and early second century contexts suggests the Hardham/Pulborough area as the production centre, but several examples were found at Newhaven (dated A.D. 60-80) and further occurrence at Bishopstone is no surprise. A biconical beaker in this distinctive fabric has been found at Skeleton Green, Puckeridge, Herts.—it is clear that the ware was fine enough to be fairly extensively traded.

See Newhaven vessels 55-61 for further discussion and typical forms.

Bishopstone examples: 14a, 38b-c, 89a, 105-106a.

*East Sussex Ware*²

This handmade grog-tempered fabric, first described for Newhaven, forms the largest single ceramic category at Bishopstone (perhaps representing 40 or even 50% of all vessels) and is by far the commonest R-B pottery type in the surrounding area. It was produced throughout the Roman period and for some time before,³ but isolation of the fourth century types and investigation of a possible later decline in the industry must await the excavation of a solely fourth century site in East Sussex under modern conditions, since most sherds are undiagnostic as regards date.

¹ I have had the help of a number of specialists. Joanna Bird, K. Hartley and Valery Rigby have provided reports on the samian, mortaria and Gallo-Belgic imitations respectively: their contributions are signed. Rosemary Jefferies and Malcolm Lyne looked at a good deal of the later material, and gave especial help with the Alice Holt/Farnham wares, while Dr. Michael Fulford examined the late colour coated wares and some of the grog-tempered types, and gave much other help. All these wares have their own pitfalls, and I am most grateful for the advice and general discussion which has made this report possible. The work has been carried out with the assistance of a grant from the Sussex Archaeological Field Unit.

² See C. M. Green, 1976 op. cit., where this ware was called 'Cooking Jar Fabric'; G. A. Holleyman, 'An early British agricultural village site on Highdole Hill, near Telscombe,' *S.A.C.*, vol. 77 (1936), pp. 202-221; N. E. S. Norris and G. P. Burstow, 'A Prehistoric and Romano-British site at West Blatchington, Hove Part 2,' *S.A.C.*, vol. 90 (1952), pp. 221-240; W. J. Parsons and E. C. Curwen, 'An agricultural settlement on Charleston Brow, near Firle Beacon,' *S.A.C.*, vol. 74 (1933), pp. 164-180; A. E. Wilson and G. P. Burstow, 'The evolution of Sussex Iron Age pottery,' *S.A.C.*, vol. 87 (1948), pp. 77-111, especially Table viii.

³ See Miss Hamilton's discussion of fabric 5, p. 91

East Sussex Ware (E. Sx. Ware hereafter) is variable in the details of its fabric—i.e. hardness, matrix colour, and the type, size and frequency of the filler. It is soft to hard, olive brown to black, rather open-bodied and rough/corky in fracture, and filled more or less liberally with a random assortment of some or all of the following: grog (all colours—some may actually be discoloured chalk), chalk, flint and ironstone (both of these either crushed or as naturally rounded grits) and shell. Minute cavities representing lost organic matter are more or less abundant. Grain size is largely 1mm. or less, but inclusions of up to 2.5mm. occur in most pots, and are often larger; frequently the large filler appears to be well sorted in size. Surfaces are dark grey or black and normally zone-burnished; where not, the filler is prominent. 'Soapiness' is very characteristic, except in overfired examples, which are light grey, rough, and crackled. Probably all are hand-built, but finishing on a slow wheel or turntable is common; decoration is rarely more than a burnished line around the girth, but may be much more elaborate. Bonfire firing is suspected, in view of the frequency of flame-marking. Batches of pots were clearly made with the filler most readily to hand; some may contain abundant ironstone or grey grog, while Bishopstone Group iv contained several sherds of a light-coloured grog, shell, and flint-gritted variety. Excavated material is very often burnt red-buff and prone to abrasion as the result of heating over cooking fires.

Dating is not fully worked out, and distribution is even less certain. Sherds of 'South Eastern B' eyebrow pots dating from perhaps 1 A.D. are generally in a variety of this fabric, but are very frequently more highly fired and often contain more calcined flint than R-B examples. Thereafter E. Sx. Ware was abundant in the first and second centuries, and common in the third or early fourth century, to judge from Bishopstone Group iv. But the latest groups at Bishopstone contain much residual material, and the quantity of contemporary (i.e. late fourth century) E. Sx. Ware is quite uncertain; the impression is that it became less of a local staple. The certainly fourth century forms differ slightly in fabric, and there seems to be a tendency towards a more general use of multi-coloured grog as filler, so that these types are generically compatible with some other late southern grog-tempered fabrics, notably the Hampshire wares.¹ Still, there is at present no reason to think that the later types are from different, non-local, sources.

Distribution is difficult to follow precisely, since some earlier excavators seem to have treated E. Sx. Ware with the familiarity that breeds contempt, and little has been published; West Blattington, Highdole (Telscombe) and Charleston Brow are honourable exceptions. Coastal/Downland distribution reaches the Adur, examples being apparently much rarer to the west, but the coast to the east of Bishopstone and Seaford and the whole Wealden area have been too little explored for a reliable picture to emerge, though E. Sx. Ware has recently been found as far inland as Garden Hill, Hartfield.² Newhaven may have been one source of the pottery since ironstone of the type so frequent in the filler is readily obtainable from the Eocene deposits. However there is likely to have been more than one production site. The main 'catchment area' is probably roughly that given by Wilson and Burstow³ for 'raised band' decoration on what were then considered to be the latest Iron Age types; it remained common on E. Sx. Ware jars until the third century at least (see Bishopstone vessels: 17, 26, 27, 44, 49, 57, 113a). The

¹ M. G. Fulford, 'The pottery,' in B. W. Cunliffe, *Excavations at Portchester Castle, vol. 1 Roman* (1975a), pp. 270-367.

² C. Shaw in J. H. Money, 'Excavations at Garden Hill, Hartfield' (forthcoming).

³ A. E. Wilson and G. P. Burstow, 1948, *op. cit.*, Table VIII.

material would repay further study simply as a marked example of continuity in material culture from the late Iron Age to the late R-B period.

Bishopstone examples: 1-3, 5-11, 15, 18-30, 42-50, 55-61, 68-9, 83-4, 86-8, 91, 110-113a, 126-131.

*Thundersbarrow Ware*¹

An instantly recognizable local handmade grog-tempered fabric, known only in storage jar forms. Thundersbarrow Ware is so coarse that it more resembles a ceramic concrete than the other grog-tempered types. The matrix is generally soft to hard orange-brown, and packed with grog, natural and (mainly) calcined flint grits, ironstone and chalk particles. Grain size varies with the bulk of the pot, but in general is 1 to 5mm., and inclusions of 10mm. are common in larger vessels.

Production on the South Downs of East Sussex seems indisputable, and it is conceivable that the vessels were constructed on site (by the inhabitants or by itinerant potters) as and when required, and fired by building a bonfire around and inside the pot. Certainly transport would have posed a problem had Thundersbarrow jars been produced at a single centre. Sherds from the type examples at Thundersbarrow were the first to be subjected to mineral analysis, but this showed that the Clay-with-Flints subsoil there had not been used in their manufacture. The date range is uncertain; similar jars with 'roped' or finger-impressed rims and often with 'clawed' interiors are known from the late first or second century in wheelmade sandy fabrics, and a Thundersbarrow Ware sherd of similar date is known from Newhaven (see Nh. 89), but the type is more common in the later Roman period, when they characterise agricultural sites and occur in various local fabrics throughout the South; they were presumably used for grain storage. The fabric under discussion was only found in post A.D. 350 contexts at Bishopstone.

Bishopstone examples: 62-3, 67, 121-4.

Other grog-tempered fabrics

Vessels were found in 3 or 4 other distinct fabrics; all are probably fourth century and are described in the catalogue. Whether Hampshire Grog-Tempered ware occurs at Bishopstone is uncertain; there are one or two possible, but not completely typical, examples. For convenience, the most common fabrics are designated G-T 1 and 2.

Bishopstone examples: G-T 1: 39, 132-3. G-T 2: 134-6. Others: 70, 91a, 125.

The 'Grey wares'

Though these were common at Bishopstone, relatively few vessels were reconstructable, and the fabrics were so varied that even fewer were assignable to single (albeit unknown) fabric sources. Occupation of the site from the first to fourth centuries A.D. also meant that only a handful of vessels could be even roughly dated. Until some East Sussex kiln groups are published, our ignorance of the local grey wares is unlikely to improve, but Hassocks is thought to be a very likely 'semi-urban' source for some types. As far as can be seen, there was no major grey ware production site swamping the local market, as was the case in the Chichester region.

The two or three cheese presses found at Bishopstone were, however, all in a fabric which probably implies a single source.

Bishopstone examples: Cheese presses 31, 114-6, all others 4, 14b, 16-7, 32-3, 35, 37, 38a, 54, 66, 81, 95, 106e, 118, 158-164.

¹ See K. P. Oakley, 'The pottery from the Romano-British site of Thundersbarrow Hill,' *Antiquaries Journal*, vol. 13 (1933), pp. 134-151.

*Black-burnished ware, category 1 (BB1)*¹

Mass-produced near Poole, Dorset. Medium to hard black granular fabric with a rough fracture, liberally filled with angular and subangular clear and white quartz, generally 0.5mm. or less in diameter. BB1 is by definition handmade, but rims were finished on a turntable in many cases; vessels are burnished completely (some bowls) or in zones. BB1 appears in the early second century and continued at least towards the close of the fourth century. Although very widely distributed (much was exported to Hadrian's Wall), the main coastal trade did not reach much of East Sussex, and very few sherds were found at Bishopstone (all but one were third or fourth century in date).

Bishopstone examples: 36, 52, 85, 139-141.

*Alice Holt/Farnham and New Forest 'grey' wares*²

The products of these kilns, in Surrey and Hampshire respectively, are notoriously difficult to distinguish. Very few of the Bishopstone examples were clearly assignable to one or the other, and these chiefly on grounds of form. In the statistical breakdown of types, two-thirds of the doubtful vessels have been arbitrarily attributed to Alice Holt, and one-third to the New Forest; given their relative distances this may still underrate the Alice Holt contribution.

The wares are medium to hard, finely sandy buff-brown to dark brown or grey with black, generally slipped surfaces usually burnished in part (though at Bishopstone the surfaces were frequently lost). One Alice Holt example was additionally white slipped. Arrival of these wares in Sussex is to be expected after the mid third century; most of the Bishopstone sherds are mid to late fourth century. The single recognizably New Forest type is described in the catalogue. Bishopstone examples: 73-6, 91b, 142-153.

*Portchester Fabric D (Tilford Ware?)*³

A very distinctive fourth century type. The fabric is medium to hard with a range of warm colours from a dirty cream through flesh-buff to creamy orange and dull red. Practically all the Bishopstone material displayed a gradation to grey and sooty black on parts of the pot, particularly the exterior and normally throughout the rims of jars, probably indicating an uneven and sooty gas flow within the kiln; completely grey or black examples might perhaps be encountered. The filler is almost entirely of rounded or subangular colourless transparent or milky quartz grains 0.5mm. or smaller, with more occasional rose and red quartz and red grog in some vessels. One sherd had a very large flint inclusion. Pots generally show the marks of a fast wheel, and the matrix has contracted to leave a rough pimply surface. The two base sherds from Bishopstone were wire-cut.

¹ See D. P. S. Peacock, 'The black-burnished pottery industry in Dorset' and R. A. H. Farrar, 'The techniques and sources of Romano-British black-burnished ware' in A. Detsicas (ed.), *Current research in Romano-British coarse pottery*, C.B.A. Research Report 10 (1973), pp. 63-5 and pp. 67-103.

² See M. G. Fulford, 'Excavation of three Romano-British pottery kilns in Amberwood enclosure, near Fritham, New Forest,' *Proc. Hants. Field Club*, vol. 28 (1971), pp. 5-28; M. G. Fulford, 1975a, op. cit.; M. G. Fulford, *New Forest Roman Pottery* (British Arch. Reports No. 17, 1975b); V.

Swan, 'Aspects of the New Forest late Roman pottery industry' in A. Detsicas (ed.), 1973, op. cit., pp. 117-134; K. P. Oakley, W. F. Rankine and A. W. G. Lowther, *A survey of the prehistory of the Farnham district* (1939), pp. 218-252; *Current Archaeology*, No. 54 (1976), pp. 212-3.

³ See M. G. Fulford, 1975a, op. cit., pp. 297-301; A. J. Clark, 'The fourth-century Romano-British pottery kilns at Overwey, Tilford,' *Surrey Archaeological Collections*, vol. 51 (1949), pp. 29-56; *Current Archaeology*, No. 54 (1976), pp. 212-3.

Portchester Fabric D has a widespread South Eastern distribution. Its source may be the kilns located at Overwey Tilford (nr. Farnham, Surrey), although there are likely to have been other production sites. At Portchester it was all post A.D. 325, and mainly post A.D. 350; it accounted for a significantly larger proportion of the fourth century pottery at Bishopstone than at Portchester.

Bishopstone examples: 64, 77a, 93-4, 154-7.

*Oxford colour-coated ware*¹

A well known and widely distributed late Roman product. Medium to hard very finely sandy dull orange-buff to bright orange-red, slightly laminar, and with buff, grey or red cores. Usually more or less micaceous, and with numerous minute black inclusions and small red grog. The mortaria are characterized by white and rose rounded quartz grits up to 3mm. Slips are generally bright red, but also orange and sometimes a duller brownish-orange. Both stamped and rouletted decoration occurs on the Bishopstone examples. The fabric was produced around Oxford from the mid-third century, but all the Bishopstone sherds are probably fourth century in date.

Bishopstone examples: 65, 98-101, 103, 167-173.

Other Oxford wares

See catalogue nos. 165-6.

*New Forest colour-coated wares*²

Mass-produced in the late third and fourth centuries; fully discussed by Dr. Fulford.³ With the exception of two or three dubious vessels, the fabric is Fulford's fabric 1a: medium to hard fine 'chalky,' generally white at Bishopstone, but grading to blue-grey with higher firing temperatures; there are sparse small ironstone inclusions. The slip varies in colour from orange through dark red to purplish black and black. 187 and 188, if they are New Forest types, would be in fabric 1b, though they are visually very similar to the others. These wares were not common at Bishopstone—the site is near the eastern limit of the coastal distribution.

Bishopstone examples: 185-6a; see also 187-8.

*New Forest Parchment Ware*⁴

See catalogue nos. 71, ?72.

*Pevensey Ware*⁵

Another fourth century colour-coated type, duplicating the general range of Oxford imitation samian forms. The fabric is a slightly creamy orange, extremely fine and smooth, laminar, and smooth or soapy in feel. The filler is very distinctive, consisting of crushed ironstone (generally less than 0.5mm. but often larger); red grog and clear quartz are much less frequent, though

¹ See C. Young, 'The pottery industry of the Oxford region' in A. Detsicas (ed.), 1973, op. cit., pp. 105-115; M. G. Fulford, 1975a, op. cit., p. 281 (fabric 1); M. G. Fulford and I. Hodder, 'A regression analysis of some late Romano-British coarse pottery: a case study,' *Oxoniensia*, vol. 39 (1974), pp. 26-33.

² See references given for Alice Holt/Farnham and New Forest 'grey' wares.

³ M. G. Fulford, 1975b, op. cit.

⁴ M. G. Fulford, 1975b, op. cit.

⁵ See M. G. Fulford, 'A fourth-century colour coated fabric and its types in South-East England,' *S.A.C.*, vol. 111 (1973), pp. 41-4; M. G. Fulford, 1975a, op. cit.

sizeable organic cavities often occur. The single mortarium had white and grey crushed flint and a few quartz grinding grits. Fracture is usually clean, and a blue-grey core may develop. The slip is a rich, often deep, red, and the surfaces are frequently pimply. White painted decoration occurs on one Bishopstone sherd, and may have been general on plain forms; a single rouletted example occurred at Bishopstone, but most of the decorated vessels were stamped.

All three examples of shallow bowls based on samian form Dr. 36 (see 182 and 182a) were in a slightly coarser fabric with sparser ironstone filler; each had developed a massive blue-grey core, with only a slight orange margin. The fabric was nonetheless finer than any of the Oxford products. A separate kiln, or perhaps a distinct batch of these bowls, seems possible.

Hardness varies dramatically, largely as a result of the conditions of preservation. Fresh sherds from the deeper pit fills are amongst the hardest of R-B fabrics (one was over 6 on Moh's scale), and Pevensey Ware was originally described as such, but much of the Bishopstone material, especially from layer 2, was of less than medium hardness, friable, and even in need of conservation. The slip is easily lost, and excavated sherds then superficially resemble their Oxford counterparts, but the fineness of the fabric, lack of mica flakes, and the ironstone filler should serve to distinguish them.

Although the kiln site is unknown, an East Sussex source now seems quite certain, for the high proportion of this fabric in the unpublished Pevensey material is confirmed at Bishopstone, where it was the commonest colour-coated fabric. The source of the ironstone may either be the Eocene outlier at Newhaven or (much more likely) the Wealden strata. Pevensey itself is perhaps the most likely site simply in terms of the size of its population. Bishopstone examples: 78-80, 95-97a, 104, 176-82 ?183-4.

Group i (nos. 1-4). Vessels from Feature 718, a hearth pit adjoining the NW corner of the R-B enclosure and possibly pre-dating it. 1-4 were found stratified with a sherd of samian Dr. 18R (South Gaulish, Flavian) in a layer of soot.

1-3 are in E. Sx. Ware, friable orange-brown with slightly darker surfaces; filler is rather sparse, except in 2, the largest vessel. All may be burnt and much altered.

1 S-profile eyebrow decorated bowl; handmade, burnished ext.

2 Wide-shouldered upright-rimmed storage vessel with three slight grooves below the neck; handmade, ?wheel-finished.¹

3 Bowl/jar with stepped shoulder; ?wheel-finished, burnished ext. and over rim. A form found in Newhaven Group i (c.A.D. 60-80; Nh. 21-2), though no doubt it has a wider chronological range.

4 Lid, of an unremarkable R-B form. Red/buff-brown sandy, slightly micaceous with clear quartz and small brown and black inclusions. Probably much altered by burning.

Summary. Vessels 1-3 are typical of 'S.E.B.' or 'Eastern Atrebat' types, and 1-2 in particular are much like pots thought to be early first century A.D. or even earlier. Their juxtaposition with the samian sherd and the lid is in fact a frequent phenomenon in the mid to late first century, and has been discussed for Newhaven (q.v.).

Group ii (nos. 5-14). Vessels from the lower fills of the R-B enclosure ditch system. There was at least one early recutting of the ditch, and a complex history was indicated in some sections. However, individual recuts could not be followed throughout the length of the ditches, and so all the material below layer 1 is grouped here; contamination by late pottery is very unlikely. Many further vessels of Group ii date are undoubtedly contained as residuals in Group iii. Findspots are given by ditch layer number. Extrinsic dating evidence was confined to samian sherds: two were Flavian, three probably post-Flavian.

Throughout all sectors and layers of the ditch, East Sussex Ware sherds predominated, accounting for well over 50% (by weight) of the material, but most were too abraded and fragmentary for useful illustration. Sherds with 'S.E.B.' eyebrow decoration were common, though some must be pre-conquest. Grey sandy wares (similarly preserved) were much less strongly represented than East Sussex Ware. The vessels described below are diagnostic specimens rather than a proportional representation of the fabrics present.

¹ For examples in pre-conquest contexts see Miss Hamilton's report, Figs. 49-53.

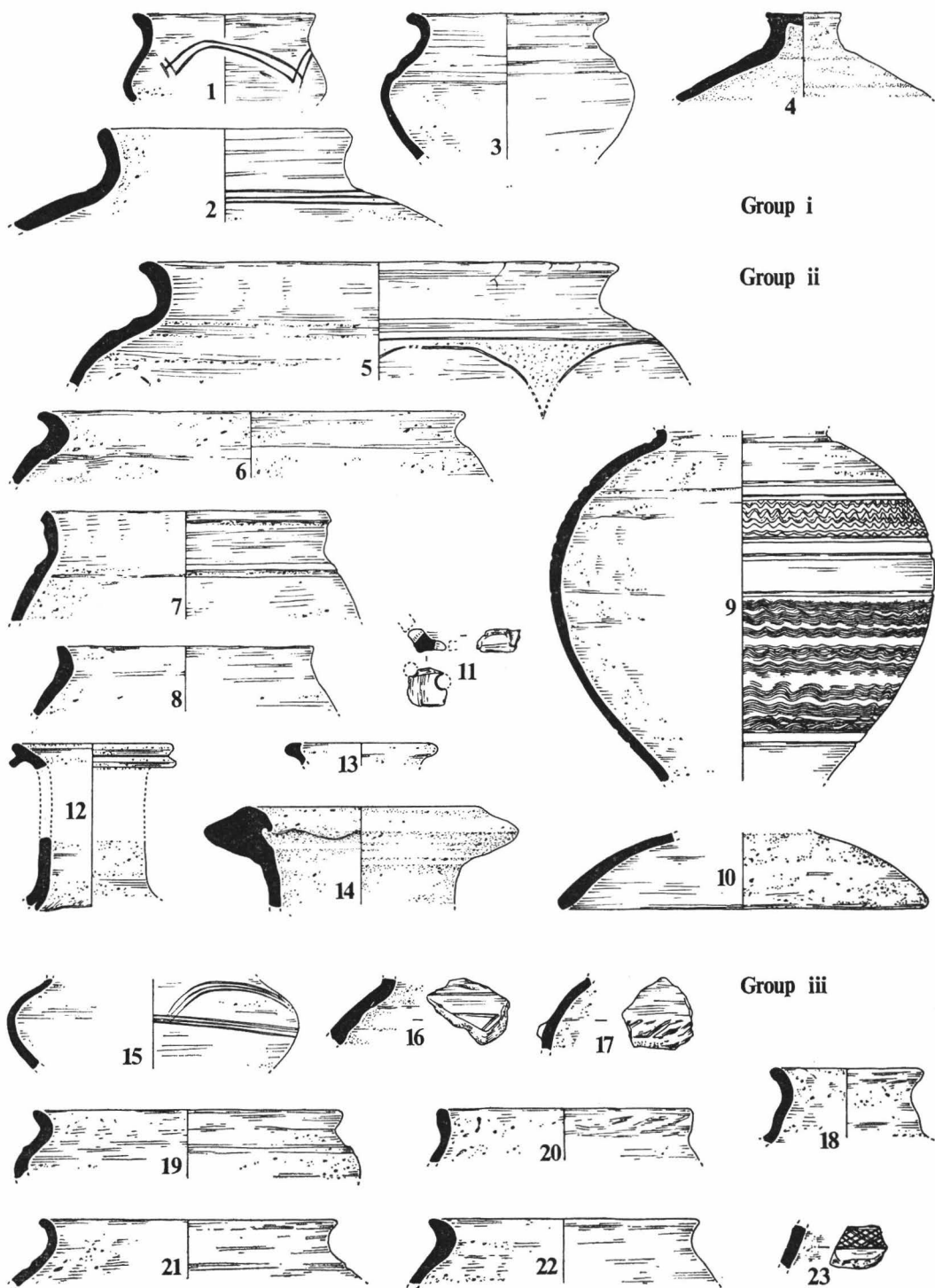


FIG. 72. Romano-British pottery; vessels 1-23. Scale $\frac{1}{4}$

- 5 Large 'S.E.B.' storage jar with stepped shoulder and incised groove and 'eyebrow' design below. Hard highly fired dark grey/black flame marked E. Sx. Ware. Handmade, burnished on shoulder and over rim with the exception of the area between the groove and 'eyebrow'; this area was probably left keyed for paint, so as to render the design more conspicuous. The stepped shoulder was well paralleled on Newhaven Group i vessels, as was the use of paint (see Nh. 5, 6; also 3 above). The unusually wide mouth is probably a functional peculiarity. Late first century (Layer 3).
- 6 Large jar with wide mouth and thickened neck. Handmade E. Sx. Ware, hard and with much flint filler; generally much as 5 (Layer 3).
- 7 Jar with distinctive upright neck; cordon and groove below. Possibly wheel finished. E. Sx. Ware: this (and a number of other vessels 8, 19-23) was in a grey-brown variety with small filler; brown margins beneath jet black strongly burnished surfaces. All these vessels should probably be considered as parts of the local late first century 'S.E.B.' culture, although they are not advertised by such features as eyebrow decoration. A similar assemblage was recognized at Newhaven (Nh. 10-27), in a closely similar type of E. Sx. Ware (Layer 2).
- 8 Plain jar; as 7 above (Layer 2).
- 9 Full-bodied jar with two zones of combed decoration between broad grooves; the upper zone is relatively coarse, the lower slight and with closely spaced lines—two combs have been used. Hand-made E. Sx. Ware, possibly finished on a slow wheel; dark grey with liberal grog filler, int. light grey, rough, ext. black and burnished where there is no decoration. 25 (below) may be the rim of this vessel. Presumably late first century A.D.; the only known parallel is from Ranscombe Hill, near Lewes¹ (Layers 3 and 2).
- 10 Lid. Highly fired E. Sx. Ware much as 9 but with more flint filler; handmade, int. dark grey and strongly burnished (Layer 2).
- 11 Small sherd of E. Sx. Ware colander vessel, pierced before firing. Handmade, burnt since breakage (Layer 2).
- 12, 12a Pulley-neck flagon. Soft friable fine chalky flesh-coloured fabric, with coarser quartz and red grog filler. (*Not illustrated*) is the three-reeded handle of a similar vessel in a finer fabric tending to buff in colour. The type is locally common in the late first and early second centuries but fabrics are very variable; see Nh. 65 etc. (Both Layer 2).
- 13 Flagon or pitcher; soft fine chalky flesh-coloured fabric with darker core; angular clear and dark quartz filler and red grog. The footring base is not illustrated (Layers 3, 2 and 1).
- 14 Amphora in tough finely sandy buff fabric with small white, grey and brown angular sand filler; mica conspicuous. This is Dressel 20, the globular south Spanish type most frequently brought to the province (See also 41 below) (Layer 3).
- 14a *Not illustrated*. Sherds from three thinly made jars in black-finished Hardham/Pulborough micaceous ware; form probably as *Fishbourne* 66-8.² One of the vessels is rouletted on the shoulder (Layers 2 and 1).
- 14b *Not illustrated*. Sherd of a two tone poppyhead beaker in grey finely sandy fabric with darker grey slip. These vessels are usually post-80 A.D., and are most common in the second century (Layer 2).
- 14c *Not illustrated*. Sherds of a cornice-rimmed beaker in soft to medium chalky white fabric with red-brown/dark brown slip (Layers 3, 2 and 1).
- Summary. Group ii is perhaps typical of assemblages dating to the last quarter of the first century in this area, although the presence of a few samian sherds of second century date suggests that the pottery has been much disturbed; perhaps the initial fill was completely removed by recutting. As at Newhaven, in the late first century there is a marked dichotomy between reliance on the local production of cooking jars and storage vessels (E. Sx. Ware), and the import of a small selection of the finer wares available elsewhere in the province; the products of any local grey ware kilns were not finding their way to the site in much quantity. Although the group is too small to allow much confidence, the impression is firstly that the population was very limited; secondly that the use of the finer table wares was rather restricted (compare the more luxurious rubbish thrown into the early ditch at Newhaven); and thirdly that material culture had not greatly altered since the ultimate pre-Roman Iron Age, despite the new economic organization indicated by the carefully laid out enclosure ditches. In short, East Sussex in general, and agricultural settlements like Bishopstone in particular, may have been somewhat isolated from the 'Romanization' which took place in much of lowland Britain in the Flavian period. This may have been a function of the absence of all but minor 'urban' settlements.
- Further sherds dating to the mid or late first century occurred as residuals in Groups iii-iv and in Group ix.

Group iii (nos. 15-41). Vessels from the upper fill (Layer 1) of the enclosure ditch system.

Much of the material is certainly residual and results from recutting into earlier deposits; one or two sherds are late third or fourth century and intrusive. However, an early second century date can be suggested for the deposit as a whole. Comments made for Group ii apply here, but the increasing frequency of 'grey, sandy' wares may be noted, and that typical Roman domestic appliance, the mortarium, makes its first appearance on the site.

¹ C. M. Green, 'The pottery' in O. Bedwin (forthcoming).

² B. W. Cunliffe, *Excavations at Fishbourne 1961-1969*, vol. II (1971), pp. 158-259.

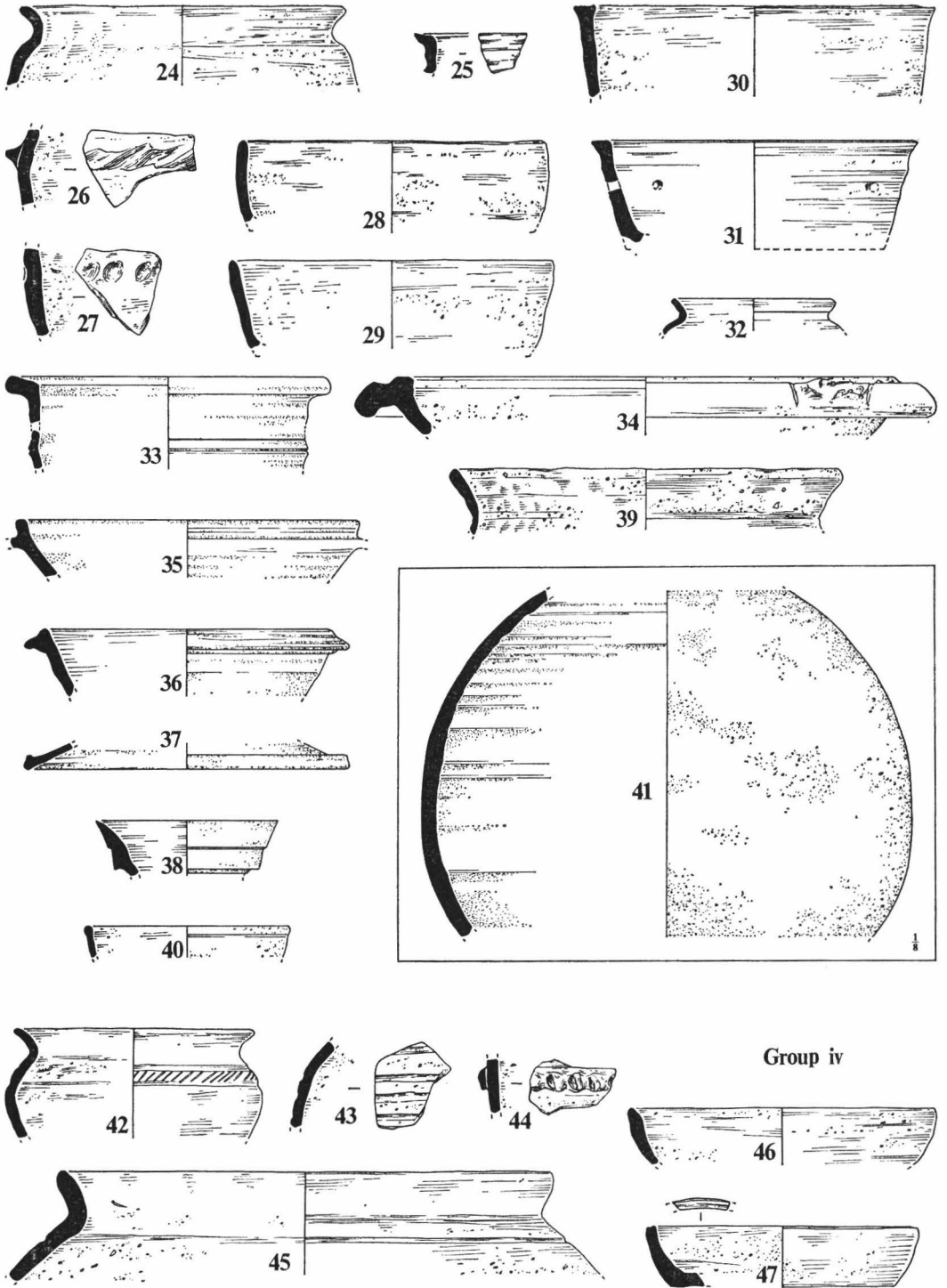


FIG. 73. Romano-British pottery; vessels 24-47. Scale $\frac{1}{4}$, except 41, $\frac{1}{8}$

- 15 Body of squat 'S.E.B.' jar or bowl decorated with triple incised eyebrow and girth grooves. Rather soft fine dark grey E. Sx. Ware, handmade, burnished ext.
- 16 Shoulder of jar with incised grooves and ?eyebrow. Brownish grey sandy with large quartz filler; ext. blue-grey. Handmade, burnished ext. Possibly a 'S.E.B.' vessel in a 'Romanized' fabric.
- 17 Round-shouldered jar; raised band applied above girth and slashed obliquely with a knife. Tough blue-grey rather sandy with calcined flint and other small filler; surfaces altered by burning. Handmade, burnished ext. Again, possibly a 'S.E.B.' vessel in a 'Romanized' fabric.
- 18 Neck of a 'S.E.B.' Asham Jar. Hard highly fired blue-grey E. Sx. Ware with lighter ext.; much calcined flint filler, giving a rough feel. Handmade, ?burnished ext. Asham Jars have squat sub-biconical bodies and flat bases; they are characteristic of the last phase of the 'S.E.B.' culture in East Sussex, but occur elsewhere, notably in Kent. See Nh. 1, 130 and (especially) 241 (all late first century examples).
- 19-23 E. Sx. Ware jars; all (with the possible exception of 19) handmade. Fabric, colour, treatment and probable associations as 7 above; a further vessel, much as 20, is not illustrated. 23 (angle uncertain) may well be part of the latticed shoulder of an Asham Jar.
- 24 High-shouldered handmade E. Sx. Ware jar, altered by burning.
- 25 E. Sx. Ware rim, perhaps belonging to 9, whose fabric it resembles.
- 26 Sherd of E. Sx. Ware jar with raised band decoration: handmade, much altered by burning. Raised-band decoration seems to be a late Iron Age 'S.E.B.' style, largely restricted to E. Sx. Ware jars (though the majority of forms are without decoration). See discussion of the fabric (above) for details of distribution, and also the report on the Iron Age pottery.
- 27 Handmade E. Sx. Ware jar sherd with thumb-impressions on girth; this decoration seems to be interchangeable with the applied raised band.
- 28, 29 Typical E. Sx. Ware shallow bowls, handmade in dark fabrics with, originally, black surfaces, burnished int. but left at least partially rough ext. The type seems to be commoner after the first century.
- 30 Deeper bowl with flattened rim; handmade typical dark grey E. Sx. Ware; surfaces altered by burning but completely burnished.
- 31 Cheese press of typical form, with a single hole (made before firing) in the remaining sherds. Tough fine light bluish-grey with small black inclusions. Fast wheel marks on surfaces. The Bishopstone cheese presses appear, from the other examples, to have had a ridged body and a flat pressure plate.
- 32 Small jar well made in a fine smooth light grey fabric with darker rather shiny slipped ext.
- 33 (Carinated bowl with heavy square rim and grooved girth ridge, position of body sherd uncertain). Rather friable grey-white finely sandy with sparse larger black inclusions; dark grey slip. A typically early or mid second century form (2; a similar vessel was found in Group ix).
- 34 Mortarium; soft rather finely sandy cream-buff with sparse larger filler; trituration grit white and grey crushed calcined flint and a few transparent quartz grains. A type which is known from Richborough¹ and Wroxeter² and seems to date c.A.D. 80-120. The fabric indicates manufacture in the South or South-East or in Gaul. A stamp has been applied to the flange of the Bishopstone example, but so carelessly as to be quite illegible; normally the form was plain, and this is the first known stamp. *K. Hartley.*
- 35 Flanged bowl (flange broken); sandy fabric ?originally black, much altered by burning.
- 36 BB1 flanged bowl, much altered by burning. Intrusive ?mid third to fourth century.
- 37 Lid; sandy fabric much altered by burning.
- 38 Flagon or pitcher rim; soft finely sandy slightly micaceous pale red with dull red-brown slip; fast rotation marks. From its form this would seem to be a variant of the Hofheim flagon; if so it should date to the mid first century A.D. Such vessels are rare, if not otherwise unknown, in Sussex (See also 106f).
- 38a *Not illustrated.* Sherd of poppyhead beaker with shoulder/neck cordon, decorated with a panel of barbotine dots. Fine smooth dark-grey with rust-brown sandwich core and dark grey inner core; surfaces light grey; second century.
- 38b *Not illustrated.* Sherd of a biconical beaker in black-finished Hardham/Pulborough micaceous ware. As Nh. 55-6 but without rouletting.
- 38c *Not illustrated.* As 38b but with the unusual feature of a beaded rim.
- 38d *Not illustrated.* Rough-cast beaker; soft very finely sandy brownish-red with orange-red/black slip.
- 38e *Not illustrated.* Sherd of a rough-cast beaker or hemispherical bowl in Lezoux Ware;³ very fine smooth off-white laminar fabric slipped orange-brown/red-brown.
- 39 Everted-rimmed jar, coil built in a grog-tempered fabric which is visually distinguishable from E. Sx. Ware (G-T 1 in this report): dark grey corky-fractured, liberally filled with small crushed flint, grog, and other angular filler. Surfaces olive grey/dark grey, burnished and a little soapy inside and below the ext. of the rim; rough elsewhere. Two other vessels (132-3) were found in fabric G-T 1 at Bishopstone, and although they were effectively unstratified, their localization with the greatest concentration of late colour-coated wares suggests a date, and that 39 is intrusive in the present context. This fabric is also known from a late fourth (or early fifth) century context at Ranscombe.⁴

¹ J. P. Bushe-Fox, *Richborough IV* (1949), Plate XCV, No. 500 (and also unpublished examples).

² J. P. Bushe-Fox, *Excavations on the site of the Roman town at Wroxeter, Shropshire, in 1912* (1913), Fig. 19, Nos. 26-30.

³ See K. Greene, *Guide to pre-Flavian fine wares c. A.D. 40-70* (Cardiff, privately printed, 1972), pp. 4-5.

⁴ C. M. Green, 'The pottery' in O. Bedwin (forthcoming).

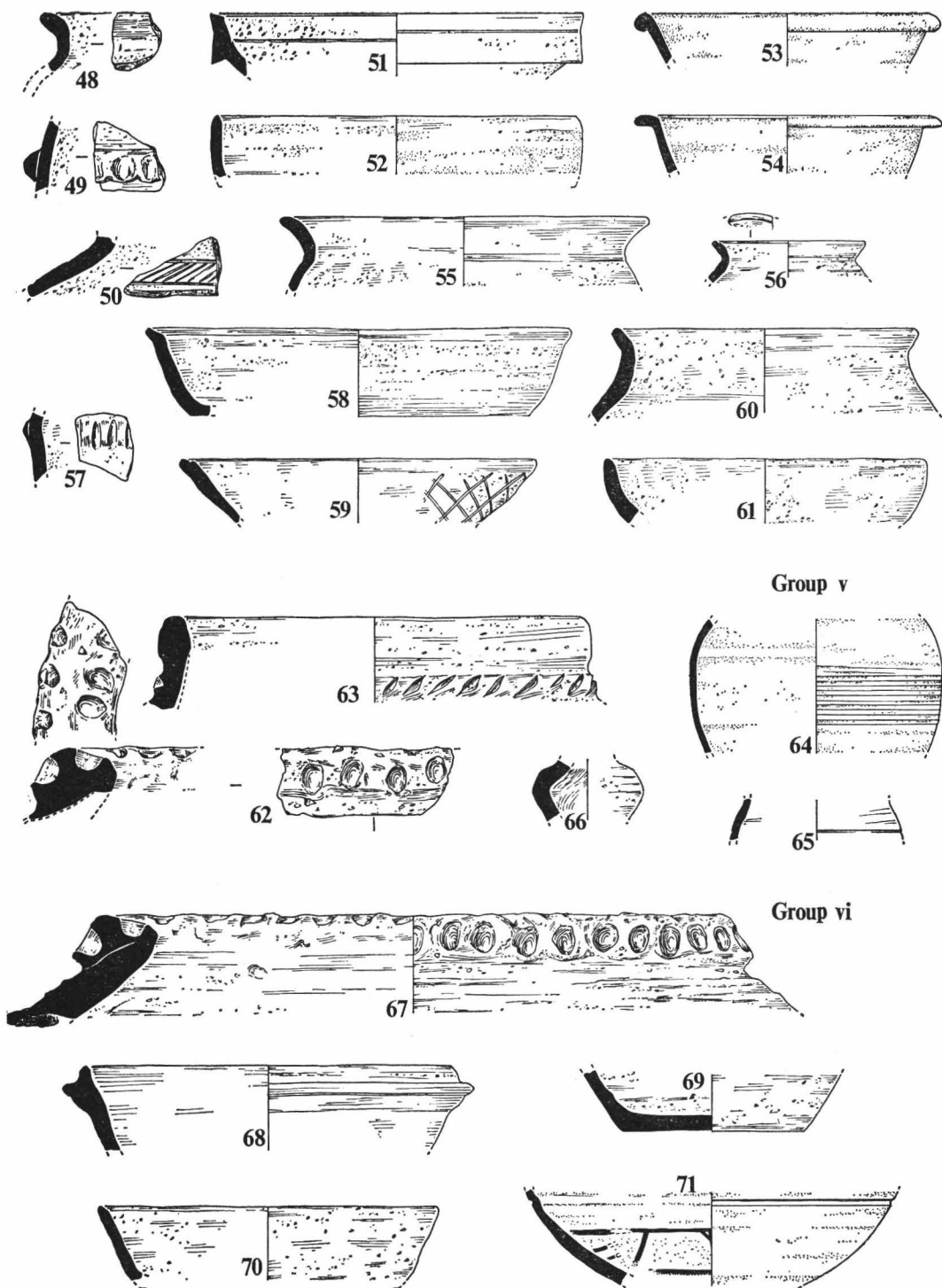


FIG. 74. Romano-British pottery; vessels 48-71. Scale $\frac{1}{4}$

- 40 Small bowl with bead rim; rather tough very finely sandy slightly micaceous bright orange with sparse fine grog and grey ?flint filler.
- 41 *Illustrated at $\frac{1}{3}$ actual size.* Body of a globular amphora (Dressel 20, see 14); flesh-buff with slight grey int. margin; well filled with coarse angular quartz and other red, brown and grey grits.

Groups iv-viii are from pits. All the R-B pits (excepting 37) were found within the limits of the enclosure ditch system. Although Groups ii and iii suggest that the ditch was no longer kept clear after the mid second century, its slow silting would have left it as a visible depression and it may of course have remained as a boundary with hedge. At any rate the enclosure boundary was observed before the construction of the Saxon settlement.

Group iv (nos. 42-61). Vessels from Feature 1, a shallow pit just touching the southern part of the enclosure (although no clear stratigraphical relationship could be observed). Amidst much carbonized material were found several hundred sherds of pottery, mainly completely altered by burning since breakage, and in very fragmentary condition; almost all the vessels which could be usefully illustrated are included here. Over 90% of the sherds belonged to E. Sx. Ware pots, representing *minima* of c.72 jars and c.11 bowls. However, most of this material was residual and much had been dispersed into the surrounding modern plough soil; only 42-54 can be regarded as securely stratified. A samian Dr. 31 bowl stamped IVCVND-V.F. (dated c.A.D. 160-200, see report below) was found in the disturbed material, but may be residual or quite unassociated. The mortarium and the BB1 bowl, together with the absence of fourth century types, seem to bracket Feature 1 within the third century. It was the only feature of this date recognized at Bishopstone, and indeed is almost unique amongst East Sussex assemblages in this respect. Making due allowance for a large residual factor, Group iv is interesting in several respects. The poverty of the group, in terms of the finer table wares, is obvious—practically all the vessels are of types presumably used for cooking or storage. Non-East Sussex Ware jars too are almost completely absent, while the more varied character of the bowls suggests (not suprisingly) that only small easily transportable vessels were brought from far afield (BB1 is from Dorset); the more bulky jars were obtained locally. Finally, the presence of a few relatively unabrased and unburnt sherds of E. Sx. Ware seems to indicate that the local handmade pottery industry was still flourishing in the third century and that its products still included the traditional 'raised band' jar. This is also the impression gained from the pottery at Highdole, Telscombe,¹ though good stratigraphical evidence was lacking there.

- 42 Jar with everted rim and oblique burnished lines between broad grooves on the shoulder. Handmade in grey/brown E. Sx. Ware with brown-red grog and other rounded filler; surfaces burnished ext. and over rim. Altered by burning.
- 43 Body sherd of jar with broad grooves. Handmade, as 42.
- 44 Sherd of E. Sx. Ware jar with thumbed applied raised band. Handmade, as 42.
- 45 Large jar with shoulder groove. Handmade, as 42, but with more liberal filler.
- 46, 47 Small bowls, 47 with groove on top of rim. Handmade, as 42.
- 48 Rim sherd of shouldered jar in a handmade variety of E. Sx. Ware which is both distinctive and unknown outside Feature 1—possibly suggesting small scale batch production. Highly fired grey with calcined flint, marine shell, large (?daub) grog inclusions, natural flint and chalk. Filler abundant, often large (up to 4mm.) and generally angular; surfaces rather rough, dull orange-buff/grey (flame marked) and possibly burnished ext. At least one other such jar was represented.
- 49 Thumbled raised band jar, as 48 (to which it may belong).
- 50 Sherd from a jar with spreading shoulder, decorated with incised oblique strokes between two grooves (as is 42). Possibly handmade, fabric as 48, completely discoloured by burning.
- 51 Wallside mortarium. Soft friable fine brick red with rather sparse quartz sand filler, red-brown grog and a large ironstone inclusion. Very angular white and grey calcinated flint and both clear and white small quartz trituration grits. Slip, if any, lost. Not a product of any of the known mortarium sources, and likely to be local perhaps dating to c.A.D. 150-230. Comparison might be made with white slipped mortararia produced in the Gloucester-Somerset region during this period. *K. Hartley*
- 52 BB1 shallow bowl. A fresh sherd from a form which became most frequent in the third and fourth centuries.
- 53 Round-rimmed 'pie dish'; soft-medium rather 'chalky' finely sandy flesh-coloured fabric with brown grog inclusions. Originally slipped grey.
- 54 Flange-rimmed bowl; bluish-grey micaceous sandy, with clear quartz and brown filler; surfaces oxidized to a dirty orange-buff.
- 54a Illustrated as 164; a scatter of body sherds from this vessel was found above Feature 1.
- 55 E. Sx. Ware jar with everted rim and very slight cordon at neck. Fabric ?as 42 (since altered by burning) possibly wheel made or finished. This is a form generally characteristic of the third and fourth centuries—a slightly differing form was found in a pit dated to mid or late fourth century at Slonk Hill, near Shoreham.²
- 56 Small jar with groove (? a lid seating) inside rim. E. Sx. Ware, probably wheel thrown, rather highly fired with dark grey surfaces.
- 57 Sherd of jar with vertically slashed raised-band thickening near girth. Handmade E. Sx. Ware, much as 42.

G. A. Holleyman, 1936, op. cit.

² Information from the excavator, Mr. R. Hartridge.

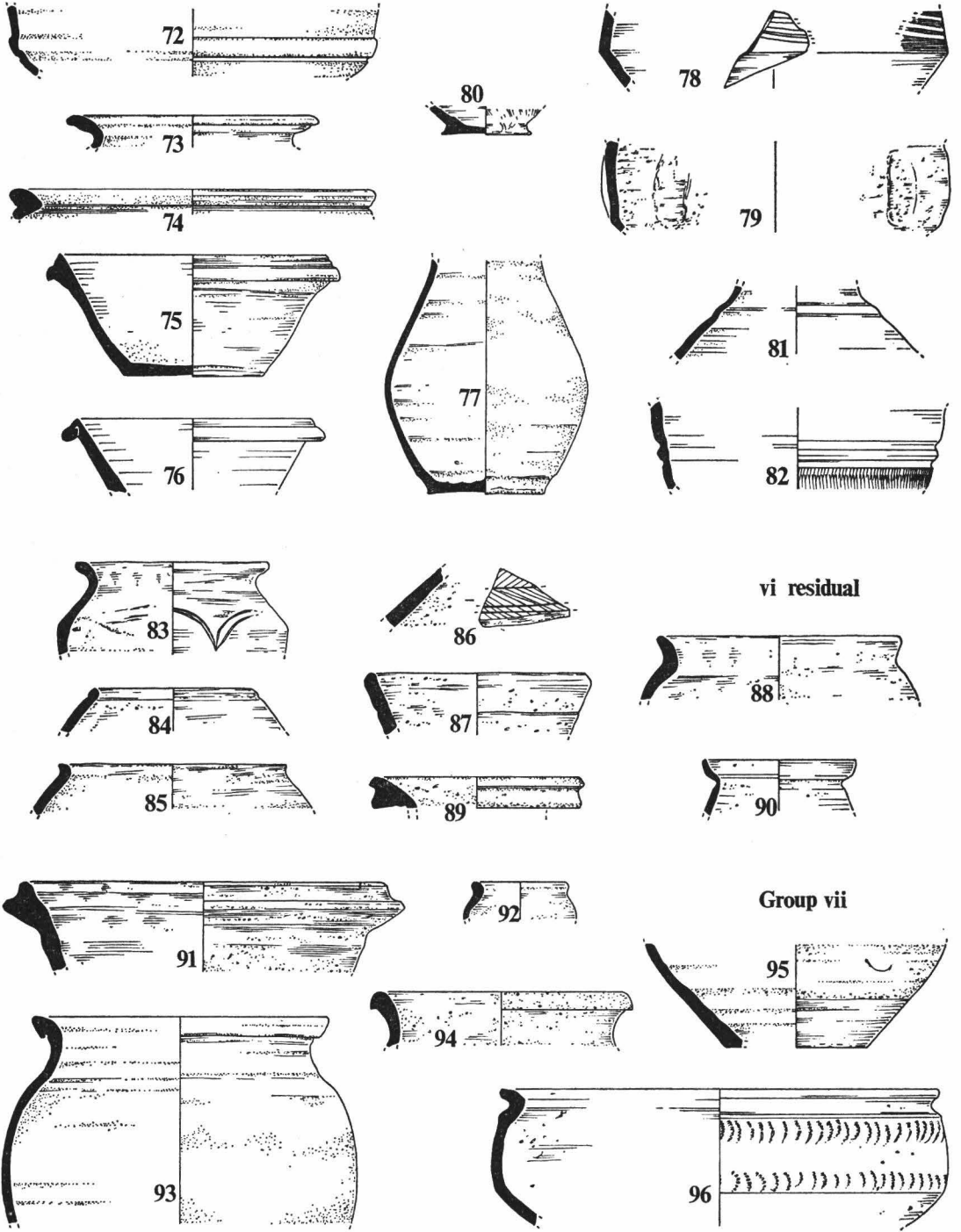


FIG. 75. Romano-British pottery; vessels 72-96. Scale $\frac{1}{4}$

- 58 Bowl with slightly everted rim; E. Sx. Ware, much as 42 but possibly wheel thrown or finished. Much altered by burning. Two very similar examples were found at Newhaven (Nh. 253, 254), where they were suspected to be post-Antonine.
- 59 Bowl or lid with burnished ext. lattice and ? lid seating groove inside rim. Grey handmade E. Sx. Ware, as 42; burnished surfaces.
- 60, 61 Shoulderless jar and bowl, both handmade in a fabric close to 48.
- 61a *Not illustrated.* Small sherd of hard fine smooth orange-red fabric with rapid wheel marks; generally high quality. Perhaps a straight-sided jar or bowl; source unknown.

Groups v-viii are all post c.A.D. 350 but are unlikely to have been deposited much after c.A.D. 400. Their ceramic assemblages were generally very similar, and are discussed, together with Group ix, in the summary of the pottery (below).

Group v (nos. 62-66). Vessels from feature 777, a pit beside the cross ditch. The top of the pit was subject to plough erosion, and vessels 123, 124 and 163 are topsoil finds almost certainly associated with Group v.

- 62 Thundersbarrow Ware storage jar with thumb-impressed rim; coil built. The associated body sherds are *not* internally clawed.
- 63 Handmade storage jar with upright rim and knife-stabbed neck-cordon. Grey Thundersbarrow Ware, surfaces reduced black and boldly burnished ext., though the filler is nonetheless prominent. Parallels unknown, but *cf.* a common mid to late fourth century type, the Alice Holt/Farnham storage jar (144 below).
- 64 Body sherd of a rilled Portchester Fabric D/?Tilford Ware jar (*cf.* 156 for typical form). Late fourth century.
- 65 Sherd from a small jar; probably Oxford red colour-coated with deeper orange-red slip.
- 66 Small robustly made vessel of unknown source; perhaps an unguent jar, if so it is illustrated upside down. Intensely hard fine blue-grey grading to light red surfaces; organic cavities and a chalk or limestone inclusion, but otherwise the filler is multi-coloured, very small, and sparse. Twisted during throwing. Perhaps residual.

Group vi (nos. 67-90). Vessels from the fill of the large corn-drying oven, feature 881. Although the bulk of the pottery was of late fourth century date, a number of sherds of the mid first century and later were residual throughout the fill, and are reported as *Group vi residual* (83-90). Possibly the construction of the oven destroyed a mid to late first century pit which was later backfilled. Saxon sherds of fifth or sixth century date were also found to some depth in the fill, but seem likely to have been a result of wall-robbing.

- 67 Thundersbarrow Ware storage jar with thumb-impressed rim; coil-built.
- 68 Heavily built handmade bowl with thickened applied flange (groove beneath) and a slightly stepped interior. Very hard tough E. Sx. Ware: grey with liberal coarse filler—grey and a little red grog, calcined flint and ? chalk. Surfaces soapy, dark brown/black and boldly burnished to a rather high finish. This form was common in late fourth century contexts at Bishopstone but probably very local—perhaps all the vessels are from one hand. See also *West Blatchington*¹ Pl. IX no. 88.
- 68a *Not illustrated.* As 68, but of slightly lighter construction.
- 69 Base of handmade jar or bowl. Grog-tempered ? E. Sx. Ware: tough coarse black fabric with much calcined flint and grog and organic cavities; conspicuously rough/corky fracture. Partially burnished on base and ext.
- 70 Plain bowl roughly handmade in a distinctive fabric: hard somewhat brittle dark grey clean-fractured with calcined flint, grog and a single ? iron pyrites inclusion; filler very prominent on the surfaces even where burnished. Presumed late fourth century, but very hard to parallel.
- 71 New Forest Parchment Ware bowl with ext. groove and int. brown-black painted decoration. Dr. Fulford's types 88-9.² Hard rather brittle light grey sandy with a slight greenish cast, grading to brown/black in places; filler of sharp angular sand. Fourth century.
- 72 Bowl with hollow cordon and groove; rather soft sandy very light grey: not unlike the fabric of 71.
- 73 Flaring-rimmed jar of typical late form. Alice Holt/Farnham or New Forest sandy. Late third to fourth century.
- 74 Rim of what is probably a narrow-based colander vessel; Alice Holt/Farnham or New Forest sandy, late third or fourth century. The West Blatchington report³ illustrates the profile of a complete vessel, and 152 below is a probable base sherd.
- 75-6 Flanged bowls, probably Alice Holt sandy, with jet black highly burnished surfaces. 75 at least is probably post A.D. 325.
- 77 Vessel with wire-cut base in bright flesh-coloured Portchester Fabric D/?Tilford Ware, grading to black in places; the fabric is finer than is usual. A very unusual form, previously unknown in this fabric; in the absence of the upper part, a handled jug with pouring lip may be suggested—this form is fairly common in some of the mass-produced late colour-coated fabrics (see, e.g., 169). Post A.D. 350.
- 77a *Not illustrated.* Sherds of a rilled Portchester Fabric D/?Tilford Ware jar; wire-cut base.
- 78 Sharply carinated Pevensey Ware bowl with deep orange slip and three white-painted lines above the girth.

¹ N. E. S. Norris and G. P. Burstow, 1952, *op. cit.*, pp. 221-240.

² M. G. Fulford, 1975b, *op. cit.*

³ N. E. S. Norris and G. P. Burstow, 1952, *op. cit.*, Plate VI, Fig. 26.

- 79 Thumb-dimpled bowl in Pevensey Ware. An intensely hard example with a dark grey core and dark red slip; finish rather rough. This is the only dimpled Pevensey bowl known to date; dimpled Oxford counterparts are contemporary with rosette-stamped decoration, i.e. generally post c.A.D. 350.
- 80 Base of Pevensey Ware vessel, wire-cut and strongly twisted in throwing. Pale orange-red slip.
- 81 Jar with spreading ?shoulder (the sherd may be illustrated upside-down) and slight hollow cordon. Fairly brittle finely sandy light blue-grey with some black filler flecking the darker grey highly finished ext. Probably fourth century and contemporary with the rest of the group, to judge from the freshness of the sherd.
- 82 Sherd of a rouletted, cordoned and grooved bowl in very hard but rather brittle fine dark blue-grey fabric with rough-feeling but clean fracture; surfaces slightly mottled orange-brown with lightly gold mica-dusted or washed finish. There are fast rotation marks and the general quality is high. An enigmatic sherd which may be contemporary with the corn-drying oven (i.e. late fourth century), or equally well a late first to early second century imitation Dr. 29 bowl—mica-dusting was in vogue in this period. The fabric source is unknown; a continental kiln cannot be ruled out.
- Group vi residual*
- 83 Small 'S.E.B.' 'eyebrow' pot; handmade highly fired dark grey E. Sx. Ware; rather vesicular and with calcined flint filler. Burnished ext. and over rim. First century.
- 83a *Not illustrated.* Sherds from another two handmade 'S.E.B.' 'eyebrow' pots, larger but in generally similar fabrics. Also two typical 'S.E.B.' footring/pedestal bases. All presumed first century.
- 84 Bead-rimmed ?ovoid jar; fabric much as 83, finished on a slow wheel. Probably late first century, when this form was popular.
- 85 Plain-rimmed jar, handmade, almost certainly BB1, second century.
- 86 Shoulder of a burnt E. Sx. Ware jar with chevron and groove decoration. Perhaps from an Asham Jar (see 18 above) or a derivative. ?Late first century.
- 87 Small E. Sx. Ware bowl with single groove.
- 88 E. Sx. Ware handmade jar of a form typical of the first or second centuries at Newhaven; brown/grey with dark grey/black surfaces, burnished ext. and over rim. Four other jars in similar fabrics were found in Group vi.
- 89 Pulley-neck flagon. Soft orange-flesh finely sandy with red and brown grog and organic cavities. Late first to early second century.
- 89a *Not illustrated.* Sherd of an imitation Dr. 30 or 37 bowl. Probably red-brown surfaced Hardham/Pulborough micaceous ware. Late first to ?early second century.
- 90 Rim of butt-beaker in very finely sandy flesh-orange fabric with minute black inclusions; rough fracture and surfaces with a dirtier grey tinge, especially where there is wheel burnishing—i.e. inside the rim and on the shoulder. The general quality is good. The fabric is not true TR3, and the rim is deeply 'cupped' or 'dished'—far more so than the imported type *Camulodunum* 112. Though the vessel may still be a Gaulish import, production within the Province is more likely, and the fabric may be considered as a good copy of TR3 or Colchester 'parchment ware.' The rim form is more typical of British imitations (source unknown), and the best comparisons are with *Silchester* 151 and other examples from Old Winteringham, Lincs., and North Ferriby, Yorks. E.R. (both Humberside sites). The sherd is post-conquest, but butt-beakers and close copies did not survive the early Flavian period: A.D. 50-80 is suggested. *V. Rigby*
- Group vii* (nos. 91-101). Vessels from Feature 891, a pit in the northern part of the enclosure. Late fourth century.
- 91 Differs from 68 mainly in the higher degree of firing, which has left a rough grey crackled ext.
- 91a *Not illustrated.* Body sherds of a jar with burnished acute lattice decoration. Handmade brown/black with rough fracture, grey and red grog, ironstone and other inclusions up to 2.5mm. Surfaces dull red (? burnt) grading to soot black, with prominent filler. Superficially closely resembles Portchester Fabric A (Hampshire Grog-Tempered Ware), and although not illustrable, the present sherds are very close to *Portchester*¹ 123.3 and .4; it is also noteworthy that E. Sx. Ware jars, unlike the Hampshire types, are rarely latticed, and that this was the only handmade fourth century latticed vessel from Bishopstone. However, 91a contains hard light grey mineral inclusions (? chert or a hard mudstone) which are not typical of Hampshire fabrics, so that the attribution is uncertain. See also 125. Vessels in similar fabrics, probably local, are also known from Ranscombe in late fourth century contexts.²
- 91b Sherds of 144 (q.v.) or a similar vessel. Post A.D. 350
- 92 Small well made vessel in soft-medium flesh-buff finely sandy fabric with white slip. Source unknown.
- 93 Triangular-rimmed plain jar in Portchester Fabric D/?Tilford Ware Fabric much as 77, but rather dirtier in colour and brittle.
- 94 Rim of jar, Portchester Fabric D/?Tilford Ware; dark brick red grading to black.
- 95 Base of jar; friable light bluish-grey sandy with darker sandwich and lighter inner cores; rounded/sub-angular sand filler. Surfaces rough int. and ext, above an almost metallic wheel-burnished zone.
- 96 Pevensey Ware bowl with two rows of stamped demi-rosettes. Bright orange-red, ?unslipped.
- 97 Imitation Dr. 38 bowl in Pevensey Ware with deep red slip; there are a few conspicuous large organic cavities.
- 97a Single sherd of Pevensey Ware vessel 181 below (q.v.).
- 98 Flanged red colour-coated Oxford mortarium of typical fourth century form; brownish-red slip.

M. G. Fulford, 1975a, op. cit.

2 C. M. Green, 'The pottery' in O. Bedwin (forthcoming).

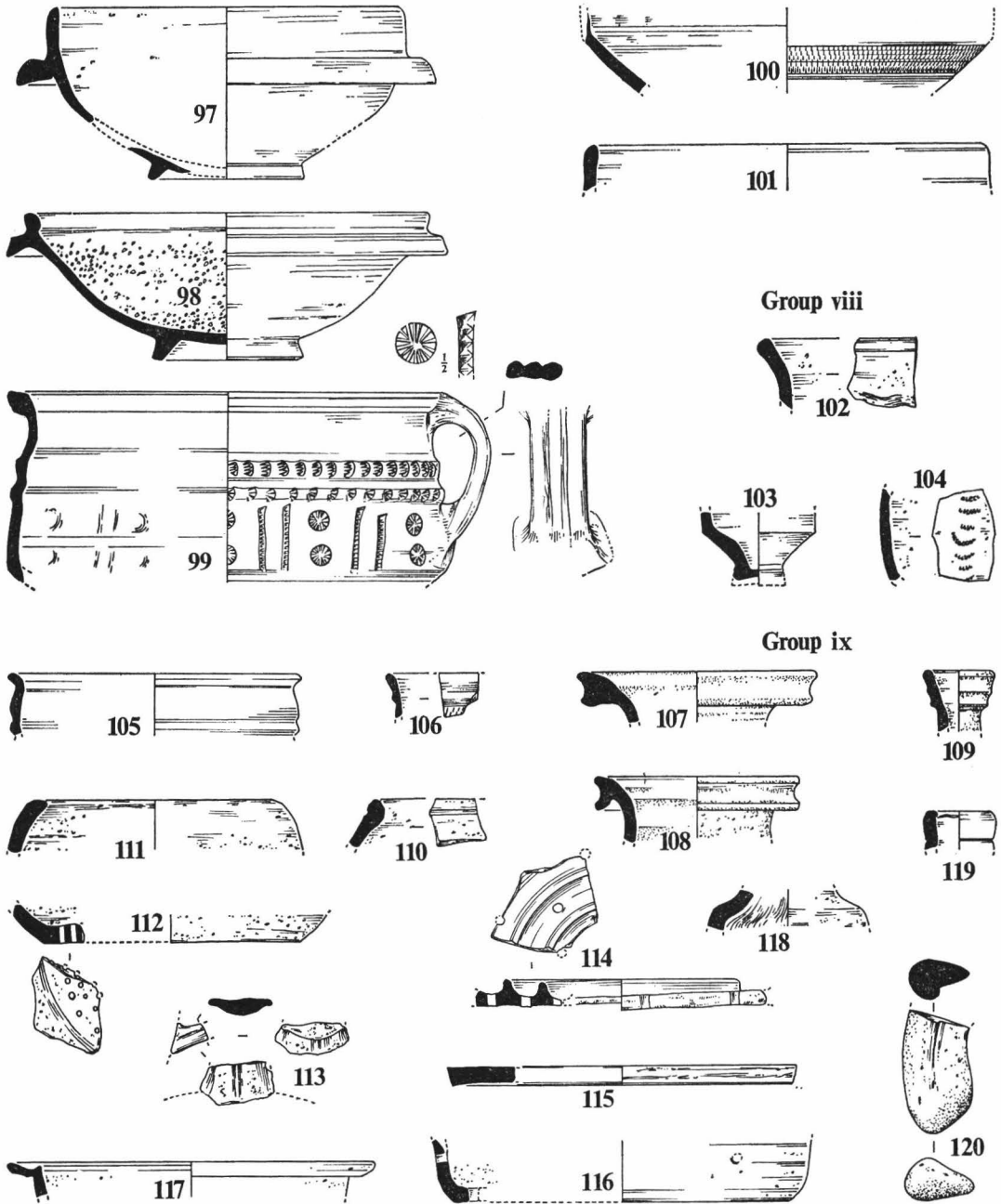


FIG. 76. Romano-British pottery; vessels 97-120. Scale $\frac{1}{4}$

- 99 Large bowl with 3-reeded handles and rosette, demi-rosette, and comb stamps (stamps illustrated X $\frac{1}{2}$). 'Chalky' orange-buff Oxford red colour-coated fabric with dull red slip. Though the bowl is illustrated with a single handle, as is usual, another handle was found in layer 2 and is from this or an identical vessel. Late fourth century.
- 100 Carinated bowl with rouletted zone beneath girth, at least. Oxford red colour-coated: buff-orange with brownish-orange slip.
- 101 Rim sherd, probably from the upper part of an imitation Dr. 38 colour-coated bowl. Possibly Oxford, but the source is uncertain; see 174 below in identical fabric and finish.

Group viii (nos. 102-4). Vessels from Feature 897, a partially excavated pit which may represent the flue of another corn-drying oven. Late fourth century.

- 102 Sherd of a jar or bowl of medium or large diameter probably in Severn Valley Ware; the only such sherd recovered at Bishopstone: fine smooth yellow flesh-coloured with small sparse brown and black inclusions; very slightly micaceous. Fast rotation marks int. The form is not incompatible with a Severn Valley source—see Portchester¹ 144.1, .2 and .4.
- 103 Small beaker in Oxford red colour-coated ware; heavily burnt.
- 104 Demi-rosette stamped Pevensy Ware bowl; very dark red/red-black slipped ext.

Group ix (nos. 104a-188). Vessels from the stone horizon of the rendzina soil (layer 2), together with significant unstratified material. The condition of preservation of sherds within Layer 2 is outlined in the introduction; the main concentration of late fourth century material was found near the centre of the northern part of the enclosure, apparently associated with a group of post holes, Structure LXII, though there was a general scatter of such material. Layer 2 also produced non-Roman pottery of all periods.

- 104a Sherd of a Terra Nigra platter, probably with hollowed base and redundant footing. Very badly worn, but c.A.D. 45-65. V. Rigby
- 105 Bowl imitating Dr. 30 or possibly 37. Red-surfaced Hardham/Pulborough micaceous ware. Late first or early second century; see Nh. 60-1.
- 105a *Not illustrated.* Sherd of a similar vessel (? Dr. 30) with black surfaces and rouletted zone.
- 106 Sherd of imitation Dr. 29 bowl; black surfaced, as 105a.
- 106a *Not illustrated.* Sherd of a biconical beaker or small carinated jar; as 105a.
- 106b *Not illustrated.* Cornice-rimmed beaker. Fine smooth/minute sandy micaceous orange with blue-grey core; slip lost. Late first to second century.
- 106c *Not illustrated.* Sherd of folded beaker; hard fine light blue-grey with black slipped surfaces.
- 106d *Not illustrated.* Rusticated beaker; fine smooth micaceous dark grey with a few quartz inclusions. Closely similar to Nh. 91-2. Late first century.
- 106e *Not illustrated.* Strap handle scar from a ?Hofheim flagon; soft flesh-buff grading to pink int. sand and grog inclusions, perhaps white slipped. Mid first century.
- 106f *Not illustrated.* Very small sherd of a 'Rhenish Ware' beaker; thinly made soft fine smooth 'chalky' with lustrous slip—deep dull red int., black ext. Rhenish or Lezoux, late second century or later.
- 107-8 Pulley-neck flagons; 107 soft flesh-buff sandy with brown-black inclusions and organic cavities; white slip (C). 108 soft friable greenish white sandy with grog, black grit and organic inclusions. Late-first to early second century; cf. Nh. 65-8.
- 109 Ring-necked flagon. Brick red-orange slightly micaceous very finely sandy with coarser quartz, black and red inclusions; cream slip. Late first or second century, not a locally common type.
- 110 Bead-rim jar, handmade, as 7 above.
- 111 Jar or bowl with incurved rim; handmade dark grey-brown E. Sx. Ware.
- 112 Base of colander vessel, pierced before firing. Handmade E. Sx. Ware with a good deal of calcareous filler, calcined flint, and ironstone.
- 113 Handle from a large E. Sx. Ware vessel. Brown-grey, with typical filler; surfaces burnt. No other E. Sx. Ware handles have been found as yet.
- 113a *Not illustrated.* Sherds from at least 8 E. Sx. Ware jars with slashed or thumbbed raised bands, all handmade.
- 114-6 Ridged base, flat pressure plate, and body sherd of cheese presses, fabric and finish as 31; the black inclusions are frequently seen as smeared flecks on the surfaces.
- 117 Finely made bowl with cupped flange-rim. Fine chalky flesh-pink with black, brown and red grog filler. Source uncertain.
- 118 Robust vessel of unknown form. Hard very finely sandy pale dull red, developing a blue-grey core; some organic cavities. Much twisted in throwing. Source and date unknown.
- 119 Flagon mouth. Soft very finely sandy slightly micaceous flesh-coloured with a chalky feel; red-brown grog inclusions.
- 120 Ceramic pestle improvised from the broken rim of a hard coarsely sandy Dressel 20 amphora; well worn in use. The remaining vessels are of late third or fourth century date.
- 121-4 Thundersbarrow Ware storage jars, all coil built; 123 is of particularly massive construction. The thumbbed decoration of the rims is like that of the type vessels from Thundersbarrow. 123-4 unstratified but almost certainly associated with Group v.

¹ M. G. Fulford, 1975a, op. cit.

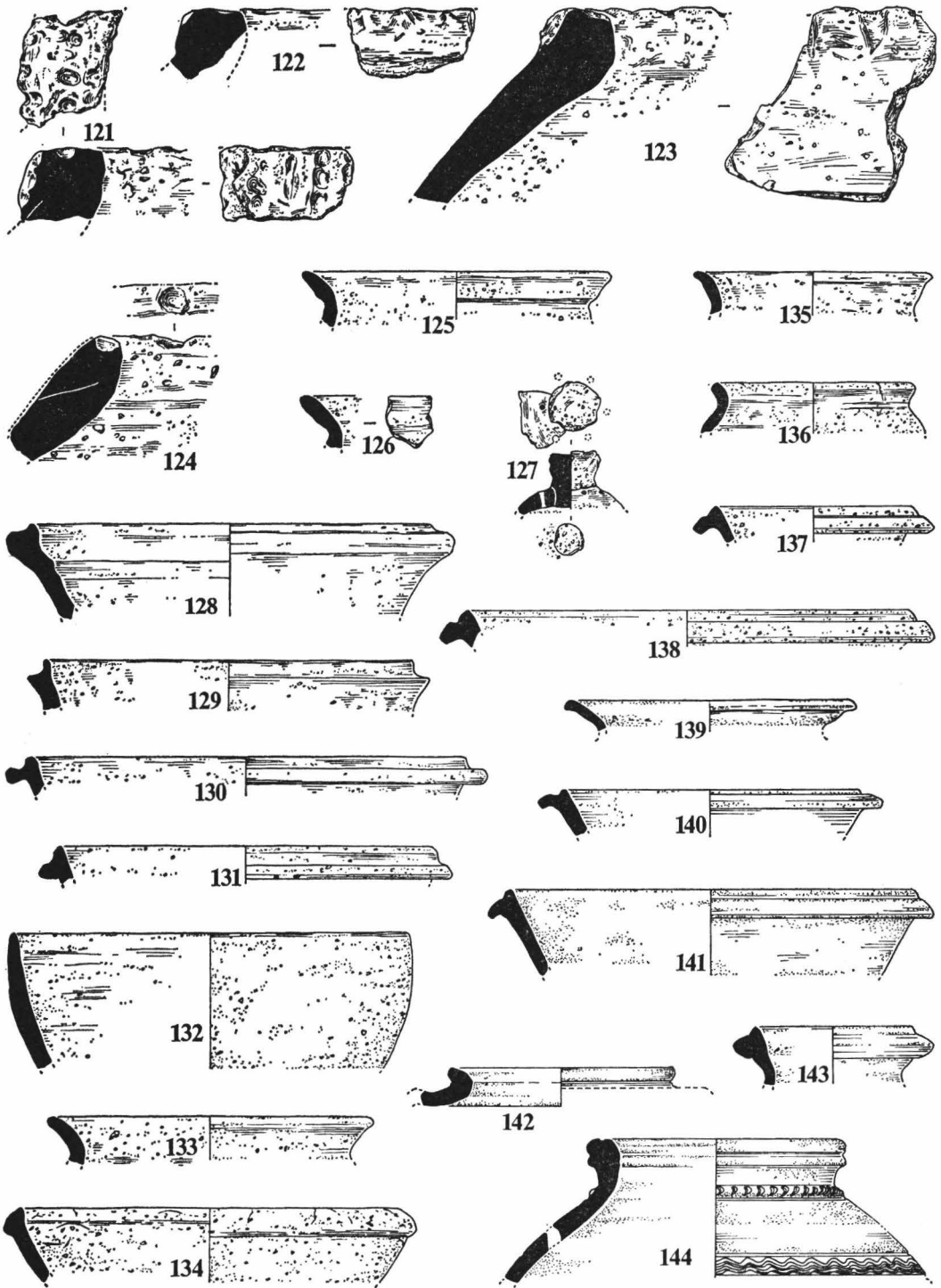


FIG. 77. Romano-British pottery; vessels 121-144. Scale $\frac{1}{4}$

- 125 Rim of a handmade grog-tempered jar, fabric very close to 91a, and very similar to Hampshire examples in form.
- 126-7 Everted-rimmed jar and small tang-handled perforated lid in E. Sx. Ware; both handmade, 127 very roughly so. 126 grey with calcined flint filler; black surfaces, burnished ext. (three further examples of varying form are not illustrated). 127 with rather large calcined and natural flint filler and grey and red grog; holes (? six) pierced before firing.
- 128 Handmade E. Sx. Ware bowl, much as 68 etc., but with stepped int. profile. Hard grey-brown with largish grog, chalk, ironstone and calcined flint inclusions. Surfaces abraded.
- 128a *Not illustrated.* Sherd of a similar vessel, but more lightly made, and with an upright smooth internal profile.
- 129 Sherd of a smaller but similar vessel with high thin rim.
- 130-1 Handmade E. Sx. Ware flanged bowls; grog is the chief filler in 130, 131 is vesicular with some natural flint and may be finished on a slow wheel.
- 132-3 Deep plain bowl and everted-rimmed jar; both handmade grog-tempered fabric G-T 1 as 39 above. Presumed late fourth century.
- 134-6 Bowl with thickened rim, everted-rimmed jar and small S-profile jar in an immediately distinctive grog-tempered fabric (G-T 2): hard highly fired brittle blue-grey rather open-bodied, liberally filled with grey grog and usually some chalk or limestone (c.1-2mm.), and rounded ? flint grits. The filler tends to stand proud of the surfaces, and a notable feature is the poor wedging of the clay, leaving air spaces and a fissured surface. All the vessels are burnt pink in places. 134-5 rather roughly handmade, 136 wheel-finished if not wheelmade. All presumed late fourth century. 136 is from the top fill of Pit 921 but probably merely as a result of silting.
- 137-8 Two flanged bowls wheelmade in a rather soft sandy fabric filled with grey grog and flint grits; 137 is a dirty pale orange-buff and 138 dirty grey-buff in colour. ? Local, fourth century.
- 139-141 Flaring-rimmed jar and two flanged bowls, all BB1, handmade, and probably fourth century.
- 142 New Forest hollow-shouldered jar; sandy slightly micaceous pale dull red with bluish-grey core and dirty light grey slip; perhaps altered by burning. c.A.D. 270-350.
- 143 Flanged neck of large round-bodied jar, probably in a fine variety of New Forest sandy fabric: hard dirty off-white with small black inclusions and some organic cavities. c.A.D. 270-350.
- 144 Storage jar with tripartite rim, slashed cordon and wave-combing on body. Alice Holt/Farnham sandy, with dark grey surfaces and remains of a white slip. Post A.D. 350
- 145-153 Bowls, a flaring-rimmed jar, base of a colander bowl and a handle in sandy Alice Holt/Farnham or New Forest Wares; most are probably from the Surrey rather than the Hampshire kilns. 145 is particularly well-known at Alice Holt, and the technique of leaving a void in the centre of the rim or flange (as in 149) is also known there. All probably fourth century.
- 154-7 Portchester fabric D/?Tilford Ware vessels.
- 154 Flanged bowl, dirty pink fabric.
- 154a *Not illustrated.* Another bowl with small round flange, as *Portchester*¹ type 87.2 (there c.A.D. 325-400) in a browner fabric..
- 155 Bowl with flattened rim, grooved int. and ext.; the fabric is unusually dark—a dull red with black surfaces and core (top soil above Structure XLVII).
- 156 Triangular-rimmed jar with rilled body. This is a small example; at least 3 others, in variously coloured fabrics, were represented by rims.
- 157 Mouth of a ?closed form, flesh-coloured fabric.
- 158 Small grooved bowl; sandy brown with slight greyer core and a little grog and much calcined flint filler; darker surfaces. ?Local, source unknown.
- 159 Triangular-rimmed jar; medium-hard bluish-grey sandy with larger quartz sand, black ?flint and grog filler, and some organic cavities. Probably an East Sussex greyware (?perhaps Hassocks area); there are parallels in the unpublished material from Pevensy. Many sherds of this fabric were recovered, probably representing at least two vessels. Fourth century.
- 160 Small flanged bowl, dark grey with coarse angular sand filler.
- 161 Robust hook-rimmed ?bowl; blue-grey sandy with small black inclusions: bluer core.
- 162 Jar with downturned rim; medium-hard bluish grey finely sandy with coarser sand filler; the grey-buff surfaces may be the result of weathering.
- 163 Bowl with flanged rim; very hard silver-grey finely sandy with small and large black inclusions and rough fracture. Finely finished, the surfaces largely wheel-burnished to a distinctive silvery sheen, but slightly pimply elsewhere. Fourth century.
- 164 Handmade finger-clawed storage jar, style as some Thundersbarrow Ware jars. Sandy slightly micaceous with frequent ironstone inclusions up to 2mm. Originally dark grey, now largely burnt red.
- 165 Flange of an Oxford mortarium: dirty pale orange with redder core; slipped white. Late third to fourth century.
- 166 White Oxford mortarium: very finely sandy off-white; well-sorted rounded/subangular white, grey and dull pink quartz trituration grits. Late third to fourth century.
- 167-73 Oxford red colour-coated vessels.
- 167 Mortarium of typical fourth century form; bright orange-red, massive blue-grey core, typical grits.

¹ M. G. Fulford, 1975a, *op. cit.*

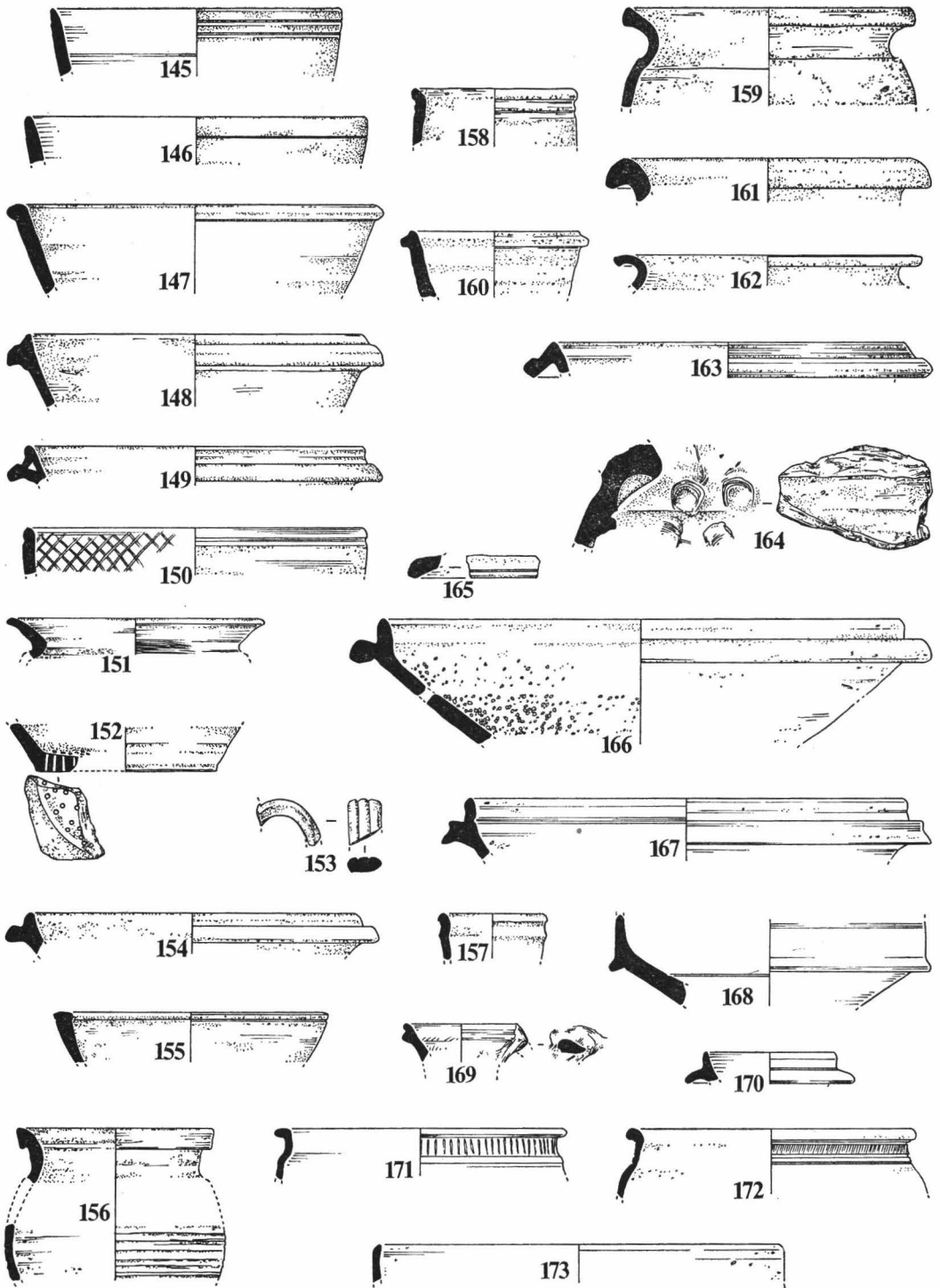


FIG. 78. Romano-British pottery; vessels 145-173. Scale $\frac{1}{4}$

- 167a *Not illustrated.* Mortarium, form as 98.
 168 Wall-sided bowl with internal groove; orange, slip lost. This is usually a mortarium form (*cf.* imitations of samian Dr. 45), but 168 seems never to have possessed any grits. Fourth century.
 169 Handled jug; orange with dark red/black slip.
 170 Pitcher neck with flange; dull orange with red/reddish-black slip.
 171-2 Bowls with rouletted necks; 171 grey-cored fabric; 172 pale orange with vermilion slip.
 173 Rim of imitation Dr. 38 bowl; bright orange with dull red core.
 174 Colour-coated bowl. Fine smooth dull orange-brown margins over massive blue-grey core; rough fracture, small brown grog and black inclusions, also minute organic cavities. Slipped brownish black. Source uncertain and perhaps local, although not unlike some Oxford types, the slip and form are not typical. 101 is also in this fabric.
 175 Rim of a jar in a fine almost smooth slightly micaceous dull orange colour-coated fabric; slightly laminar with small red and black inclusions and blue-grey core. Dull orange-red slip. Certainly not an Oxford or Pevensey product, and much more likely a product of the colour-coated kilns at Hadham, Herts. (Bromley Hall Farm); waste material (unpublished, Hertford Museum) closely resembles this sherd, and jars with similar rims were certainly made at Hadham. The Hertfordshire kilns are in fact slightly nearer to Bishopstone than the Oxford kilns, though their products are rarely found south of London.
 176-82 Vessels in Pevensey Ware (183-4 are more doubtful, but probably Pevensey types).
 176 Mortarium, the only example so far known in this fabric. Bluish-grey core, small angular white, yellowish and black flint, and a few white and clear round quartz trituration grits. The sherds are much weathered and abraded, and the rim is incomplete—it may have been of a different form to that indicated in the illustration.
 177-8 Bowls with comb-stamping and (177) part of a rosette or demi-rosette stamp.
 179-80 ?Plain small bowls; 180 is of an unusual form for a colour-coated type.
 181 Rouletted bowl; dark red slip. This is the only rouletted Pevensey vessel from Bishopstone.
 182 Imitation samian Dr. 36 variant bowl; this type would normally have been decorated with a white slip-painted design on the rim as a substitute for the samian 'lotus leaf' motif. Three examples were found, of which the largest is illustrated; all were in a slightly coarser fabric than the other Pevensey vessels (see fabric descriptions).

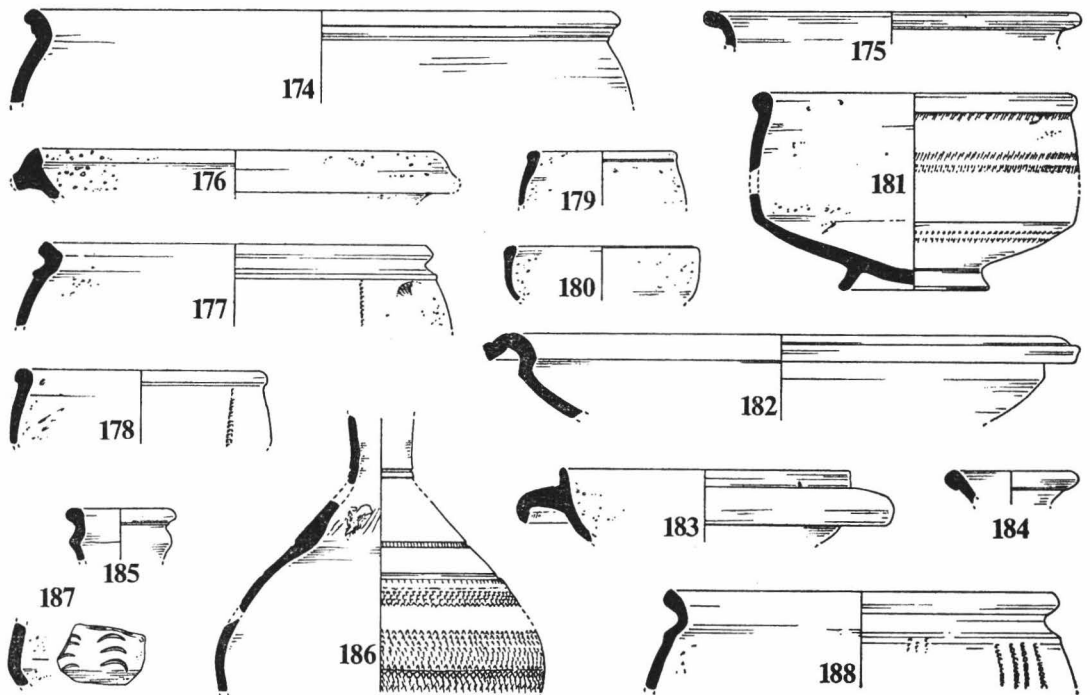


FIG. 79. Romano-British pottery; vessels 174-188. Scale $\frac{1}{4}$

- 183 Hook-flanged bowl; tough fine smooth pale dirty pink-flesh coloured with massive pale dull blue-grey core; a few red-brown and black inclusions. Surfaces retaining traces of a striking blood red slip. Perhaps a Pevensey product in a rather fine fabric.
- 184 Mouth of a closed vessel in a fine fabric generally comparable with 183, but obviously much altered by weathering or burning; probably Pevensey.
- 185-8 New Forest colour-coated wares and vessels in similar fabrics.
- 185, 7 and 8. 'Pulley-wheel' necked jug, lunette-stamped bowl and comb-stamped bowl in similar fabrics and slips: soft-medium almost smooth white or cream, sometimes with flesh-coloured core; 187-8 contain small red-brown inclusions. All slipped deep red grading to black. The fabric is typical of New Forest Wares, but while 185 is a well-known New Forest form, 187-8 are unknown from the New Forest. 188 is however paralleled from unpublished material at Pevensey.
- 186 Rouletted and grooved flagon; medium-hard brittle fine almost smooth very light bluish-grey, weathering whiter. Dark red/black slip. Again a typical New Forest fabric, but the attribution is a little doubtful since rouletting rarely occurs on New Forest vessels of this general form.
- 186a *Not illustrated.* Plain body sherds of an undoubted New Forest flagon; fabric much as 187-8, slip brownish-red ext., orange int.

The fourth-century pottery—summary

Table VIII: *Relative quantities of recognized fourth-century fabrics from pottery Groups v-ix (excluding unidentified 'grey wares'; doubtfully distinct vessels count as ½; * indicates that a total is likely to be significantly underestimated).*

	Minimum no. of vessels		Weight of sherds	
	No.	% of total	Gms.	% of total
Thundersbarrow Ware	8.5	6.0	3250	33.7
East Sussex Ware	13.5*	9.0	945*	9.8
Grog-tempered G-T 1	3.0	2.1	150	1.6
Grog-tempered G-T 2	3.0	2.1	100	1.0
Grog-tempered others	3.0*	2.1	280*	2.9
Black-burnished 1	4.5	3.2	80	0.8
Alice Holt or New Forest sandy (undifferentiated)	16.5	11.7	1005*	10.4
Portchester fabric D/?Tilford Ware	14.0	9.9	810	8.4
Severn Valley Ware	1.0	0.7	20	0.2
New Forest Parchment Ware	1.0	0.7	60	0.6
New Forest colour-coated (certain)	3.5	2.5	85	0.9
New Forest colour-coated (doubtful)	5.0	3.6	130	1.3
Oxford white (mortarium)	1.0	0.7	250	2.6
Oxford red colour-coated	28.0	19.8	1405	14.6
Pevensey Ware	29.0	20.5	965	10.0
Hadham Ware	1.0	0.7	10	0.1
Colour-coated, source unknown	6.0	4.2	90	0.9
	141.5	99.5	9635	99.8

Statistical information on the material is given in Table VIII and presented geographically in Fig. 80, where the Alice Holt and New Forest sandy wares have been arbitrarily weighted as 2/3 and 1/3 respectively.

(a) *Date.* External dating evidence for the pottery was very poor at Bishopstone: four coins of around A.D. 320 and two post-A.D. 350 (the last possibly A.D. 367-78) may simply reflect the uneven availability of coinage in the fourth century. The most reliable evidence is the stratified sequence at Portchester, and more generalized impressions of stylistic tendencies over the period. Clearly, much of the Bishopstone material belongs to the second half of the century. All the late pits contained a generally similar assemblage including Portchester Fabric D/?Tilford Ware (in Groups v, vi, and vii) and Pevensey Ware (in Groups vi, vii and viii)—both these wares are post-c.A.D. 325 and most common post-c.A.D. 350. Stamped decoration was general on the imitation samian bowls from the pit groups, and this, as well as the rilling on the bodies of some

triangular-rimmed jars, tends to suggest dates post-A.D. 350 (see Appendix). It seems at least possible that pit Groups v-viii are of closely similar dates and were filled when the site was abandoned.

The coin of ? A.D. 367-78 cannot be reliably taken as a *terminus post quem*, and the date by which the site was disused must remain a matter of conjecture. The *latest possible* date—that at which wheelmade Romano-British pottery ceased to be produced in the South—is not certainly known, but is arguably to be associated with the collapse of the money economy in the first quarter of the fifth century. There is no reason to think that the majority of late handmade vessels form a late 'sub-Roman' group—indeed East Sussex Ware had been something of a local staple since the first century A.D. However, it remains *possible* (though quite unproven) that some grog-tempered wares are of 'sub-Roman' date. Scientific excavation at Pevensey may one day help to solve these problems.

Alongside the late fourth century types were found a few types which are *pre c.A.D. 350* at Portchester and elsewhere. This was particularly noticeable in the case of the Oxford colour-coated vessels (see Appendix), and it is likely that there was some form of settlement at Bishopstone for much of the century. It is difficult to doubt that occupation was more intensive towards A.D. 400, however.

(b) *Sources.* The rose diagram (Fig. 80) presents what seems to be a fairly predictable pattern for the sources of pottery made at the major production areas. The only apparent anomaly—the large quantity of Oxford Ware—is discussed in the Appendix.

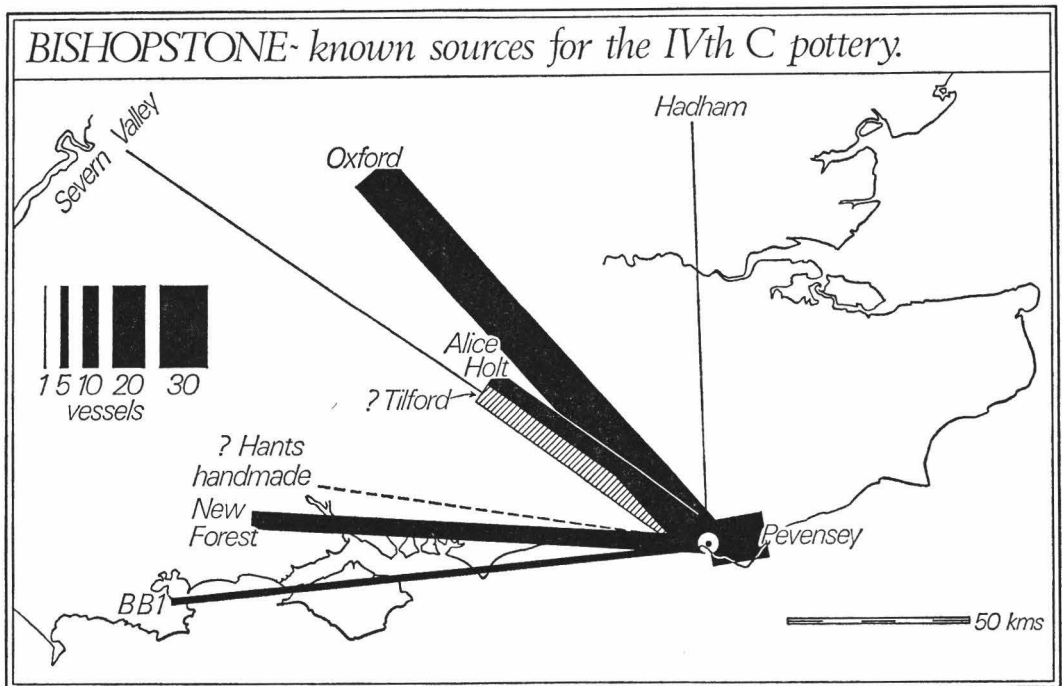


FIG. 80. The known sources of fourth century pottery at Bishopstone

The question of the locally produced pottery is more difficult. A number of E. Sx. Ware vessels were recognizable as fourth century from their forms or associations within pits or amongst concentrations of colour-coated pottery in layer 2. Other types may be unrecognized and the total of late handmade pottery thus underestimated. However, the excavation of layer 2 near Structure LXII, gave the impression that E. Sx. Ware was *not* proportionally more abundant where nucleations of known fourth century wheel made pottery were found—i.e. that the E. Sx. Ware industry was in a *relative*, if not absolute decline in the fourth century. This contrasts with the Hampshire Grog-Tempered Ware industry, which flourished alongside massive imports of fine colour-coated wares.

The locally made grey wares remain an unknown quantity. Certainly their place in the market must have suffered in inverse proportion to the quantities of Surrey coarsewares (from Alice Holt and ?Tilford) reaching East Sussex. The discovery of presumed grey-ware kilns at Hassocks is still awaited. BB1, though, reached Bishopstone in such small quantities as to suggest 'stray' vessels rather than any regular trade. Very possibly this was a long-established situation: BB1 was perhaps always largely excluded to the east of, say, the Adur by E. Sx. Ware (which itself is rarely found to the west), and custom and better markets elsewhere may have maintained the trading pattern.

General Summary

Individual sherds can be cited for all periods from the Claudian or Claudian/Neronian at Bishopstone, but it is often more difficult to point to quantities which might indicate 'occupation' rather than 'casual use.' Diagnostic types such as butt-beakers and *terra nigra* are not common finds in East Sussex, and so it is practically impossible to estimate the extent of immediately post-conquest occupation. (In any case, the emphasis should perhaps be laid upon a *continuity* with Iron Age tradition, rather than 'Romanization,' in this period). Late first and early to mid second century occupation associated with the enclosure ditches was much in evidence, accompanied by a range of common South and Central Gaulish samian types. The coarse pottery of this period is mainly remarkable for the continuance of ultimate Iron Age ceramic traditions in E. Sx. Ware. Until more is known of third century pottery in East Sussex it will be difficult to decide whether late second and third century occupation was as slight or sporadic as it seems. East Gaulish samian of the late second to early third century was present, but the silting of the enclosure ditches suggests that there was a real, as well as apparent, decline in activity on the site in the third century and that the current state of knowledge about the coarsewares has not been grossly misleading in this instance. Finally there is much ceramic evidence for fourth century occupation, especially between A.D. 350 and 400.

Appendix:

The relationship of the Oxford and Pevensey colour-coated industries

The Oxford colour-coated and Pevensey wares alone lent themselves readily to comparison at Bishopstone; each source was represented by nearly 30 vessels (only the local grog-tempered wares and perhaps the 'grey' wares accounted for comparable quantities), and each was produced in a number of almost identical forms. However, a comparison of the forms in which each fabric occurred at Bishopstone (Fig. 81) shows a degree of mutual exclusiveness. In particular the more generalized samian imitations—the 'S'-profile and carinated bowls—occurred with rouletted decoration in Oxford fabrics and with stamped decoration in Pevensey Ware. At

Portchester (*Portchester*¹ types 35-7) it was noted that rouletted Oxford types were commoner before, and stamped types after, c.A.D. 350. The Porchester evidence, and the unconformity of the types in each fabric at Bishopstone, may suggest that in fact the main bulk of the Oxford and Pevensey wares were arriving on the site at different dates—the locally made Pevensey wares understandably becoming more popular than their Oxford counterparts (produced 140km./87 miles away) after the mid fourth century. A *floruit* for Pevensey after c.A.D. 350 has already been suggested by Fulford.²

This interpretation may account for some features of the fourth century assemblage at Bishopstone. Most obviously, the very high proportion of the pottery arriving from Oxford (see Fig. 80) is not easily explained unless Pevensey types were not always available. Secondly, most of the late pits (Groups v-viii) contain coarsewares which point to dates post A.D. 350, and, ignoring decoration for the moment, they do not contain large or fresh sherds of Oxford wares in forms also produced at Pevensey. Clearly contemporary Oxford vessels from the pits seem to be limited to the rosette-stamped handled bowl (99) and a mortarium (98)—types unknown, or rare, in Pevensey Ware. But Groups vi-viii all produced freshly broken or substantial Pevensey sherds. In short, it seems that the Pevensey industry started, or became large enough to make Oxford ware superfluous, after the mid-century; thereafter only specialized types of Oxford vessel came to the site.

BISHOPSTONE: Oxford and Pevensey ware forms

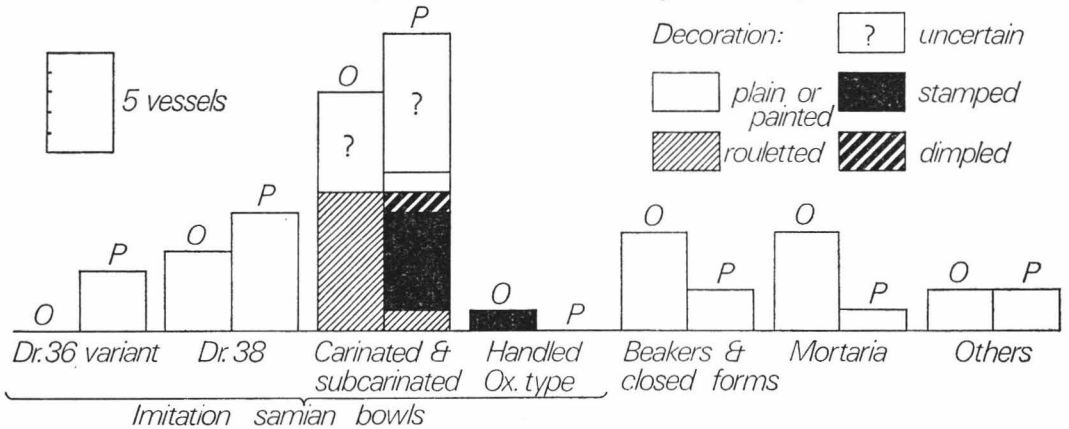


FIG. 81. Comparison of the vessel forms of Oxford and Pevensey wares

¹ M. G. Fulford, 1975a, op. cit.

² M. G. Fulford, 1973, op. cit.

THE SAMIAN POTTERY

by Joanna Bird

With few exceptions, the samian sherds were small and/or much abraded; in all only about 950 gms. of material was recovered. The vessels are grouped here as for the rest of the R-B pottery, material from other features being added in the appropriate chronological position. The following conventions and abbreviations are used: 27, 31, 33, etc. for Dragendorff forms; other authors' forms are prefixed. EG, CG and SG for East, Central and South Gaulish sources; date ranges by dynasty or by century.

Group i 18R SG, Flavian.

Group ii All from the enclosure ditch, Layer 2, except * from Layer 3.
18 SG, Flavian; two sherds, one with the corner of a stamp remaining.
18/31 CG, probably Trajanic/Hadrianic*.
27 CG, (probably Lezoux) Flavian.
33 CG, second century.
37 CG, Hadrianic.*
? CG ?

Group iii 18/31 CG, second century.
18/31 CG (Les Martres), early third century.
? (bowl) CG (Les Martres), early third century.
37 (small) CG (Les Martres), early third century.
35 SG, Flavian.
37 SG, Flavian/Trajanic.
37 (fragmentary decoration) CG, Hadrianic/Antonine.
? SG ?
? CG ?

Feature 729, a pit, second century.

31 CG, late second century.

Feature 917, a pit, probably second century.

Base of a small beaker or jar, CG, Hadrianic/Antonine.

Group iv (probably third century: all the samian may be residual)

31 CG, late second century.

31, stamped IVCV (*Nq* VF) Die 5a, Iucundus v. The die is known from Rheinzabern, and there are examples from Ilkley and the Stockstadt Erdkastell (replaced in the Antonine period), and on forms 31R and 32. Another stamp comes from Niederbieber. He was probably one of the earlier Rheinzabern potters, working c. AD 160-200.

Brenda Dickinson and B. R. Hartley

37CG, decorated, probably in the style of Paternus 2, 145-190.¹

? (bowl) EG, second century.

Group v (Late fourth century: samian is residual).

27 or 33 CG, late first to mid second century.

38 EG, late second to early third century.

Group vi (Late fourth century: samian is residual).

Ritterling 9 SG, pre-Flavian.

18/31 CG, second century.

27 SG, Flavian/Trajanic.

27 SG, Flavian.

27G SG, first century.

33 CG, Antonine.

36 CG, second century.

37 CG, second century.

Déchelette 67 SG, Flavian.

? EG, late second to early third century.

Group ix (layer 2, unstratified, with residual sherds from other late features).

Ritterling 12 or Curle 11 SG, pre- or early Flavian; two sherds.

Curle 11 SG, early Flavian.

Curle 11 ? ?

Curle 11 EG, mid second century.

18 SG, Flavian; three sherds.

18R SG, late first century.

18/31 CG, second century; six sherds.

18/31 EG, second century.

18/31 CG, early second century.

18/31 CG, ? early to mid second century.

¹ J. A. Stanfield and G. Simpson, *Central Gaulish Potters* (1958), pp. 194-8.

18/31 or 31 CG, second century.
 Curle 21 CG, late second century.
 27 SG, first century; five sherds.
 27 or 33 CG, early second century.
 29 SG, pre- or early Flavian.
 ?30R CG, second century.
 31 CG, second century; two sherds.
 31 CG, late second century.
 31 EG, late second to early third century; two sherds.
 ?31 C or EG, late second century.
 31R C or EG, late second century; three sherds.
 33 CG, late second century; two sherds.
 33 CG, late second century; three sherds.
 33 CG, Antonine.
 36 SG, late first century; two sherds.
 36 SG, late first or second century.
 37 decorated CG, Antonine.
 37 decorated SG, Flavian/Trajanic.
 37 decorated CG, second century.
 Déchelette 67 SG, Flavian/Trajanic; two sherds.
 and a number of indeterminable sherds, many burnt beyond recognition.

THE ROMANO-BRITISH SMALL FINDS

The objects of Clay

Romano-British features produced a total of 640 pieces of daub weighing 7,054 grams. 262 of these had impressions of circular or rectangular wattles. By comparison with the Iron Age period fired clay objects, except tiles, were relatively few.

1. Segments of a discoidal spindle whorl, original diameter 4.8cm. Made from a sherd of East Sussex Ware. Found in the west ditch of the enclosure, layer 1.
2. A counter chipped from a thick sherd of East Sussex Ware. From the cross-ditch, layer 2.
3. A sling bullet of red clay with no obvious filler. Similar to examples from the early Iron Age settlement (C6 and C7). This example was from Pit 780, layer 1.

Tiles. The 290 Romano-British tiles are classified in Table IX. Generally speaking they appeared to be of a different fabric from the Newhaven examples. Many of them are likely to have been brought to the site for re-use and some had once formed part of a stone building. Thirteen unstratified examples had *opus signinum* adhering to the surface, and others from the enclosure ditch had patches of white mortar. Some, particularly floor tiles, the predominant type, are likely to have been used in corn-drying ovens.

4. A thick combed floor tile from Pit 777.

Table IX. Classification of the Roman tiles

	Combed box	Combed floor	Floor	Tegulae	Imbrices	Fragments too small for classification	Total
Enclosure ditch	—	—	16	3	2	16	37
First to third century pits	1	1	2	—	—	1	5
Fourth century	—	2	11	1	2	7	23
Unstratified	1	1	50	9	13	151	225
Total	2	4	79	13	17	175	290

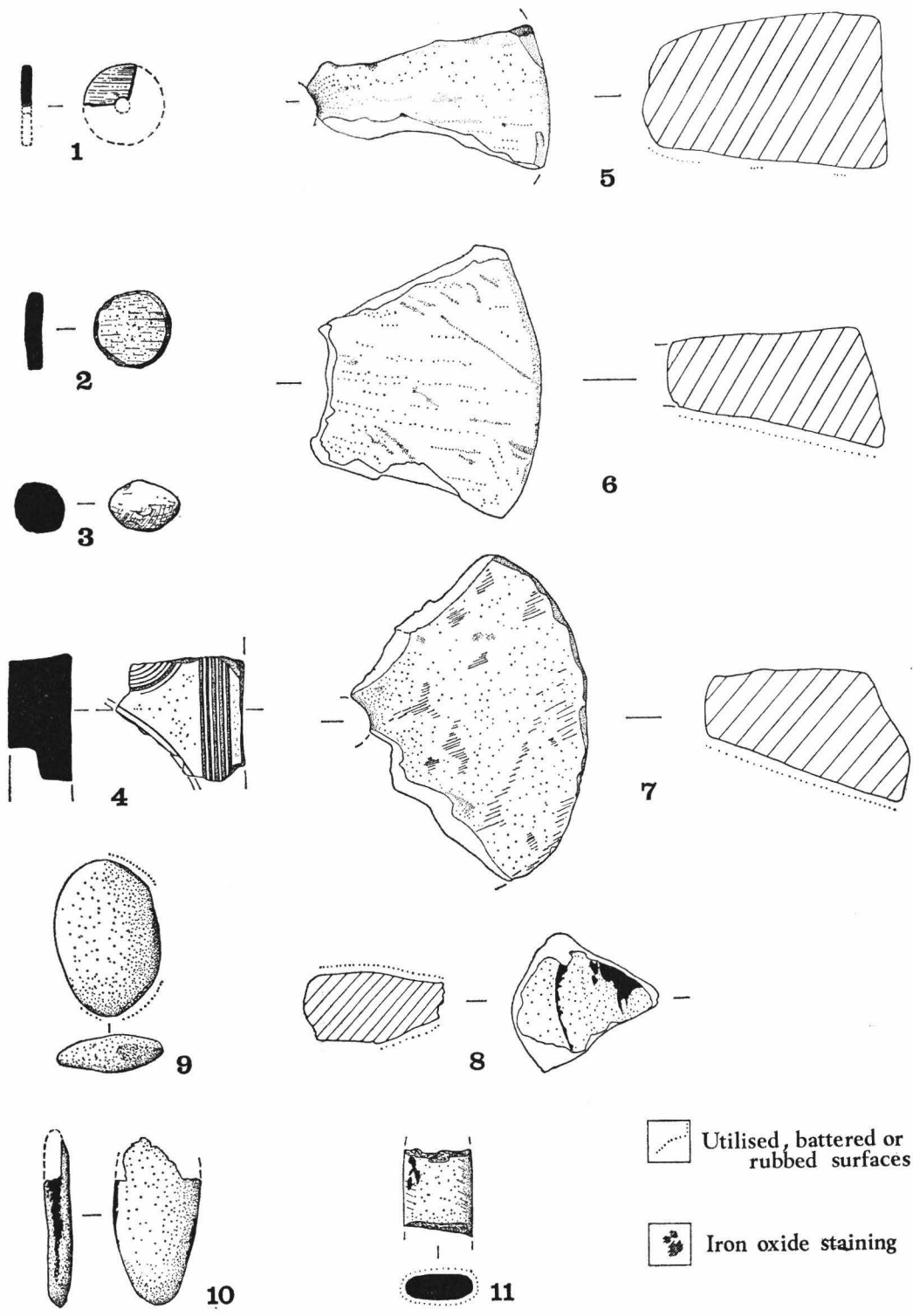


FIG. 82. Objects of clay 1-4, and stone 5-11, with a key to the symbols for utilisation. Scale $\frac{1}{4}$

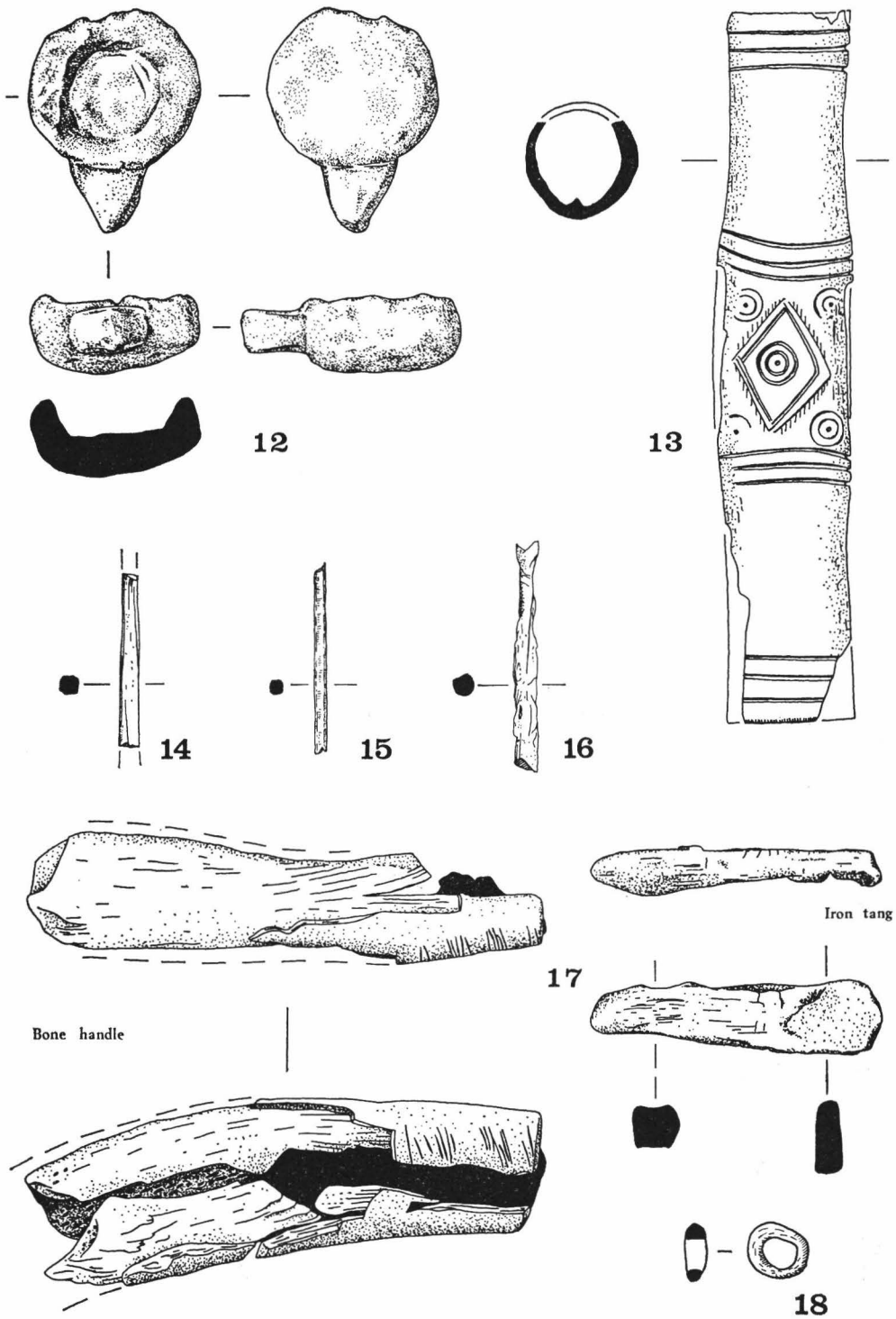


FIG. 83. Chalk object 12; bone objects 13-17; glass bead 18. Scale 12, $\frac{1}{2}$; remainder $\frac{1}{1}$

Stone objects

Querns. There were seven segments of rotary querns all made from Lower Greensand. Of these, three have been selected for illustration.

5. Segment of the upper stone of a rotary quern with a central perforation and grinding surface worn smooth through use. Re-used as a packing wedge in posthole 758.
6. Part of the upper stone of a rotary quern, smooth grinding surface. Re-used as packing in posthole 958.
7. Segment of the upper stone of a rotary quern with a central perforation and smooth grinding surface. From Pit 897.

Not illustrated. Four pieces of Lower Greensand rotary quern from the corn-drying oven. Only the grinding surface was preserved, and the stone must have been in excess of 10cm. thick. On the grinding surface were tooled lines. Large, but thinner, querns with grooved surfaces are known from late Roman contexts at Pevensy and West Blatchington.¹

Stone Rubbers

8. A piece of silicified sandstone, probably an Eocene residual, broken round the periphery but with two original dished surfaces preserved, both of which had been rubbed smooth. One of them had iron oxide staining suggesting use as a whetstone. The orientation of the marks indicate that rubbing took place in a circular fashion as if on a lathe. From the ditch on the west side of the enclosure, layer I.
9. A foreign stone beach pebble of metamorphic origin. At each end is an oval area of battering showing use as a hammer. A small area of iron oxide staining on one side suggests that it has also been used as a whetstone; on the same side there was a small zone of polish. From Pit 729.
10. A pebble of metamorphic origin with iron oxide staining down both sides where it was used as a whetstone. Subsequently it was broken and burnt, then deposited in Pit 729.
11. Part of a whetstone made from very fine grained sandstone unlike anything found in the locality. The entire surface was rubbed and there were slight striations at about 60° to the edge. In addition there was a small patch of iron oxide staining. From the west ditch of the enclosure beside Pit 729.

Not illustrated. Beach pebbles used as whetstones and stained with iron oxide were also found in Pit 777 and the corn-drying oven. Similar pebbles used as hammers came from Pits 729, 878 and the enclosure ditch. It is noteworthy that both types of artifact were present in late Iron Age features.

Chalk Objects

12. A carefully carved object of chalk, the raw material being of a fairly soft type like that encountered on the site. The object was bowl-shaped with a projecting triangular handle. Round the interior of the bowl and on the handle there were cut marks left from the original carving, but most of the surface had been rubbed smooth. The rim of the bowl had become chipped in prehistory. It might be described as a spoon or lamp but exhibited no trace of sooting. The only comparable object of which the writer knows are clay spoons² and chalk cups³ of the Neolithic period. There was no evidence to suggest that this example was of that date. Pit 921, in which it was found, was probably Romano-British.

Not illustrated. A roughly chipped chalk spindle whorl weighing 42 grams. Unstratified in the top soil above Structure LXII.

Bone Objects

13. The shaft of a sheep's metapodial with the proximal and distal ends cut off and only part of the circumference preserved. The surface had been rubbed smooth and was divided into three compartments by four groups of three incised lines. The two outer compartments were left blank but the inner one was decorated. At its centre was a small dimple and around this two compass drawn circles. A diamond shape had been carved to enclose these and was emphasised by a second slightly larger diamond around it. Finally double circles like that in the centre were made in the four panels formed by the outside of the diamond. Small areas of this decoration had been rubbed away through use and there are suggestions that, before breakage, there may originally have been sockets on either side of the decorated panel. If so, it was similar to Romano-British toggles from St. Pancras cemetery, Chichester.⁴ The decoration is paralleled by that on Iron Age toggles and cheek pieces which were made from antler and bone; examples are from Glastonbury⁵ and Meare⁶ lake villages, and All Cannings Cross.⁷ The size of the Bishopstone example and the wear on the surface suggests that it might have been a handle rather than a toggle. Found in the cross-ditch beside Pit 771.
- 14-15. Two bone pin shafts found in the corn-drying oven.
16. Bone pin shaft from the west ditch of the enclosure, layer 1.

¹ E. C. Curwen, 'Querns,' *Antiquity*, vol. 11 (1937), p. 133; and N. Norris and G. P. Burstow, 1950, *op. cit.*, pp. 50-52.

² J. E. Couchman, 'Neolithic spoons and bronze loops,' *S.A.C.*, vol. 61 (1920), pp. 65-79.

³ S. Piggott, *The Neolithic cultures of the British Isles* (1954), pp. 85-6.

⁴ A. Down and M. Rule, *Chichester Excavations*, vol. 1 (1971), p. 82, No. 9 and p. 87, No. 228.

⁵ A. Bulleid and H. St. George Gray, *The Glastonbury lake village*, vol. 2, 1917, Plate LXIV, No. 153 and Plate LXVI, No. 20.

⁶ A. Bulleid and H. St. George Gray, *The Meare lake village*, vol. 1 (1948), Plate XXI.

⁷ M. E. Cunnington, *The early Iron Age inhabited site at All Cannings Cross* (1923), Plate 12.

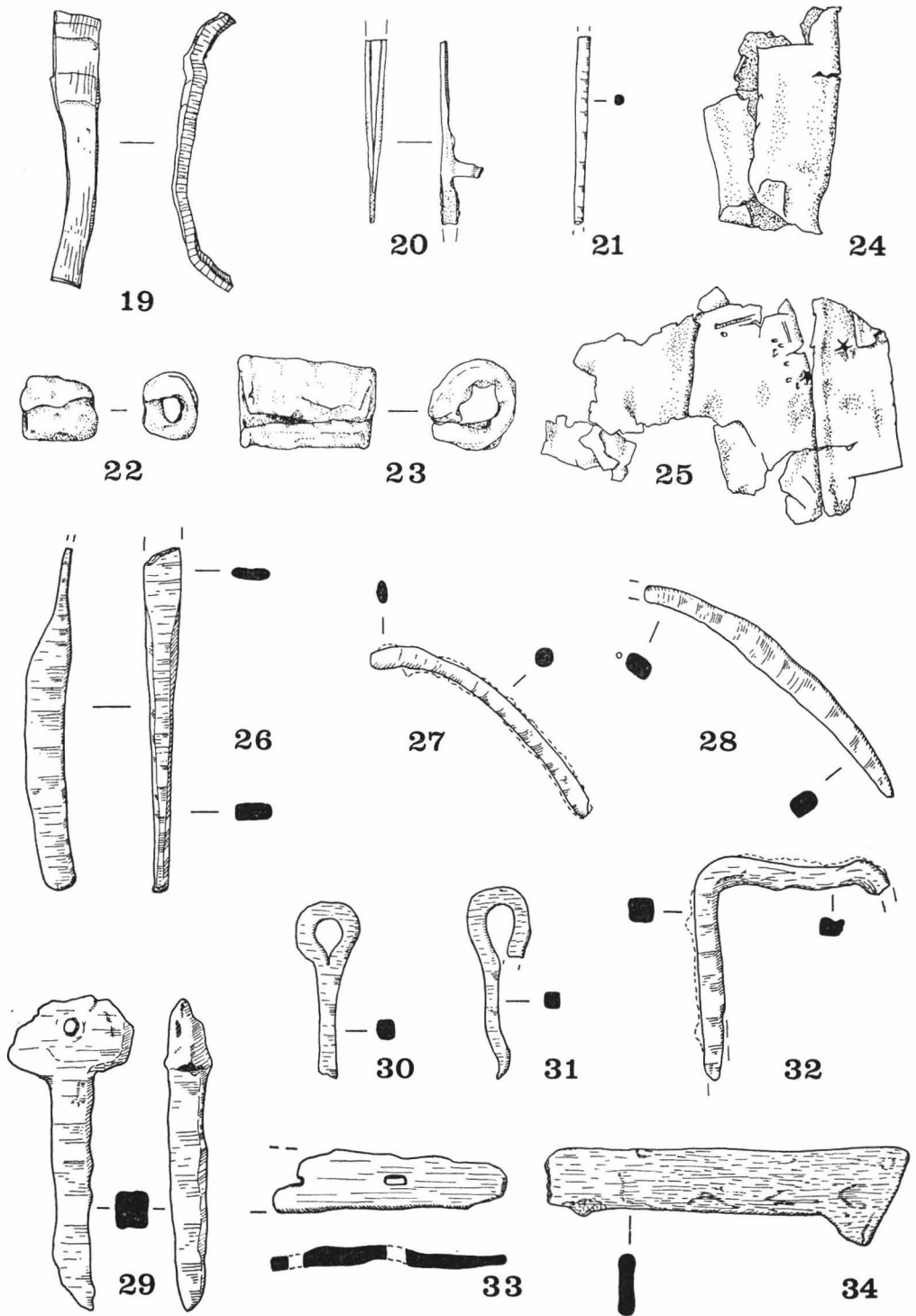


FIG. 84. Metal objects 19-34. Scale 19-21, $\frac{1}{2}$; remainder $\frac{1}{4}$

17. A bone handle in which part of an iron object was mounted. The handle was damaged by burning but originally had a smooth surface on which a number of cut marks were visible. The piece of iron it contained was evidently the tang of an object which had broken off in the handle. The end of the tang was square but became broader and of more rectangular shape towards the blade suggesting perhaps that it might have been part of a knife or saw. No rivet holes were preserved in the handle by which the tang might have been secured. From Pit 890.

Glass Object

18. A small green glass annular bead from the corn-drying oven, layer 1.

Bronze Objects

19. A roughly cut strip of bronze from Pit 729.
 20. A piece of bronze fitting or binding from Pit 729.
 21. Shaft of a bronze pin from Pit 891.
Not illustrated. A blob of bronze weighing 5 grams from the corn-drying oven.

Lead Objects

- 22-23. Two strips of lead bent round to form hollow cylinders used as weights, perhaps in fishing. A similar example described as a net weight comes from Portchester Castle.¹ These examples were found together in the earthworm sorted zone of the top soil, and are not therefore securely stratified. However they were above Structure LXII, where there was a distinct nucleation of fourth century pottery in the top soil.
 24-25. Folded pieces of lead sheeting. No. 25 has two nail holes. Both were unstratified finds from the top soil near the corn-drying oven.

Iron Objects

26. The tang of an iron tool rectangular at the end but broadening out to a flat blade where it has broken. From the west ditch of the enclosure.
 27. Curved iron bar of circular cross section becoming oval towards one end. From the corn-drying oven.
 28. The tang of an iron tool rectangular at one end but becoming flatter towards the other end. From the west side of the enclosure ditch.
 29. A bar of iron with a square cross section, hammered into a wedge-shape at one end where it was perforated by a small hole. Possibly a lynch pin but lacking the characteristic terminals in the shape of an inverted U. From top soil near Pit. 917.
 30. An eyelet spike similar to an example from Portchester Castle.² From Pit 891.
 31. A split spike loop; comparable examples come from Verulamium³ and Gadebridge Park⁴ where the way in which they were used is described. From Pit 891.
 32. A U-shaped clamp made from a bar of iron with square cross section, broken across one of the corners. Somewhat similar to object 31 from the Iron Age site. This example was found in the west ditch of the enclosure.
 33. Fragment of iron binding perforated by two rectangular holes, across one of which it had been broken. From the enclosure ditch on the west side.
 34. A flat strip of iron becoming wider at one end, possibly the tang of a knife. From the enclosure ditch on the west side.

Not illustrated. A flat strip of iron folded round to form a small ring, from Pit 729.

Nails (Fig. 85). Forty-four nails were found in Romano-British features. The length and head diameter of each is summarised on the graph. In addition there were 21 shafts which are plotted only on the horizontal axis. Examples of the nails are illustrated above the graph. They may conveniently be considered in terms of the four main types identified in the larger sample from Newhaven.⁵

Type I. Length 0-2.4cm. Represented by 15 nails found in a mass in the cross-ditch beside Pit 777, and probably the remains of a shoe. They had a large domed head accounting for between $\frac{1}{4}$ and $\frac{1}{2}$ of the nail's total length.

Type II. Length 1-2cm. Smaller head in proportion to the shank. Represented by a single example.

Type III. Length 2-8cm. The majority of the nails were of this type; generally they had round flat heads. As at Newhaven, examples at the larger end of the size range tended to have rectangular heads. They were probably used for joining small timbers and the fixing of fittings.

Type IV. Length over 8cm. Five examples which with one exception have rectangular heads and shanks. The exception is No. 42 with a conical head and round shank. No. 44 is bent in such a way that it might have been used as a wall hook. The type is likely to have been used for joining main constructional timbers.

These four classes should be regarded as no more than rather arbitrary divisions of Dr. W. H. Manning's Type I.⁶ All the Bishopstone and Newhaven nails were of this type, his Type II with triangular head no thicker than the stem being absent on both sites.

¹ B. W. Cunliffe, 1975a, op. cit., Fig. 123, 167.

² B. W. Cunliffe, 1975a, op. cit., Iron object 225.

³ S. Frere, *Verulamium Excavations*, vol. 1 (1972), pp. 184-186, Nos. 90-94.

⁴ D. S. Neal, *The excavation of the Roman villa at Gadebridge Park, Hemel Hempstead, 1963-8* (1974), objects 529-41.

⁵ M. G. Bell, 1976, op. cit., pp. 293-294.

⁶ W. H. Manning, 'Objects of Iron,' in D. S. Neal, 1974, op. cit., p. 173.

THE ROMAN COINS

Nine Roman coins were found, unfortunately none of these was stratified. Most were found in the part of the site which was pasture and came from the stone horizon of the earthworm sorted zone of the top soil; others were found in the plough soil of the adjoining field. The following identifications have been provided by Dr. Richard Reece.¹

1. From the fill of the negative lynchet in the east corner of the site.
Licinius II 317-320 A.D.

X
R.I.C. 7; 11N Heraclea 54.
SMHB

2. Top soil above Structure LXII
Marcus Aurelius 161-180 A.D.
as R.I.C. 1029
3. Top soil above Structure LXII
Gratian? 367-378 A.D.
Rev as L.R.B.C. 299
4. Plough soil, south corner of excavations.
Barbarous radiate 270-290 A.D.
Rev Pax Aug.
5. Top soil above Structure LXIII
House of Constantine 350-360 A.D.
Copy as L.R.B.C. II, 25
6. Top soil 7m. south of corn-drying oven.
Faustina II 161-180 A.D.
R.I.C. (M. Aurelius) 1619
7. Top soil east corner of excavations.
Constantine I 322-324 A.D.
R.I.C. 7 Trier ——— 341
PTR
8. Plough soil 22m. south of the enclosure.
Constantine I 319-322 A.D.
R.I.C. 7 Trier ——— 266
PTR
9. Top soil east corner of excavations.
Constantine I 323-324 A.D.
R.I.C. 7 Ticinum 140

GENERAL DISCUSSION OF THE ROMANO-BRITISH PERIOD

We have already noted what seems to have been a substantial measure of continuity between the late Iron Age and early Romano-British settlements. This was reflected both by the area in which features were found (Fig. 64), and the continuance of late Iron Age pottery fabrics and forms into the Romano-British period. It is seldom possible to prove absolute continuity archaeologically and this evidence certainly does not constitute proof; all we can say is that the excavations have produced no evidence of a hiatus. Among the first recognisable signs of Romanisation was the arrival of small amounts of coarse pottery, samian, *terra nigra* and imitation *terra rubra*, during the Neronian and early Flavian periods. Later in the Flavian period the first big post-conquest change took place with the making of the enclosures. These seem to have functioned as a kind of farmyard serving both as enclosures for stock and areas in which basic agricultural activities could be carried out. There were pits and postholes in the enclosure, and the former contained stones used in the sharpening of iron tools and abundant debris from the drying and preparation of cereals.

¹ The references are to the following: R.I.C. = H. Mattingly and E. A. Sydenham (eds.), *Roman Imperial Coinage* (1923); L.R.B.C. II = R. A. Carson, P. Hill and J. Kent, *Late Roman Bronze Coinage*, Part II (1960).

During the second century the enclosure ditches ceased to be recut and by the middle of that century they had become filled. One pit, No. 729, contained late second century material, but the only other finds definitely of that date were unstratified samian sherds and two coins minted between A.D. 161 and 180. This paucity of material was equally true of the third century which was represented only by Pit 1, and a number of unstratified and residual sherds. Whether we regard the late second and third centuries as a hiatus in the site's history depends to a large extent on what view we adopt of the site as a whole. If for instance we accept that excavations have uncovered part of a farm, then occupation may well have continued in other parts but with the area of the former enclosure utilised to a lesser extent.

Following this period of reduced activity there was evidence for the resumption of fairly intensive occupation during the fourth century. Belonging to this period were eight pits, the corn-drying oven and Structures LXII and LXIII. These features produced a distinctive ceramic assemblage which has been discussed in an interesting quantitative way by Mr. Green. He has demonstrated that the bulk of the pottery was produced during the second half of the fourth century. The latest coin, of a very impoverished series, is of ?Gratian A.D.367-378, how much later than this occupation continued is difficult to say. The pottery does include what, on present knowledge, are the latest recognisable products of Romano-British kilns known from this area. At present Sussex seems to lack the Romano-Saxon and local sub-Roman wares known from other parts of the country. In their absence it seems probable that some of the pottery types identified continued to be produced into the fifth century, as Dr. Fulford has suggested in the case of Pevensey Ware.¹ We can at least give some idea of the final events in the life of the Romano-British settlement even if it is not possible to date them very precisely. The site does not seem to have been abandoned immediately the large corn-drying oven went out of use. Nor probably had the occupants ceased to be interested in corn-drying for they dismantled the oven and removed the potentially useful flooring stones. Several stones from the oven ended up in the pits as did Thundersbarrow Ware vessel 67, which had originally been cemented into the wall of the oven, as mortar on its surface showed. Some of the pit fills seem therefore to represent the period when the oven was being robbed and backfilled; during this time there is the possibility that corn-drying was still going on nearby, as suggested by a layer of carbonised grain near the top of the oven fill. Several of the pits were only partly infilled by the time of the Anglo-Saxon occupation, and their upper levels contained Saxon sherds.

ENVIRONMENT AND ECONOMY

In connection with the earlier phases of the site's history we have already seen how, once the hill was given over to agriculture, a basic pattern was established with a settlement on the spur crest surrounded by fields. This pattern was equally true of the Romano-British period, the field system continued to be tilled as the distribution of finds in the lynchet shows, and the land molluscs suggest a continuance of the dry and open conditions of the Iron Age. One soil sample from the settlement examined for land molluscs came from Pit 718 of Flavian date. Unfortunately it produced very few snails, sufficient only to say that it gives no reason to infer a change from conditions observed in the Iron Age.

Finds from the settlement do however go some way towards supplementing the rather impoverished environmental information, for they show arable agriculture to have been a very

¹ M. G. Fulford, 1973, *op. cit.*, pp. 41-4.

important aspect of the site's economy. Features of this period produced large numbers of carbonised seeds, samples of which have been studied by Mr. J. Arthur. In reviewing his results, which are set out in Table XVI, it is convenient to discuss the first to third century samples independently of the larger samples from the corn-drying oven. During the earlier period the main crops were spelt (*Triticum spelta*), another wheat species (*Triticum* sp.) and six-row Barley (*Hordeum vulgare*). Mixed with these were varying proportions of weeds of waste and cultivated ground; Common Vetch (*Vicia sativa*); Rye Brome (*Bromus secalinus*) and Common Sowthistle (*Sonchus oleraceus*). Rather larger numbers of weeds were associated with the cereals in Pit 1: Fat Hen (*Chenopodium album*); Common Orache (*Atriplex patula*); Black Bindweed (*Bilderdykia convulvulus*); Common Knotgrass (*Polygonum aviculare*); and Ivy-Leaved Speedwell (*Veronica hederifolia*). Where such a proportion of weeds was present it suggests that the sample might be the refuse from the sorting or sieving of a harvest.¹ In this connection it is interesting that, considering its size, the sample from the corn-drying oven did not produce large numbers of weed species. Several samples from this feature have been examined by Mr. Arthur; chronologically the latest of them was from layer 3, the dark brown ash laid down after part of the oven had been backfilled. This sample comprised 42 grains of spelt (*Triticum spelta*) and four grains of six-row Barley (*Hordeum vulgare*). The other samples were from layer 7; one contained 70% spelt and 30% barley, the other had 80% wheat species (*Triticum* sp.) and 20% barley. There was also a single grain of Oats (*Avena* sp.). The weeds which contaminated this crop were as follows: Wild Radish (*Raphanus raphanistrum*); Corn Gromwell (*Lithospermum arvense*); Rye Brome (*Bromus secalinus*) and another Brome species.

During this period the major activity to which the archaeological record bears witness is the preparation and drying of cereals. Quantities of ash from this process were encountered in Pits 718, 729 and 1 in the earlier period, and Pit 897 and the corn-drying oven in the fourth century. It was often difficult to decide whether features such as 729, 897 and 1 were actually ovens, rather like the 'scoop kilns' at West Blatchington,² or simply dumping grounds for oven refuse. Feature 718 had a more satisfactory claim to be an oven and might represent a small clay domed oven of a type used during the Iron Age. Storage of the crop presents an interesting problem. Suitable pits were comparatively few—four from the early period, two from the late—compared with a total of thirteen from the late Iron Age. This reinforces a trend noted in the Cranborne Chase settlements³ though possible explanations are varied: trade, taxation, storage in estate centres, or quite simply a different method of storage. At any rate a proportion of the crop was retained and turned into flour as the presence of several pieces of rotary quern showed.

A second aspect of the site's economy was animal husbandry, the chief species being sheep (48%); cattle (23%); horse (15%); pig (5.6%); dog (1.8%); cat and domestic fowl. The early Romano-British enclosures are likely to have functioned partially as stock compounds as perhaps did Structure LXIII during the fourth century. Exploitation of wild animals still continued, red deer were hunted and parts of a, probably stranded, whale were made use of. Fowling was practised and a clay sling bullet identical to those from the Iron Age was probably the missile used. Fishing was attested by bones of Meagre and ? Mackerel and two probable net weights.

¹ R. Dennell, 'Interpretation of plant remains in Bulgaria,' in E. S. Higgs (ed.), *Papers in economic prehistory* (1972), pp. 149-159.

² N. E. S. Norris and G. P. Burstow, 1950, op. cit., pp. 19-35.

³ C. F. C. Hawkes, 'Britons, Romans and Saxons round Salisbury and in Cranbourne Chase,' *The Archaeological Journal*, vol. 104 (1947), pp. 27-81.

The quantity of marine molluscs suggests that they were collected in larger numbers than had been the case during the Iron Age, the major species being mussel, oyster, common limpet, common periwinkle and pullet carpet shell. In addition the garden snail (*Helix aspersa*) may also have been eaten.

This brings us to craft activities and to record what appears to have been a move away from the relatively self-sufficient picture reported from the Iron Age. In this period there was no evidence of salt production or pottery manufacture and the only indication of the once flourishing cottage textile industry was a single spindle whorl. Loomweights were entirely absent, as indeed they almost invariably are on Romano-British sites.¹ Deficiencies in these respects are to some extent compensated for by material relating to two other activities only poorly represented during the Iron Age. The chief of these was cheese making, attested by at least two presses and possibly also by three vessels with perforated bases. There were also indications of metalworking in the form of iron bloomery and forging slag, but the quantities were small suggesting that the processes were carried out elsewhere.

We might therefore regard this site as rather more specialised during the Romano-British period, the specialisation being corn growing within a mixed farming strategy. But what of the nature of the site; was it a small settlement, an occasionally visited enclosure in the fields, or part of a larger settlement much of which lies outside the excavations? From the quantities of domestic debris there can be little doubt that domestic occupation did take place in the vicinity, at least periodically. Yet, with the possible exception of the late Structure LXII, no traces of domestic buildings have been uncovered.² There is some evidence that settlement in the earlier period was west of the enclosure since the ditch on that side contained by far the majority of the first and second century finds. During the fourth century there may have been settlement just outside the east corner of the excavations, for in this corner was a noticeable nucleation of late pottery and four fourth century coins, but no contemporary features. What we have excavated seems likely to have been the farmyard area where cattle were penned, crops prepared and dried and agricultural equipment maintained. Though we can hardly doubt that parts of the settlement lay outside the enclosed area it is unlikely to have been very large and we might guess that it was occupied by one or two extended families.

THE ROMANO-BRITISH SETTLEMENT PATTERN

The Rookery Hill site was but one of a series of small farming settlements on the South Downs. Their distribution in the 76sq. miles around the site has already been reviewed in our report on the Newhaven excavations.³ Two broad types of site emerged from that survey. The first, represented by the Newhaven villa and a number of other sites with possible stone buildings, were on low ground, in valleys and the clay vales of the Weald. The second, of which this site is an example, were generally on the crests of downland spurs and, not infrequently, had their origins in the Iron Age or earlier. We may speculate that the first type of site represents the centre of estates of which the second type was an integral part.⁴ This might explain the planned layout of the enclosure and the lack of corn storage facilities. At the present time however no villa site is known between the Ouse and Cuckmere to which the Rookery Hill site can plausibly be related,

¹ S. Applebaum, 'Peasant economy and types of agriculture,' in C. Thomas (ed.), *Rural settlement in Roman Britain* (1966), pp. 99-107.

² See discussion of Structure XLVII, p. 219.

³ M. G. Bell, 1976, *op. cit.*, Fig. 1.

⁴ M. G. Bell, 1976, *op. cit.*, in particular 'The Site's Economy,' pp. 251-256.

unless, that is, it was associated with the short-lived Newhaven villa on the opposite side of the Ouse. One also suspects that a stone building may lie near the complex of Romano-British finds on Seaford Golf Course and neighbouring Fitzgerald Avenue.¹

Discussion of the Romano-British settlement pattern in the Newhaven report emphasized that the distribution of sites presented there as Fig. 1 was incomplete. Other sites would almost certainly be discovered and earlier finds reported, as indeed they have been in the year since that was written. In order to try and keep the record as nearly as possible up to date, these additional finds are listed below.

Site 47. Southerham (TQ 432089). During a rescue excavation in May, 1976, Dr. O. Bedwin uncovered a T-shaped corn-drying oven and a small Romano-British enclosure ditch. In the area west of this find, up to the edge of the alluvium, Romano-British finds have been made by Mr. C. E. Knight-Farr.

Site 48. West Firle (TQ 482081). A few Romano-British sherds found by Mr. J. Dove during road widening of the A27.

Site 49. Beddingham, Lower Pit (TQ 440072). Romano-British material found in a quarry face by Mr. J. Dove. Further finds west of the Lower Pit are reported by Mr. C. E. Knight-Farr.

Site 50. Peacehaven Heights (TQ 425007). Romano-British occupation noted by Mr. Knight-Farr during re-laying of the road surface for the A259.

¹ J. E. Price, 'On excavations in the camp, the tumulus and the Romano-British cemetery, Seaford, Sussex,' *S.A.C.*, vol. 32 (1882), pp. 167-200; and V. G. Smith, 'An Iron Age and Romano-British site at Seaford,' *S.A.C.*, vol. 80 (1939), pp. 293-305.

THE ANGLO-SAXON PERIOD

It is a matter of considerable interest that a site with so long a history of prehistoric and Romano-British occupation should also have been selected for occupation during the Saxon period. Despite this basic continuity of site the character and plan of the early Anglo-Saxon settlement contrasts to some extent with that of its predecessors. Firstly the settlement seems to have been a good deal larger; secondly it consisted of types of rectangular post-built structures and sunken huts quite unknown in the preceding periods and thirdly it spread over the earlier 'Celtic' field system. The total area covered by the Anglo-Saxon settlement is likely to have been in the order of three hectares. This we can estimate from the distribution of excavated buildings, coupled with the distribution of Saxon sherds in the top soil. On the south west side of this area was a contemporary cemetery, the accidental discovery of which was responsible for all the subsequent archaeological activity at Bishopstone. Clearly the cemetery and the associated buildings excavated by Mr. David Thomson are of crucial importance to an understanding of the site as a whole. Unfortunately these excavations are not yet published, so we must begin with a brief resumé of the results of Mr. Thomson's work in so far as they can be assembled from preliminary notes in Journals¹ and the press.

The Cemetery

Workmen engaged in the construction of the Harbour View Estate uncovered the first human bones in September, 1967. This led to rescue excavations by Mr. Thomson which continued until the following March, mostly at weekends and under difficult conditions with building going on around them. The nucleus of the cemetery appears to have been a Bronze Age round barrow, 13m. in diameter surrounded by a ditch 1m. wide. Ploughing had obliterated the mound itself, and the original burial appears to have been robbed, for at the centre was a large irregular pit, the fill of which contained a Beaker sherd. The cemetery spread out to the north of this barrow in a shallow crescent 94m. long by 20m. wide. The majority of the 118 burials were inhumations in graves orientated both north-south and east-west. Some were comparatively shallow, only 10 to 20cm. into the chalk, whilst others were over 60cm. deep. There were also six cremations, at least two of them inurned and others simply placed in shallow pits in the chalk.

Dating the cemetery must be largely speculative until all the finds have been cleaned and examined in detail. At the time of writing only one object is published, a Quoit Brooch Style buckle from Grave 12, which was probably made during the first half of the fifth century.² Two iron buckles were inlaid with silver and this was a technique chiefly employed during the fifth century.³ Weaponry in the graves included spears and three shield-bosses but no swords. Other finds were a bronze bound wooden bucket, buckles, numerous knives, beads, a few pots, disc brooches, spindle whorls and a bone comb. A few graves are also believed to have contained artifacts of Roman production. Amongst the fills of some graves were small pottery

¹ *Medieval Archaeology*, vol. 12 (1968), p. 161 and vol. 13 (1969), p. 240.

² V. I. Evison, 'Quoit Brooch style buckles,' *Antiquaries Journal*, vol. 48 (1968), pp. 231-246.

³ V. I. Evison, *The fifth-century invasions south of the Thames* (1965), pp. 18-20.

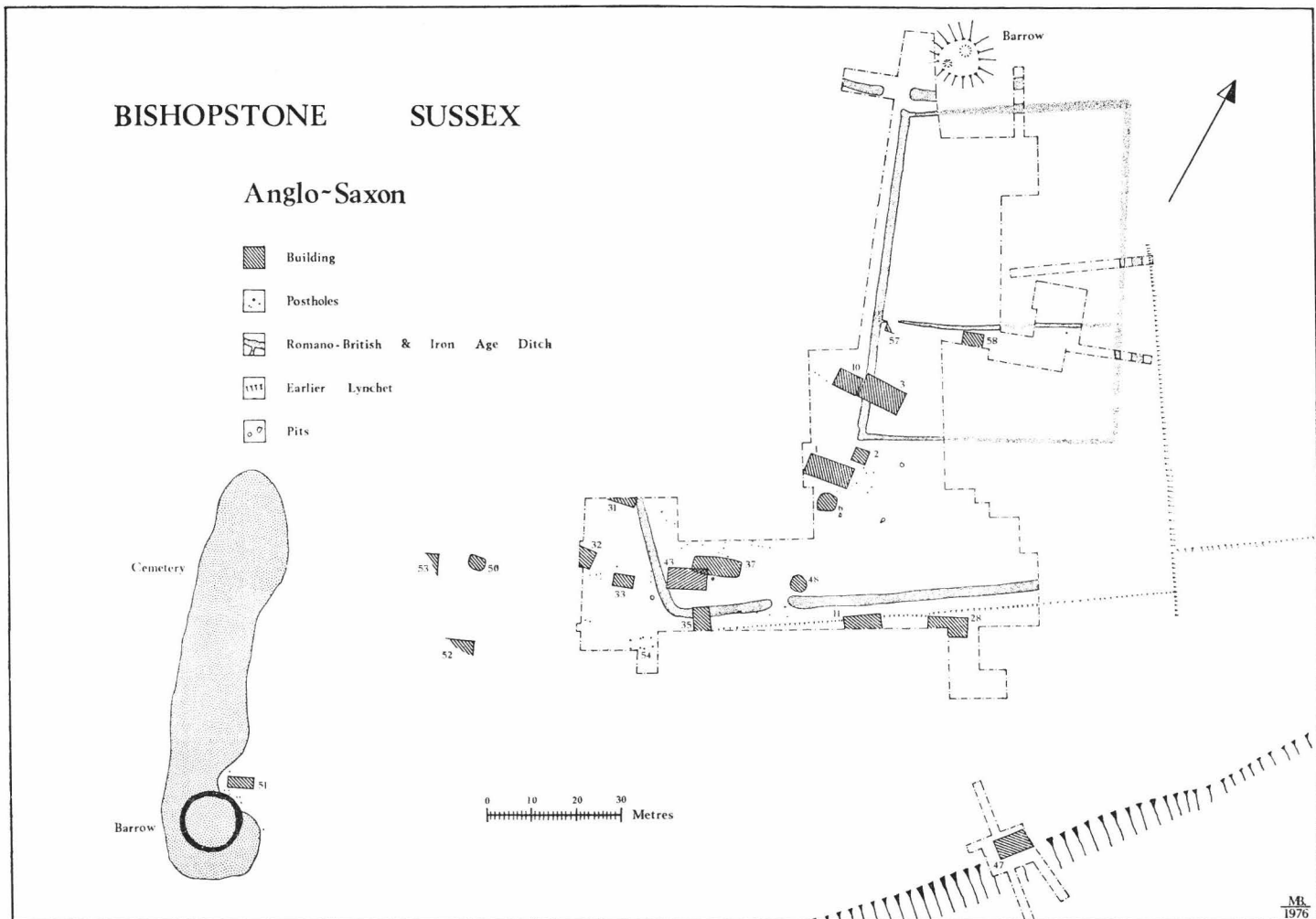


FIG. 86. General plan of the Anglo-Saxon site

sherds which were probably part of occupation spread from the nearby Saxon settlement. Preliminary examination of the finds suggested to Mr. Thomson that the cemetery continued in use until the early sixth century. It was certainly used for sufficiently long to allow a number of graves, particularly those near the barrow, to cut through earlier burials. The excavator has suggested that the earliest burials were made round the barrow and that they spread out in a chronological sequence to the north. If this hypothesis is eventually proved by a detailed examination of the finds it will have interesting implications for the dating of Anglo-Saxon objects.

The population interred in the cemetery has been the subject of a special study by Roderick Concannon. So far 83 skeletons have been made available to him, though some were in a very fragmentary condition. Of those which could be sexed 31 were male and 33 female. The population had the following age structure: 1 baby under 1 year; 12 children between 1 and 15; 19 young adults aged 15 to 25; 29 of middle age 25-45; and 14 classed as old which, in terms of the Saxon lifespan, was judged to be 45 onwards. The skeletons exhibited many of the usual pathological features, including arthritis and dental disease, and there were also a number of bone fractures. No evidence was found of battle wounds or of major epidemics. With 35 skeletons still to be seen and much work remaining to be done on the others, the study is far from complete. These preliminary results do however suggest that we are dealing with a fairly normal population showing no particular imbalance in terms of its age or sex composition.

Settlement Excavations 1967-1968 (Fig. 86)

Mr. Thomson followed up his discovery of the cemetery by an even more important find, that of an associated settlement. The first indication of this was Structure LI only 1.5m. north of the barrow and some 2m. from the nearest grave. Mr. Thomson has described it as follows: "A trapezoidal structure, marked by postholes, had once stood adjacent to the cemetery. It was 6.15m. long and 2.15m. wide at the narrow end, in the centre of which was a large posthole; the other end was 2.76m. wide without intermediate postholes, but with an additional flanking posthole externally at either side."¹ So close was the building to the graves that it may possibly have been connected with the cemetery, perhaps a lych-gate type structure as the excavator suggested. Between this building and the barrow were a small number of other postholes. Excavation of this area was restricted by builders' dumps of soil and houses under construction, and we should not therefore rule out the possibility that other buildings once existed close to the cemetery.

Forty metres east of the cemetery a sunken hut, Structure L, was uncovered.² This was a pit 3.7m. by 2.7m. and 60cm. deep, with two large postholes in the middle of the shorter sides, the bases of which were 90cm. below the surface of the chalk. Cut into the flat floor of the pit, and in one case its wall, were ten small stakeholes between 5 and 10cm. deep. In the centre of the floor there was a hearth of flints and sandstone about 1.4m. in diameter. This seemed to have been made after the hut had been abandoned because it was separated from the chalk floor by 7.5cm. of sediment. Subsequently the hut was filled with dark earth and flints, amongst which were a number of mussel shells, pieces of domestic pottery and spindle whorls.³ Close to the sunken hut were the remains of two post-built structures which had been partly destroyed by

¹ *Medieval Archaeology*, vol. 13 (1969), p. 240.

² For a plan see: E. W. Holden, 'The Saxon weaver's hut,' in J. R. Armstrong, *Weald and Downland Open Air Museum Guide* (2nd ed. 1970), pp. 22-25.

³ These finds are noted in *Medieval Archaeology*, vol. 13 (1969), p. 240. Mr. E. W. Holden, F.S.A.,

informs the writer that three spindle whorls were found, one of bone, also parts of a double-sided undecorated bone comb, a Roman coin pierced for suspension, two bronze fragments, some flat pebbles used as burnishers or polishers, a tegula and a few small fragments of baked clay.

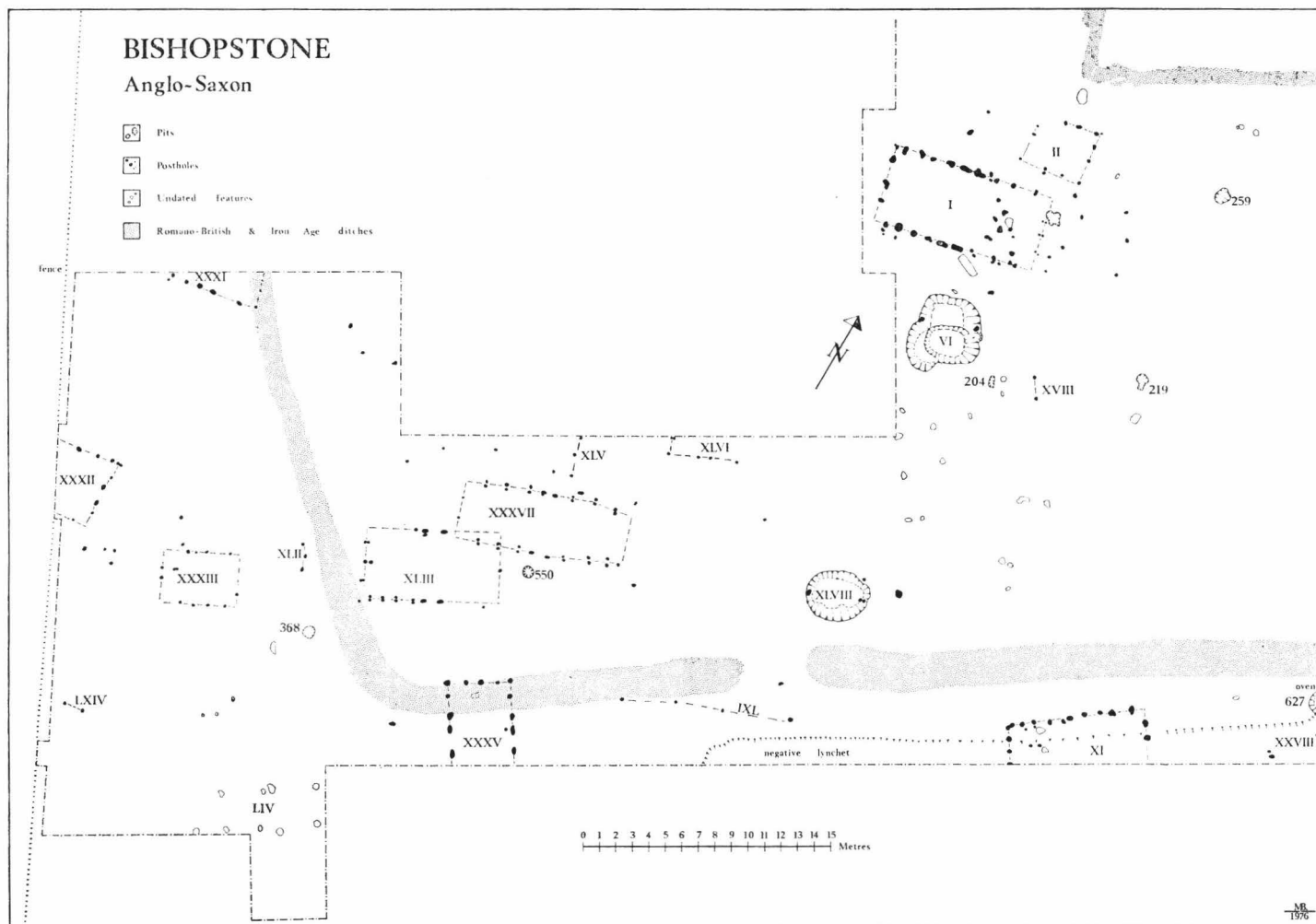


FIG. 87. Central area of the Anglo-Saxon excavations

levelling before it was possible to excavate them. One of these, Structure LII, was represented by ten postholes in two lines at right angles; probably this was one corner of a rectangular building which would have been in excess of 6m. by 3m. Of the other building, Structure LIII, only six postholes remained, but these also appeared to represent the corner of a rectangular structure.

By the time these structures had been excavated the bungalows in whose gardens they lay were nearing completion and excavations were no longer possible. In order to follow up these discoveries permission was obtained to conduct exploratory excavations on the adjoining farmland to the east, the area with which the present report has been very largely concerned. Mr. Thomson put down a series of trial trenches in the arable field which served to indicate the existence of large numbers of postholes, some of which formed rectangular buildings. Part of two post built structures, Nos. LIV and XXVIII, were excavated and will be described in connection with the subsequent excavations. In addition a second sunken hut, Structure VI, was found and subsequently re-excavated by the writer as part of an area excavation.

Settlement Excavations 1969-1975 (Figs. 86-99).

When the writer took over responsibility for the site at the beginning of 1969 its importance and potential had already been demonstrated. It remained only to excavate sufficiently large areas in order to produce a plan of the settlement and establish its relationship to the earlier periods of occupation, traces of which had been found by Mr. Thomson. Ultimately twenty-two Anglo-Saxon buildings were uncovered, including the 1967-68 finds.¹ The buildings discussed here have been dated to the Anglo-Saxon period for four main reasons:

- (1) The sunken huts contained pottery and artifacts well paralleled in Anglo-Saxon contexts. Sherds in the same fabrics were occasionally found in posthole fills, and in these cases a star is included on the plan either in the exact findspot, where known, or beside the posthole number.
- (2) A number of the buildings overlay Iron Age and Romano-British features, in particular there were three post-dating a 'Celtic' field.
- (3) In nearly every case there was a close similarity between the building plans and those of Anglo-Saxon buildings on other sites.
- (4) The postholes which contained Saxon sherds, or which formed Anglo-Saxon type buildings, were on average much smaller than those forming Iron Age structures. This is shown graphically in Figure 100.²

THE BUILDINGS

Preparatory to describing the buildings we must consider the likely effects of subsequent erosion and ploughing. The hillside on which they were erected was uneven, marked by the partially sedimented ditches, pits and fields of three thousand years' occupation, a very different landscape from the ploughed downland we see today. Processes which have effected this change have likewise eroded the Saxon buildings and in some cases obliterated parts of them.

The buildings can be divided into a number of types under which headings they will be discussed. Comments and parallels concerning individual types are given in these sections. Those of a more general nature, referring particularly to the post-built rectangular structures, are

¹ The Structure numbers include Iron Age and Roman buildings.

² Much of the overlap on this figure is accounted for by the larger Anglo-Saxon postholes flanking entrances.

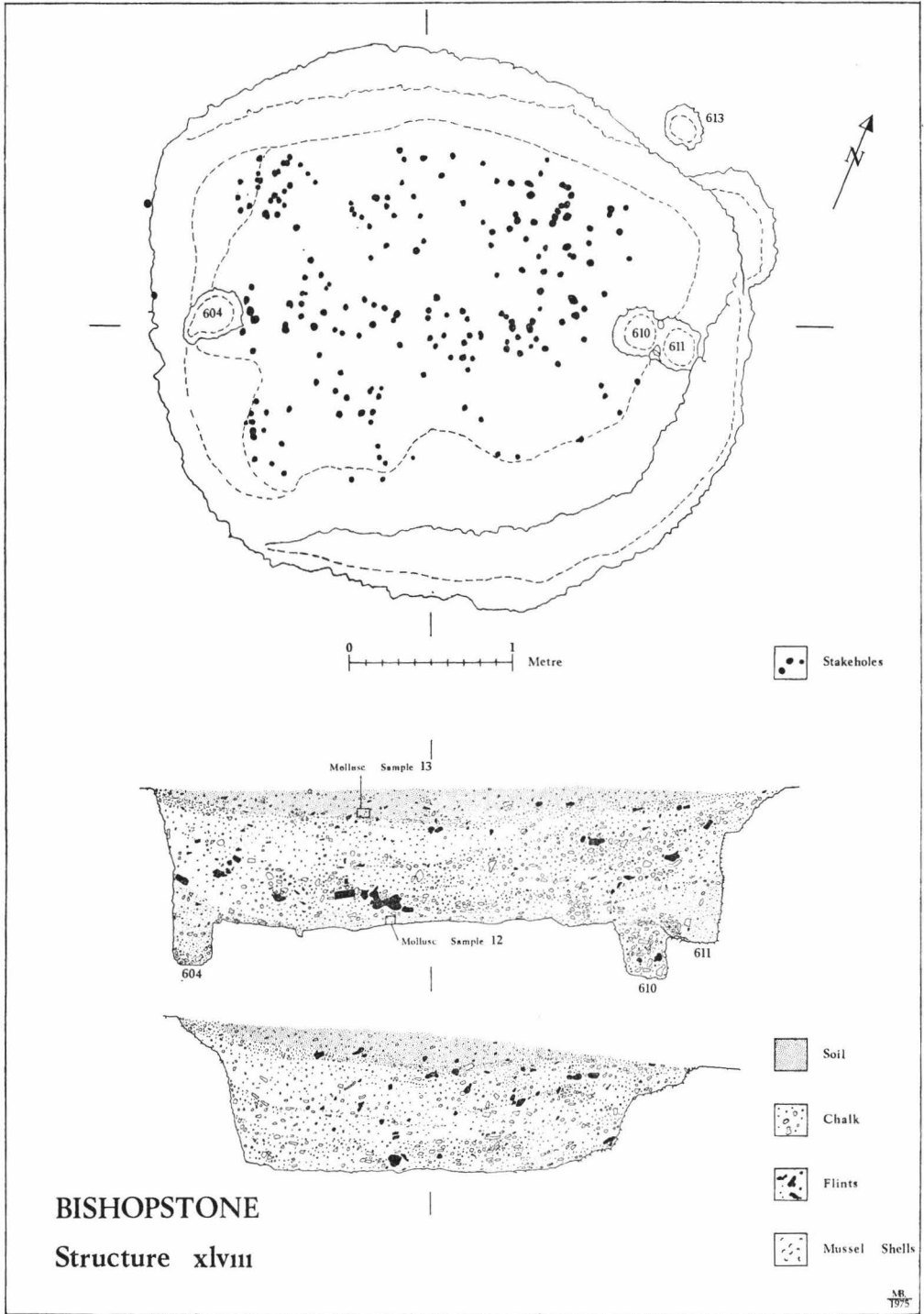


FIG. 88. Sunken hut. Structure xlviii

reserved for a concluding general discussion of the buildings. Where dimensions are given they are the maximum distance between the outsides of the two walls concerned.

SUNKEN HUTS

Structure XLVIII (Fig. 88 and Plate X)

A sub-rectangular pit 3.8m. by 3.4m. with fairly steep sides and a flat floor, 90cm. deep. In the middle of the two shorter sides were large postholes cut into the floor of the pit. On the east side there were two; No. 610, circular and 32cm. deep with a fill of clean chalk rubble; and 611 which was little more than a saucer-shaped post seating 6cm. deep. The sterile fill of 610 and the fact that 611 was filled with brown earth similar to that in the remainder of the hut, suggested that 610 pre-dated 611. On the west side was a single post, 604, 28cm. deep; in plan this had the appearance of two intersecting oval holes giving rise to speculation that it may have been recut. Postholes 604 and 610 had clear grooves down the sides such as would be expected if they were cut with a flat pointed iron tool in the region of 5cm. wide. Cut into the floor, and in two cases the rim of the pit, were 197 small vertical sided holes which were round, of fairly uniform size, about 3cm. in diameter and between 2 and 7cm. deep. They had the appearance of being man made, certainly they were not produced by tree roots for no trees had grown hereabouts as the molluscs showed. Nevertheless they had no obvious function although a few did appear to form lines, and there were distinct nucleations, one of them between postholes 604 and 610. Activities resulting in wear had obviously taken place on the floor of the pit, rims round the edges of postholes show that the floor has been eroded since they were dug. Erosion might account for the shallowness of posthole 611 but it is odd that the deeper post 610, which one would expect to have been its replacement, seems to have been the earlier. If indeed occupation took place on the floor of the pit, how was it entered for no steps or ramp were found? The most likely area for an entrance was beside posthole 611, for between this and the small posthole 613 the edge of the pit had been worn in a semi-circle.

The lower part of the pit walls was clean cut and vertical demonstrating that little weathering had taken place before the feature was backfilled. Soil represented a much greater proportion of the fill than it did in most other features, suggesting to the excavators that turf might have formed part of the original structure. Above the primary fill of soil (3) was a lens of chalk rubble (4) which had been thrown in from the north corner. When the pit had been filled to within 25cm. of the top it was left and the upper few centimetres of the edges were allowed to weather. Following this interval it was finally filled with soil and small chalk rubble (2), then, as a result of settling, with the lower part of a soil profile (1).

Samples for analysis of land molluscs were taken from the floor of the pit (No. 12) and the base of layer 1 (No. 13), in order to obtain information about the environment during the pit's life and after its abandonment. Easily the most numerous finds were marine molluscs totalling 4,202 shells, 81% of them mussels. From this feature came the largest assemblage of Saxon pottery which included illustrated Vessels 1-17. It also produced the following small finds: spindle whorls (53-54); teeth from bone combs (57-60); needle (61); pin-beaters (62-64); bronze fittings from a wooden bucket (72-73); nails (65-68); iron objects (69-71); and a piece of polished bone (not illustrated). A quantity of animal bones included an unusually large proportion too small for identification. These were principally cut mid-shaft fragments of long bone, which might point to the production of bone artifacts. There were also 73 pieces of daub, most of them small, four of them with one flat face. Amongst the Saxon material were 95 Romano-British

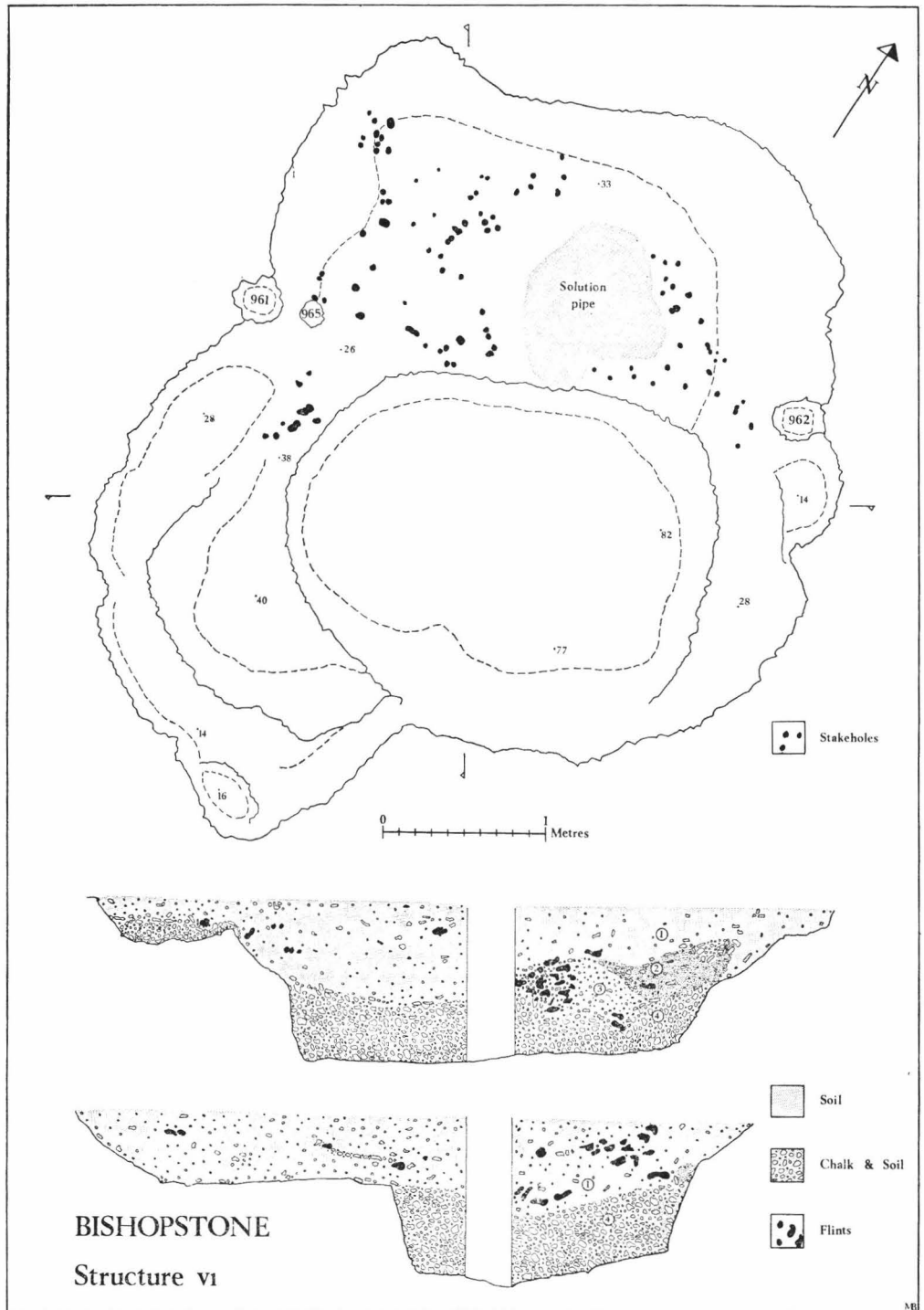


FIG. 89. Sunken hut. Structure vi

sherds which included four pieces of Thundersbarrow Ware, and also a piece of tile with *opus signinum* on the surface. In general the Roman pottery was smaller and more eroded than the Saxon sherds, and in all probability represents no more than a residual spread from the earlier settlement.

Structure VI (Fig. 89 and Plate XI)

It has already been noted that this structure was excavated by Mr. Thomson in December, 1968 and subsequently re-excavated by the writer in 1974 as part of an area excavation. These comments must perforce be based largely on its plan and on sections drawn by the writer who assisted in the original excavation. The overall dimensions of the feature were 4m. by a maximum of 4.4m., but it is uncertain whether the plan is that of one feature or two, for it consisted of a typical Saxon sunken hut with a large oval pit in part of the floor. The sunken hut was 40cm. deep with postholes on opposite sides 3.3m. apart. On the west side were two postholes, 961 on the upper edge of the pit 37cm. deep, and a smaller hole, 965, on the floor 7cm. deep. On the east side there was a single posthole, 962, cut just below the rim of the pit to a depth of 41cm; beside this was a shallow semi-circular recess, 14cm. deep, which may have been a post seating. Cut into the floor were 108 stakeholes of average diameter 3cm., and between 4cm. and 9cm. deep. Though they formed no readily interpretable pattern there were distinct nucleations and a few possible lines. In two small areas they were also found on the sloping walls of the pit.

What made this sunken hut unusual was the large oval pit on its south side 2.6m. by 2.3m. and 82cm. deep; in the absence of the original stratigraphy the re-excavation could not, of course, determine whether this pit was contemporary with the sunken hut. However the original sections show that it was filled with large chalk rubble and soil (4) which contrasted with the rich brown soil, chalk and flints which filled the sunken hut (1). We may therefore tentatively conclude that the sunken hut was cut into an earlier pit. An extension of the feature to the south was approximately the same depth as the sunken hut, and may have been an entrance way like that found to similar huts at Portchester Castle¹ and Dorchester-on-Thames.²

It has not been possible to examine the original finds but it is known that quantities of pottery, mussel shells and calcined flints were found. A newspaper article³ records the finding of 'broken combs' presumably from this hut, and the writer has been shown a large bronze pin or needle with simple linear decoration on its head.

Structure L (Fig. 86)

Excavated by Mr. Thomson in February, 1968, and briefly discussed in the section on his excavations above.

GENERAL DISCUSSION OF THE SUNKEN HUTS

These three structures belong to the best known class of Anglo-Saxon building, often called by its German name, the *Grubenhaus*. Each of them had two large posts in the middle of the gable ends which must have supported a ridge piece against which was a tent-like roof. Turf is likely to have been used as a building material as was noted in connection with Structure XLVIII, it

¹ B. W. Cunliffe, *Excavations at Portchester Castle, vol. II: Saxon* (1976), pp. 17-18.

² S. Frere, 'Excavations at Dorchester on Thames, 1962,' *Archaeological Journal*, vol. 119 (1962), pp. 123-125.

³ *Sussex Express and County Herald*, Friday, December 13, 1968, p.16.

might have served either for side walls or as a roof covering. The former have been found at Midlum in Germany,¹ and were suggested by the fills of huts at Mucking, Essex.² All the evidence from the Bishopstone huts pointed to the pit floor, rather than a raised wooden floor, as the occupation surface, for it had been worn leaving a rim round the postholes like that found in the Mucking huts.³ Furthermore there were the numerous stakeholes on the pit floor. Reference has already been made to the fact that they cannot have been produced by shrubs. Another natural agency, solution, must also be excluded because it would have occurred in greater nucleations in low-lying areas and along breaks of slope, and in any case they would have been found in other features. We must conclude therefore that they were deliberately cut and that the observed pattern probably represents a palimpsest left by some often repeated activity which took place in the huts. This activity was not exclusive to the site in question for smaller numbers of stakeholes have been found in sunken huts elsewhere when the bedrock was suitable for their preservation, including Chalton,⁴ Old Erringham⁵ and Thetford.⁶ None of the Bishopstone structures produced any evidence of flooring over the pit such as has been found at West Stow.⁷ There were also no other groups of postholes in their immediate vicinity which seemed at all likely to be associated with the sunken huts as parts of larger buildings, although again these have been found elsewhere in huts at Bourton-on-the-Water⁸ and Puddlehill.⁹ Some conception of the original appearance of the Bishopstone type of sunken hut can be had from a reconstruction recently made at the Weald and Downland Open Air Museum, Singleton. This was designed by Mr. E. W. Holden, F.S.A., who based it in part on Structure L at Bishopstone.¹⁰

BOAT-SHAPED BUILDING

Structure XXXVII (Fig. 92 and Plates XIV and XV)

One of the largest buildings was of the so-called 'boat-shaped type' with a total length of about 10m. and a width of 4m. It is described as boat-shaped because of the slightly bowed side walls which, in their middle, deviated from a straight line by 30cm. on the north wall and 40cm. on the south wall. The side walls were of small paired posts, three pairs on either side of each entrance. The individual posts were mostly circular, neatly cut and 20cm. in diameter, their average depth was 16cm. Each post was placed between 8 and 10cm. from its pair. In the individual case of post 488 the excavated hole was distinctively D-shaped, and appeared to have taken a split timber of diameter 22cm. by 17cm. At the mid-points of both sides were entrances. The north entrance was 70cm. wide, flanked by two postholes which, when excavated, comprised a double posthole. In both cases the outer part was 19cm. deep, the inner part of 490 was 16cm. deep and of 491 9cm. deep. In both cases the shapes of the holes indicated that the outer timber may have been rectangular and the inner one circular. The southern entrance was

¹ W. H. Zimmermann, 'A Roman Iron Age and early migration settlement at Flögeln, Kr. Wesermünde, Lower Saxony,' in T. Rowley (ed.), *Anglo-Saxon Settlement and Landscape*, British Archaeological Reports No. 6 (1974), pp. 56-73.

² M. U. and W. Jones, 'The Early Saxon landscape at Mucking, Essex,' in T. Rowley (ed.), 1974, op. cit., pp. 20-35.

³ M. U. and W. Jones, 1974, op. cit., p. 24.

⁴ P. Addyman and D. Leigh, 'The Anglo-Saxon village at Chalton, Hampshire; second interim report,' *Medieval Archaeology*, vol. 17 (1973), pp. 1-25, particularly Fig. 9.

⁵ E. W. Holden, 1970, op. cit., pp. 22-25.

⁶ B. K. Davison, 'The late Saxon town of Thetford: an interim report on the 1964-6 excavations,' *Medieval Archaeology*, vol. 11 (1967), 189-208.

⁷ S. E. West, 'The Anglo-Saxon village of West Stow: in interim report of the excavations,' *Medieval Archaeology*, vol. 13 (1969), pp. 1-20.

⁸ G. C. Dunning, 'Bronze Age settlements and a Saxon hut near Bourton-on-the-Water, Gloucestershire,' *Antiquaries Journal*, vol. 12 (1932), pp. 279-293.

⁹ C. L. Matthews, 'Saxon remains on Puddlehill, Dunstable,' *Bedfordshire Archaeological Journal*, vol. 1 (1962), pp. 48-57.

¹⁰ E. W. Holden, 1970, op. cit., pp. 22-25.

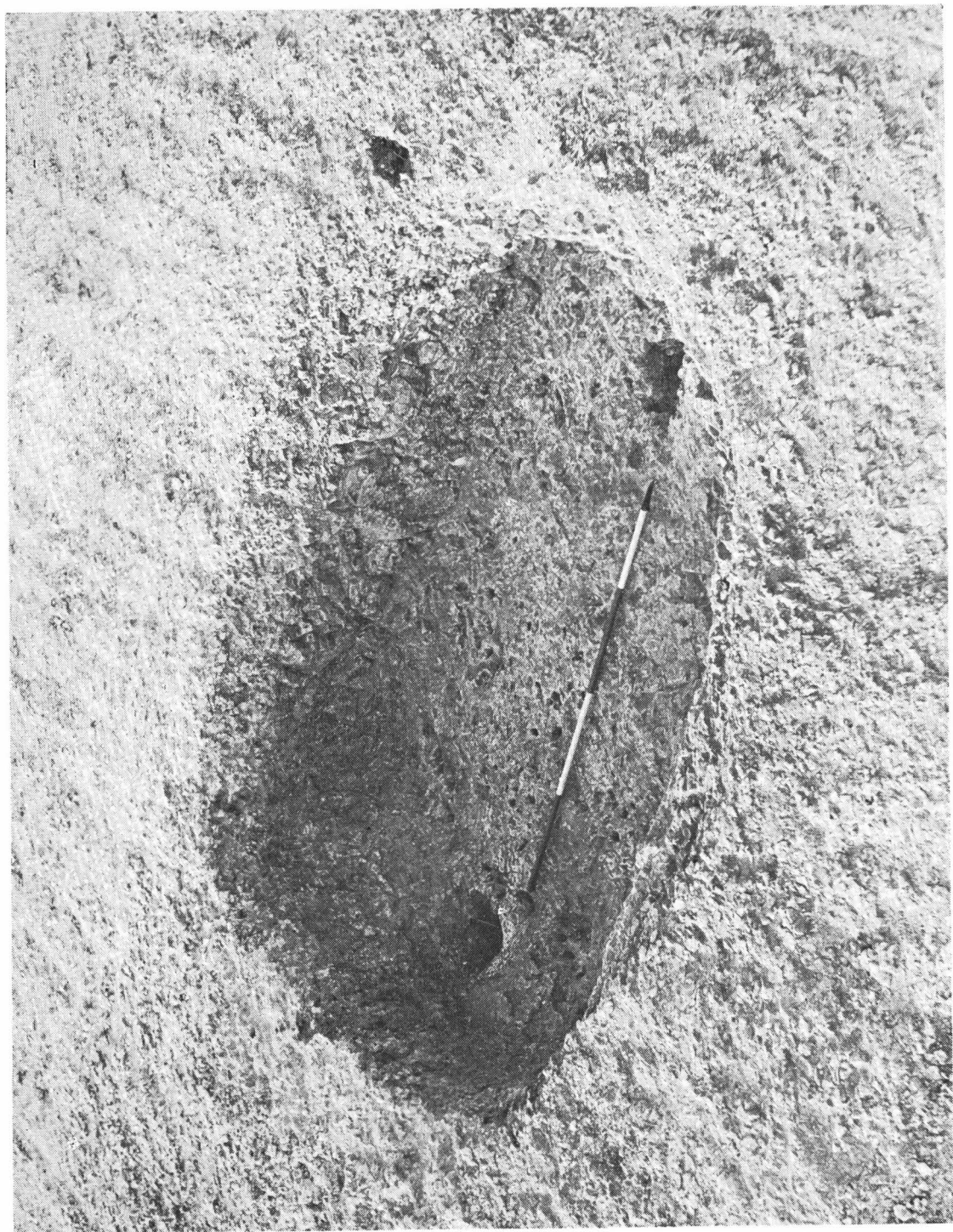


PLATE X. Anglo-Saxon sunken hut Structure xlviii. Scale 2 metres. (Photo: B. Westley)



PLATE XI. Anglo-Saxon sunken hut Structure vi. Scale 2 metres. (Photo: B. Westley)

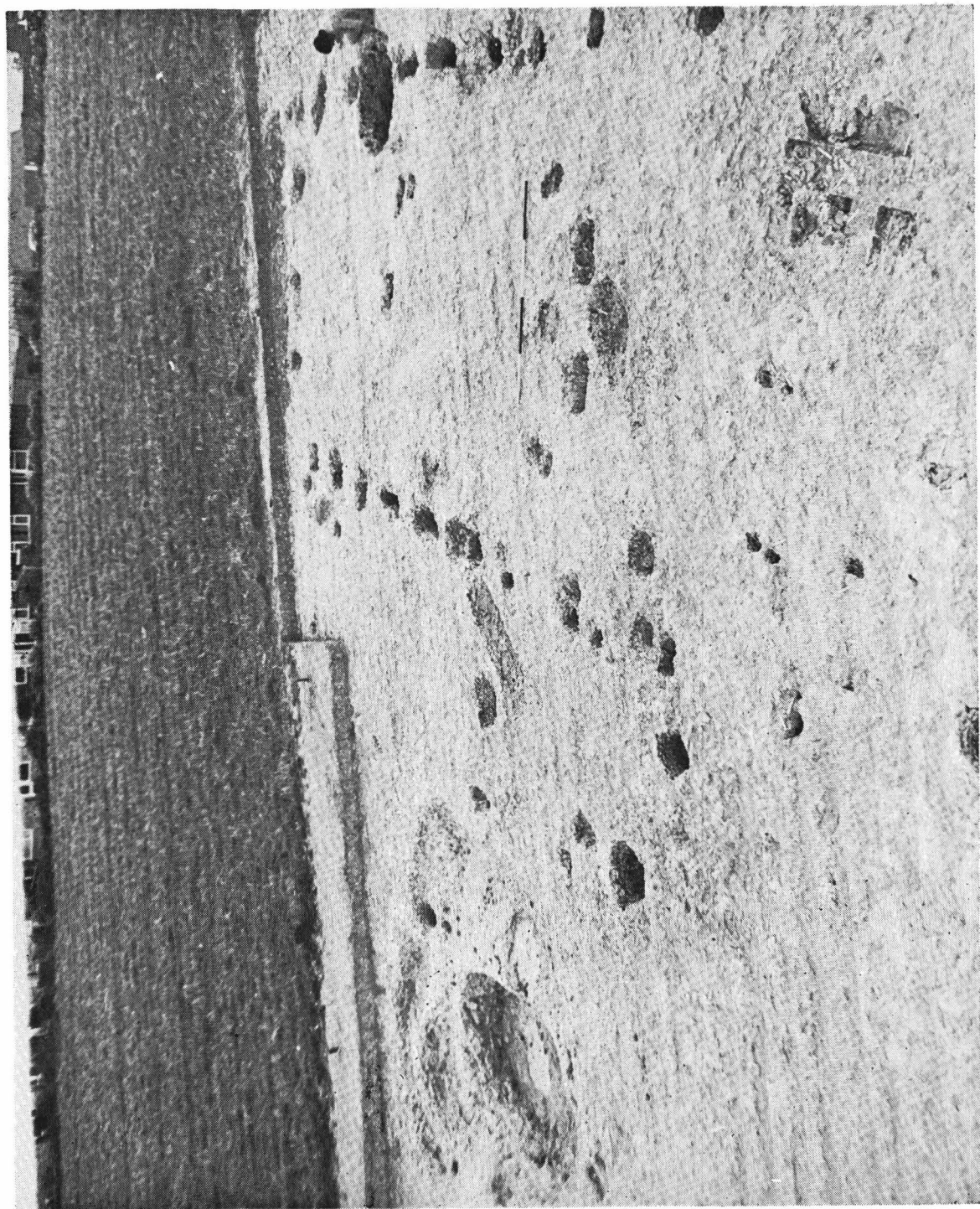


PLATE XII. Anglo-Saxon Structure i and vi. Scale 2 metres. (Photo: B. Westley)

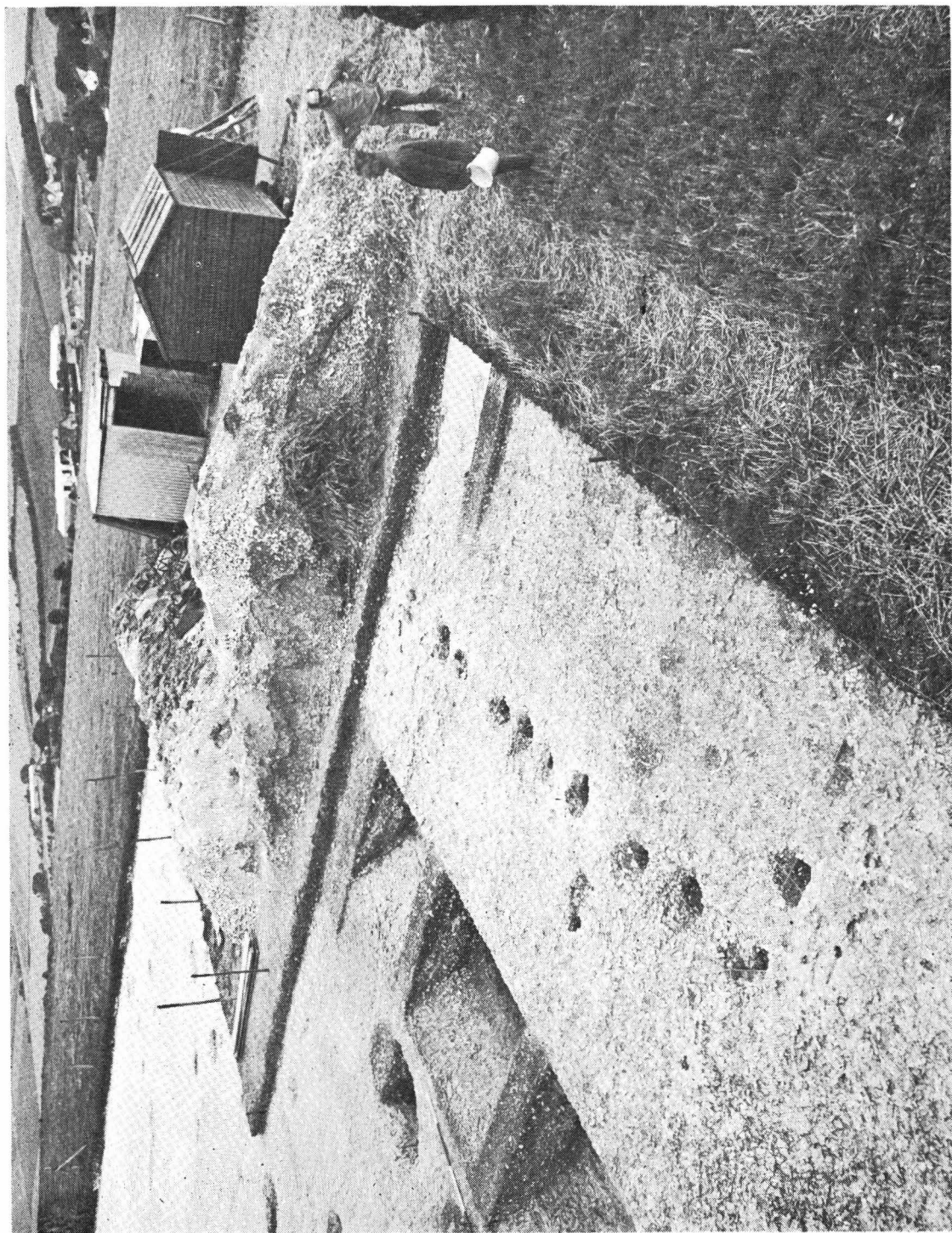


PLATE XIII. Anglo-Saxon Structure xi with the Iron Age enclosure ditch and pit 15. (Photo: B. Westley)



PLATE XIV. Anglo-Saxon Structure xxxvii from the south west overlying a complex of larger Iron Age postholes. Scale 2 metres.
(Photo: B. Westley)



PLATE XV. Anglo-Saxon Structure xxxvii from the east and overlying a complex of larger Iron Age postholes. Scale 2 metres.
(Photo: B. Westley)

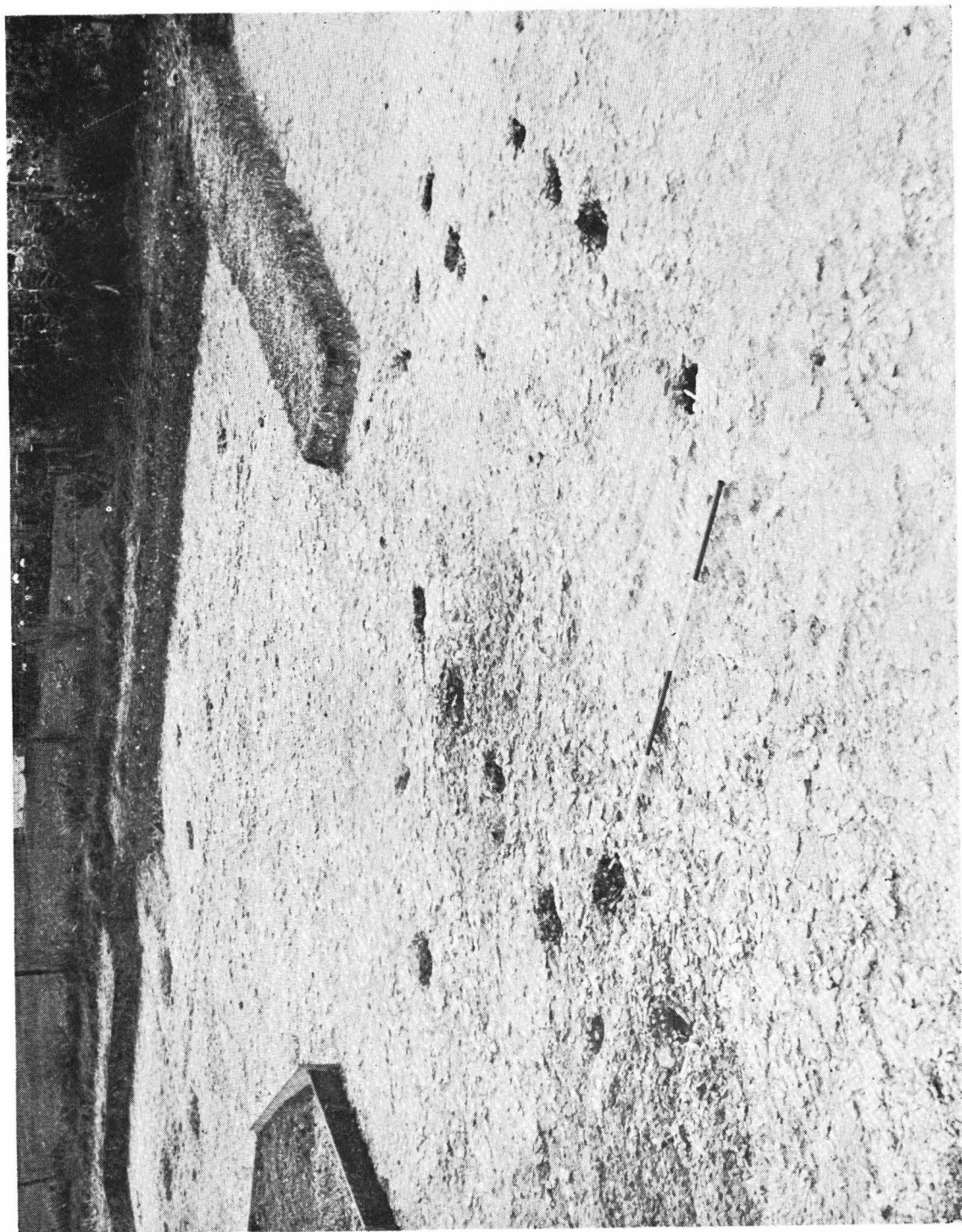


PLATE XVI. Anglo-Saxon Structure xxxii. Scale 2 metres. (Photo: B. Westley)



PLATE XVII. Anglo-Saxon Structure x. Scale 2 metres. (Photo: B. Westley)

70cm. wide and its postholes, shallower than those on the north, appeared to have only held one post. An end wall was only preserved at the west end and consisted of two small postholes, 536 and 537, which had been all but obliterated by erosion. That they were certainly man-made features was demonstrated by the find of a mussel shell hinge at the base of 537. Corner posts were entirely lacking; 565 appears, by comparison with the west end, to be too close to its neighbours to represent a corner and its place in the structure remains uncertain. The same was true of a shallow posthole, No. 558, just outside the north wall, and 594 near the end of that wall which probably represents a natural feature. Outside the southern entrance, about a metre from the wall, was a hearth pit, 550, containing quantities of ash and some pieces of Saxon pottery. Unfortunately none of the postholes contained any datable material but, as the plan shows, several postholes cut Neolithic and early Iron Age features.

It goes without saying that ephemeral traces such as these are a poor basis on which to reconstruct so large a building. We are helped however by its most distinctive feature, the curved long walls, which are also seen on a number of other migration period buildings such as Buckden,¹ Cheddar,² Saint Neots,³ Portchester,⁴ North Elmham,⁵ Catholme⁶ and, in all probability, the original hall of Westminster Palace.⁷ Curved side walls imply a curved roof ridge and a building somewhat similar to those portrayed by the Anglo-Danish hogback tombstones.⁸ Dr. Hope-Taylor, in reviewing the 'boat-shaped' house type, has suggested that its curved lines were designed to reduce wind stress on a long narrow building.⁹ The Bishopstone example extends the geographical range of these buildings to the South Coast, and their temporal range back in time probably to the fifth or sixth centuries A.D. Thus we have evidence of this building type in England prior to the period of Scandinavian influence, when it was once thought to have been introduced.

A further obvious feature of the building is its paired posts, such a regular distance apart that they cannot represent replacements. None of the holes contained packing and they seem to have been made approximately the right size and shape for the timbers, but because they were so shallow it was seldom possible to decide at what angle the post lay. Most seemed to be vertical but in a few cases, such as 484 and 556, the inner posthole was shallow and it looked as if the post might have leant slightly inwards. The same thing might be indicated by the sloping base of 499. If this impression is correct then it becomes possible that we are dealing with a cruck building. The structure was obviously laid out with some care and a noteworthy feature is the close similarity which exists between the two side walls. Each post pair has a corresponding pair on the opposite side, and the distance between neighbouring posts was similar on the two sides. This is shown by the following measurements of the distance between centres of the outer postholes.

¹ C. F. Tebbutt, 'An eleventh-century 'Boat-shaped' building at Buckden, Huntingdonshire,' *Proc. Cambridge Antiquarian Society*, vol. 55 (1962), pp. 13-15.

² P. Rahtz, 'The Saxon and Medieval palaces at Cheddar, Somerset,' *Medieval Archaeology*, vol. 6-7 (1962-3), pp. 53-66.

³ P. V. Addyman, 'Late Saxon settlements in the St. Neots area—Part III,' *Proc. Cambridge Antiquarian Society*, vol. 64 (1973), pp. 45-99.

⁴ B. W. Cunliffe, 1976, *op. cit.*, pp. 41-44, Building S15.

⁵ P. Wade-Martins, 'Excavations at North Elmham, 1969: an interim report,' *Norfolk Archaeology*, vol. 35 (1970), pp. 25-78.

⁶ *Medieval Archaeology*, vol. 20 (1976), pp. 169-70, structure 2.

⁷ R. Allen Brown, H. M. Colvin and A. J. Taylor, *The History of the Kings Works* (1963), vol. 1, pp. 42-48.

⁸ J. Walton, 'Hogback tombstones and the Anglo-Danish house,' *Antiquity*, vol. 28 (1954), p. 68.

⁹ B. Hope-Taylor, 'The Boat-Shaped house in northern Europe,' *Proc. Cambridge Antiquarian Society*, vol. 55 (1962), pp. 16-22.

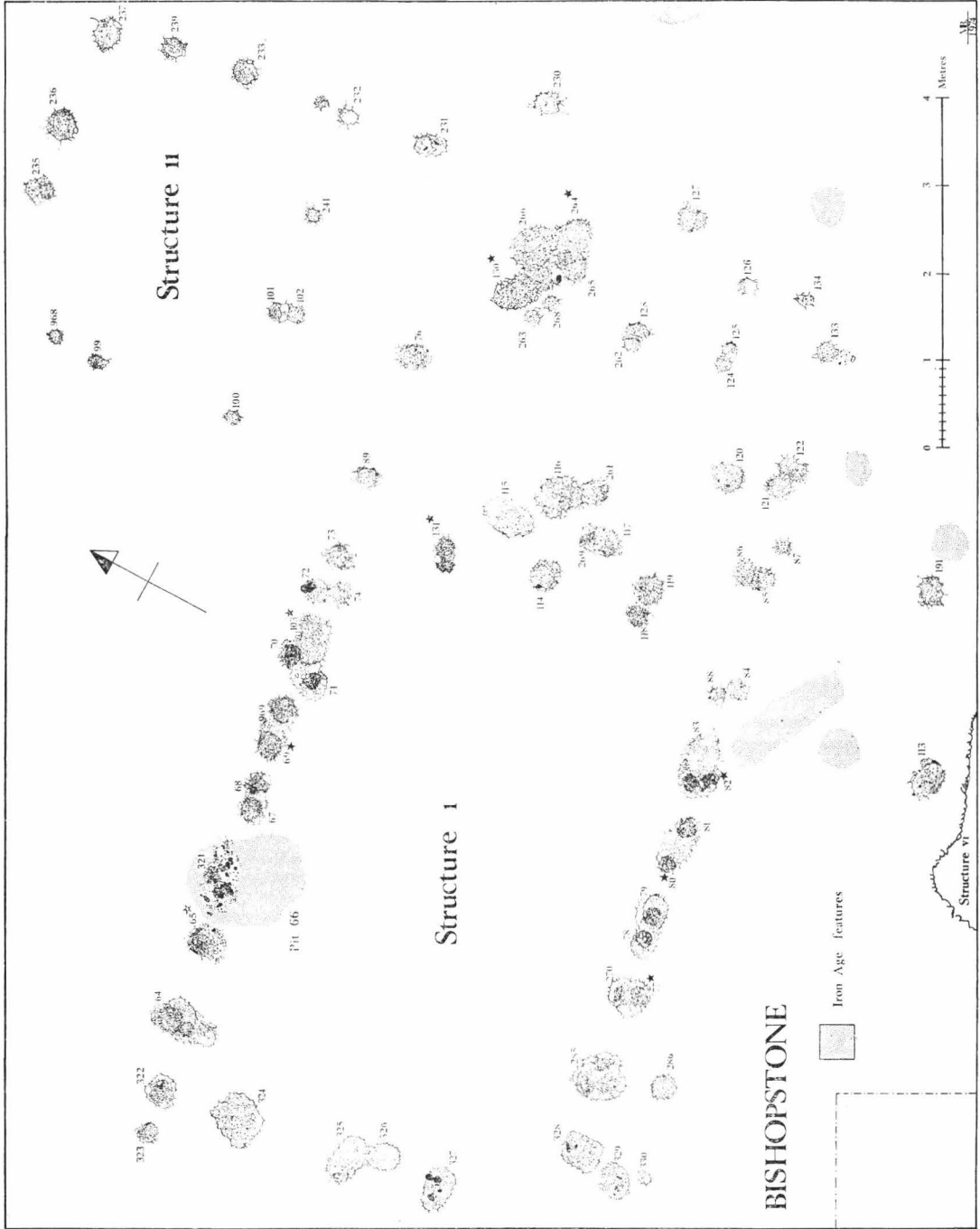
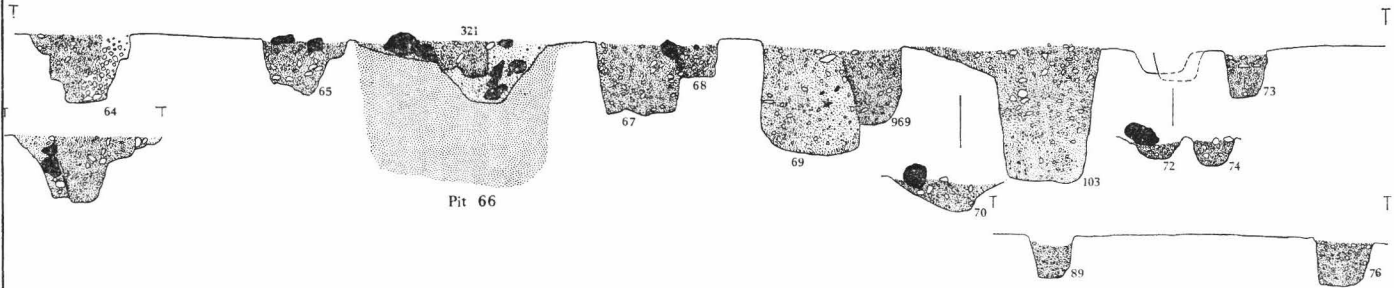


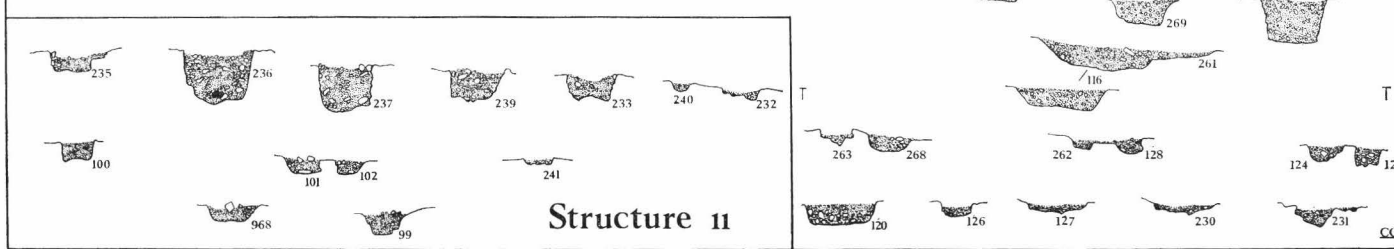
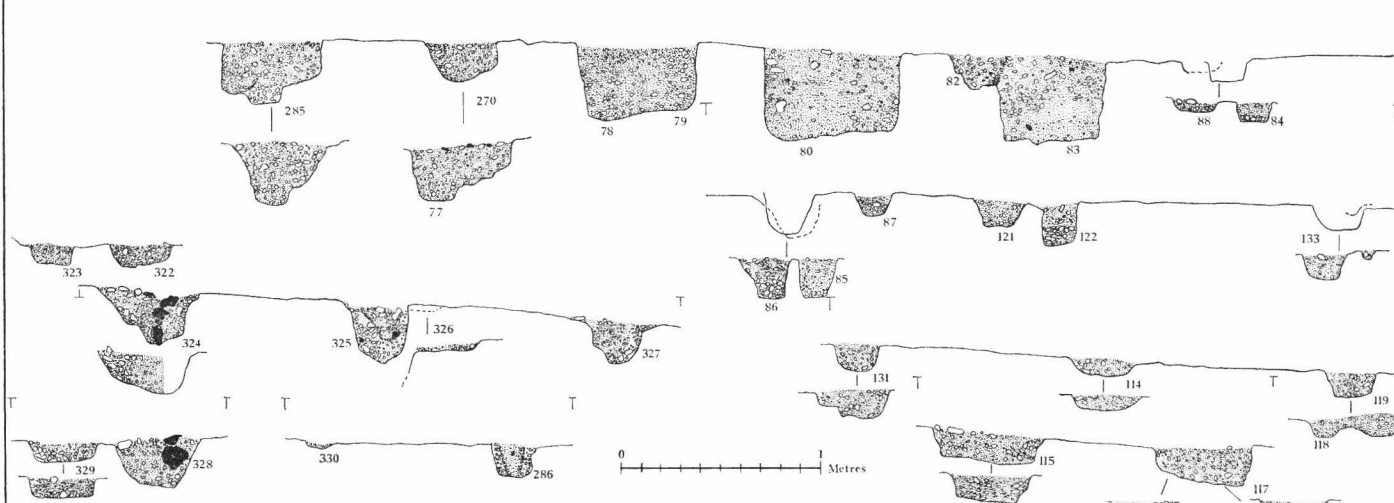
FIG. 90. Plans of structures i and ii

North Wall

Structure 1



South Wall



Structure 11

CG+MB

FIG. 91. Structures i and ii, sections of postholes

				Door			
North wall	1.28m.	1.46m.	0.94m.	0.80m.	1.10m.	1.40m.	1.25m.
South wall	1.24m.	1.28m.	0.80m.	1m.	1.30m.	1.55m.	1.10m.
				Door			

Other salient features are the absence of corner posts, at least sufficiently deep to be preserved, and the extremely slight end walls. The main roof load of the building seems therefore to have been taken on the curved side walls.

LARGE RECTANGULAR BUILDINGS

Structure I (Figs. 90 and 91 and Plate XII)

A large rectangular post-built structure, the most complex of those excavated. It exhibited at least two phases which, in the absence of overall stratigraphy, it was not always easy to separate. The first phase comprised a building 7m. by 5m. with the longer walls founded on fairly large postholes. Three of these on each side were massive, Nos. 67, 69 and 103 on the north wall, and 78, 80 and 83 on the south wall. They had been carefully cut with vertical sides apparently to take rectangular timbers 40cm. by 20cm., that had been buried between 35 and 65cm. into the chalk. These three posts were not situated in the middle of the longest walls but were closer to the east end. On the north wall the depths of the three postholes increased towards the east, but on the south wall the centre example was slightly larger. Other posts of the side walls were set in more modest pits about 40cm. in diameter and 30cm. deep. As was usual the end walls were less massively built; that on the west side comprised two double postholes, 324 and 327, with a single shallow post, 326, between them. A similar arrangement was found at the east end with two double posts, 118 and 131, flanking a shallow single post. Corner posts were absent excepting 322 in the north west corner, which may or may not have belonged to this phase. No obvious entrances could be identified, the gaps between postholes in the side walls were scarcely wide enough, and one presumes that entrances lay somewhere on the end walls.

Succeeding this was a building of the same general plan and width but extended to the east to give a total length of 10m. Though larger the successor was not as massively constructed and was founded, to a large extent, on pairs of postholes. Each member of these was circular, 20 to 25cm. in diameter, and up to 37cm. deep, usually much less. These soil filled double postholes were the first to be seen when the chalk surface was cleaned and planned preparatory to excavation of the features. Only as they were being sectioned did it become apparent that they cut into the much larger chalk filled postholes of the first phase. In general the post pairs were orientated at right angles to the line of the wall; there were however two exceptional pairs on both side walls which lay along the wall line. Those on the north wall were Nos. 67/68 and 69/969, those on the south 78/79 and 80/81. Again the end walls were based on rather shallow postholes, that on the east comprised double postholes 124, 262 and 263. The west wall was on the same line as that of the earlier building and appeared to consist of double postholes cut into the top of the earlier post pits. Corner posts were absent in at least three of the four corners. A lack of obvious entrances noted for the first phase is equally true of the second. One may possibly have existed near the east end of the north wall where the usual double posts were replaced by two singles, 89 and 76, with a 1.2m. wide gap between them.

Having disentangled the basic plans of the two phases there remains a residue of postholes which might belong to either. Nos. 115 and 117 could have been supports for the east wall of

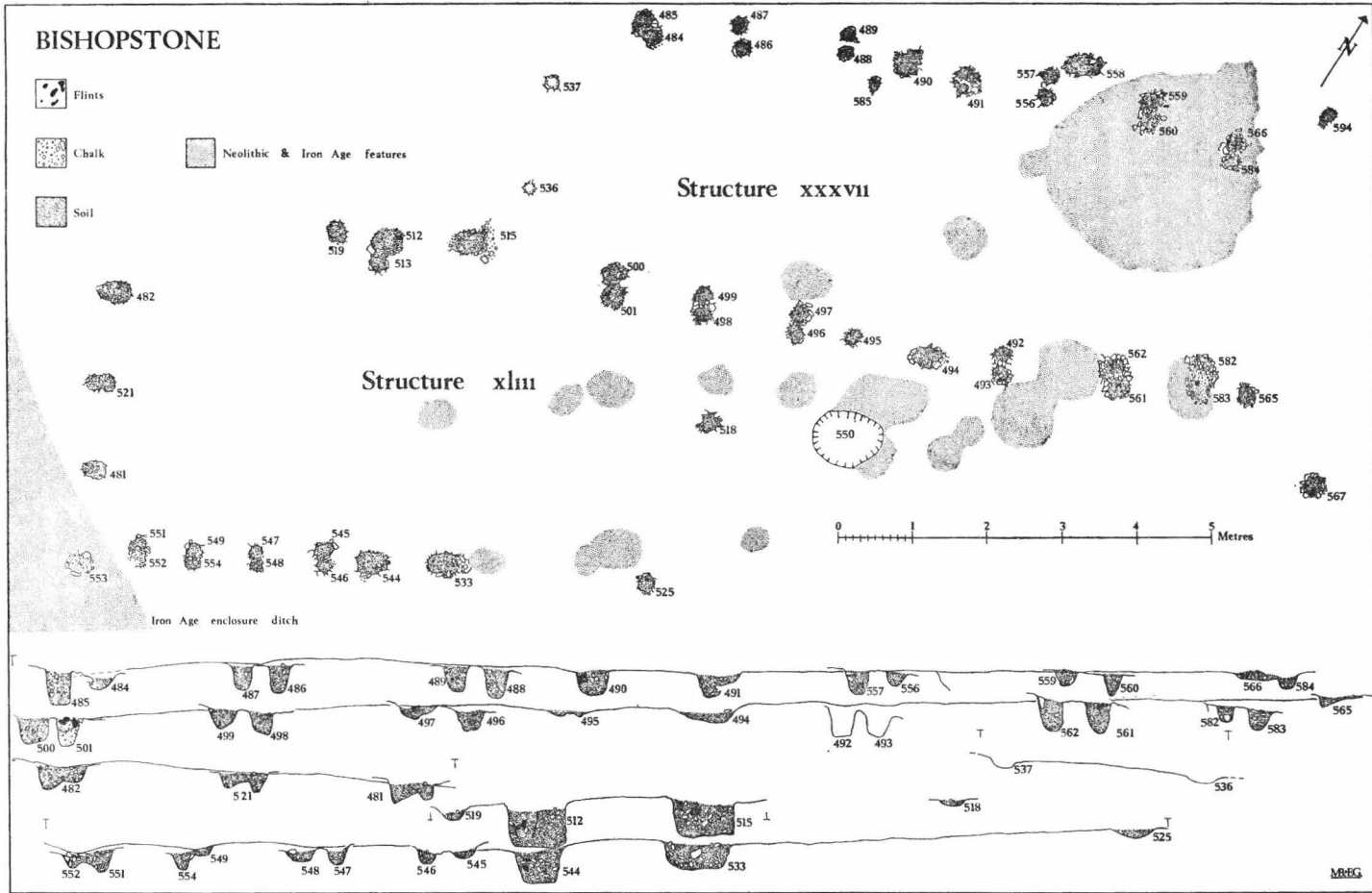


FIG. 92. Structures xxxvii and xliii, plans and sections

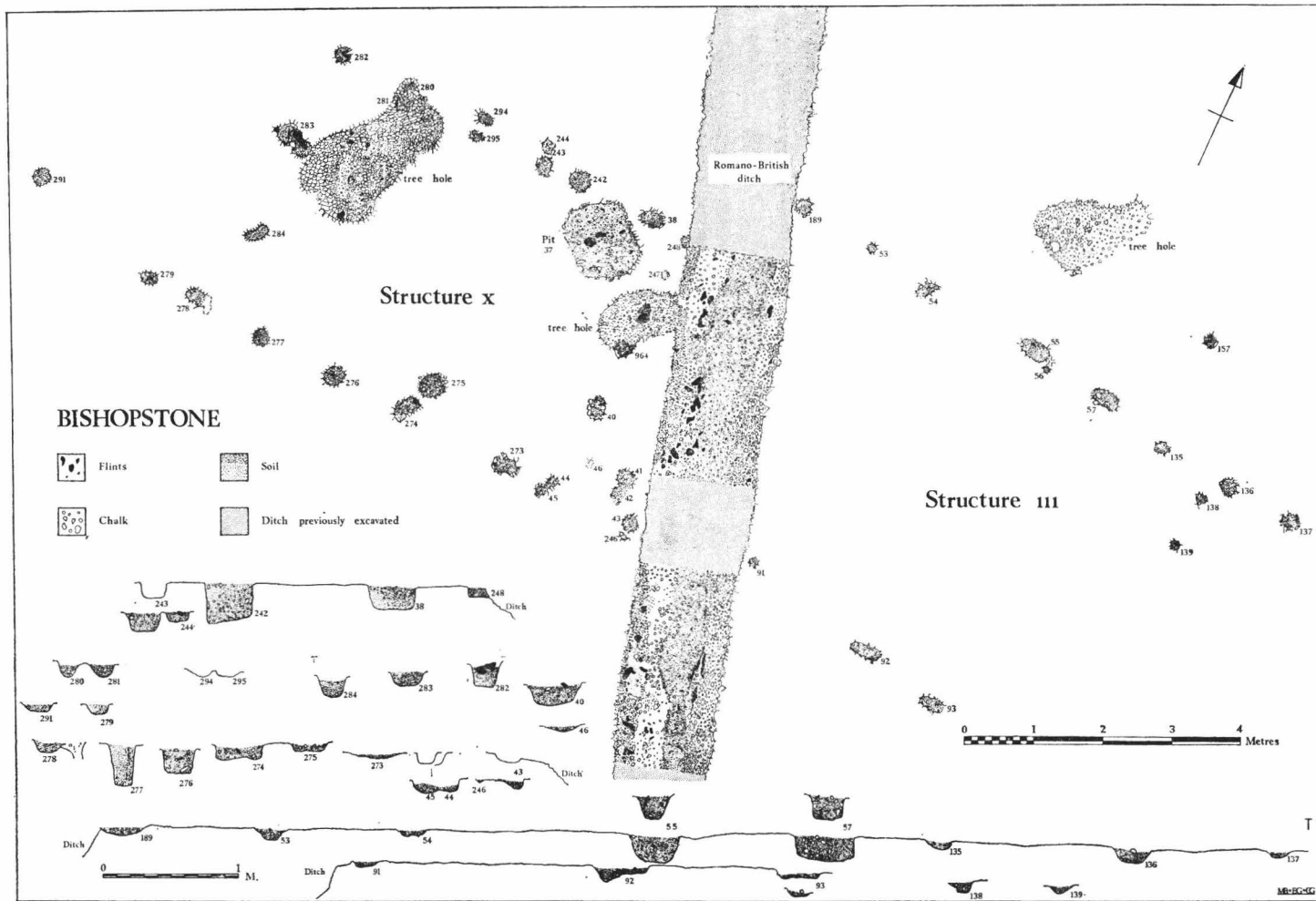


FIG. 93. Structures x and iii, plans and sections

the first phase; equally they might indicate an internal partition in its successor. If the latter were the case then a 55cm. wide doorway probably lay between them, and the portion of the building partitioned was 4m. by 2m., about one fifth of its area. Hitherto we have also left unexplained a group of five intersecting postholes centred on No. 266 and lying beside the east wall of the second phase. Each of these holes was shallow, between 6 and 8cm. deep, and presumably they represent the site of a frequently replaced and apparently unassociated post.

There was obviously a close similarity between the succeeding buildings, they were both on the same general plan and both had some unusual features in their side walls. During the first phase there were three massive post pits on each wall, the two westernmost of which were replaced, during the second phase, by post pairs along the line of the wall. Furthermore both buildings lacked obvious corner posts and entrances. It is difficult to escape the conclusion that the six large posts of the first building were designed to take some extraordinary weight or stress. Perhaps we should envisage a second storey on part of the building or even perhaps some form of tower.

As to its function there is little basis even for guesswork, but a good quantity of marine molluscs, pottery and other debris in the postholes might suggest domestic activities in the area. Sherds of fabric I came from the following postholes: 77, which produced sherds of a thin globular vessel; 131 which contained a small thin sherd with an incised line; 130, 69, 65, 80, 82, 103 and 264. In addition Romano-British sherds came from 285, 121, 122, 103, and 131. Four postholes produced pieces of charcoal but by no means in sufficient quantities to suggest the timbers themselves had been burnt. Samples from 83 and 115 were oak and those from 117 and 67 hawthorn. Structure I produced evidence for the use of beach pebbles as a flooring material since they were found in postholes 325, 79, 74, 103 and 117. One hole, 83, contained a fragment of daub.

Structure XXVIII (Fig. 94)

A rectangular building 9.4m. by 5m. laid out on a convenient flat terrace provided by the negative lynchet of an earlier 'Celtic' field. Three-quarters of the building has been excavated, the north western quadrant by its finder, Mr. Thomson in 1969, and the eastern half by the writer in 1971. In the middle of the east end was a pair of large oval postholes, No. 645, 39cm. deep, and No. 646, 30cm. deep. Both were unusual among Saxon postholes on the site in that the timber had been packed round with flints. Between the two posts was a 90cm. wide gap which might represent a doorway, in which case the door was probably hung on post 967. If an imaginary line were drawn through this entrance down the main axis of the building it would be seen that the two halves are symmetrical, opposite postholes of the side walls being of similar size and shape. Many of the holes were double and the impression gained is that the two posts were generally contemporary. Each of the corners was represented by a single post which was noticeably small and shallow. At the east end the side walls projected a little beyond this supposed corner and ended in two small but deeper postholes, 642 and 648. Indeed the overall impression presented by the east end is of a slightly concave wall, that is if the assumption that the building is of only one phase is well founded. Possibly there was an entrance in the middle of the north wall, but one cannot be sure because a modern fence which runs across this area necessitated a baulk. Constructional techniques somewhat similar to those employed in this building were found in Structure XXXII. This also had a pair of large postholes in the middle of the end wall, and side walls founded on apparently contemporary double postholes. Near the building's north west corner was an oven,

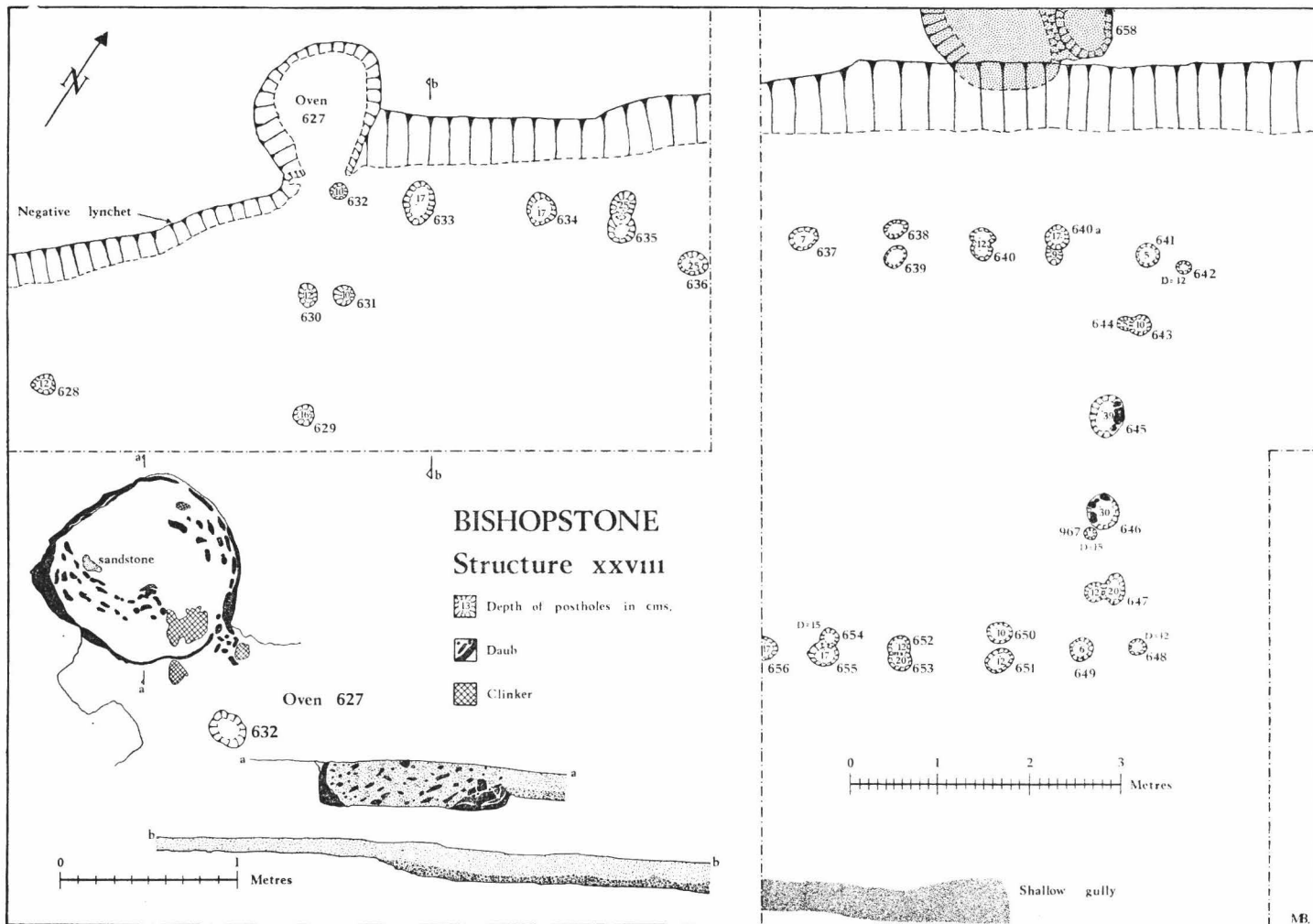


FIG. 94. Structure xxviii, plan

feature 627. This was probably of Saxon date, but one suspects that it may not have been contemporary with the building to which it would have presented a fire risk. Roughly parallel to the south wall and 2.5m. from it was a gully 30cm. wide and 3cm. deep. It was a superficial feature which barely penetrated the chalk and there is no firm evidence to associate it with the building.

Relative dating is provided by the fact that Structure XXVIII postdated a field last cultivated during the Romano-British period. Five sherds of that date came from the postholes but no Saxon pieces. However the overlying top soil contained a large number of sherds of Anglo-Saxon fabric 1, including vessel 30 and the following stamped sherds: 42, 43, 44 and 45, which are probably of sixth century date. One fragment of daub might be part of a loom-weight but was too small for certainty. There was also a very obvious nucleation of beach shingle in this area indicating that it may have been used as a flooring material.

Structure XI (Fig. 95 and Plate XIII).

A rectangular post-built structure 8.6m. long but with only about two-thirds of its width in the excavated area. Some of the postholes were cut into sediments filling the negative lynchet of a 'Celtic' field system and only just penetrated the solid chalk, but the remainder were cut into solid chalk at the edge of the field. The unconsolidated sediments in the negative lynchet had however been somewhat eroded by recent ploughing, with the result that only the bases of some postholes remained superimposed on a palimpsest of Iron Age and Romano-British plough-marks. As was general among the Bishopstone buildings the side walls were a good deal more substantial than the end walls. No trace was preserved of a posthole at the east corner, and the posthole pair at the west corner was characteristically shallow. Many of the postholes showed signs of recutting, and the side wall, in particular, comprised an unusually large number of posts. The likelihood is that a reconstruction of the building had been made on the same plan. During its latest phase the entrance was probably the 70cm. wide gap between posts 309 and 310, both of which were oval in plan and noticeably larger than their fellows. An unusual feature however is that this supposed entrance was not centrally placed in the side wall. A possible explanation is provided by a series of postholes on the inside of the building. These were 318, 319, 342 and 966, which might represent an internal partition forming a smaller room 1.8m. wide at the west end. The entrance would then have been centrally situated in the larger room. Attractive as it is to suggest that the smaller room was added at the time of the reconstruction, thus accounting for the asymmetry of the entrance, all the evidence indicates that the whole building, including the partition, was rebuilt. Finds from the postholes included sherds of Anglo-Saxon fabric 1 from 299, 301 and 303; sherds of Iron Age fabric 2a from 304 and 310; and fragments of daub from 301 and 309.

Structure III (Fig. 93)

A large rectangular building which when excavated, was on the point of being obliterated by the plough. The postholes were very shallow and its acceptance as a rectangular building involves the assumption that others had been lost by erosion. What remained were parts of two parallel side walls 5m. apart, interrupted by opposing entrances which are fundamental to the structure's interpretation. The north entrance was 1m. wide flanked by a pair of large oval posts, No. 55, 21cm. deep, and No. 57, 19cm. deep. Beside 55 was a small posthole, 56, probably also associated with the doorway. The northern wall was tolerably well preserved, being represented by a total of eight posts between 20 and 25cm. in diameter, varying in depth between 4 and 10cm. The southern entrance was 90cm. wide and flanked by two oval postholes. No. 92 seemed to have

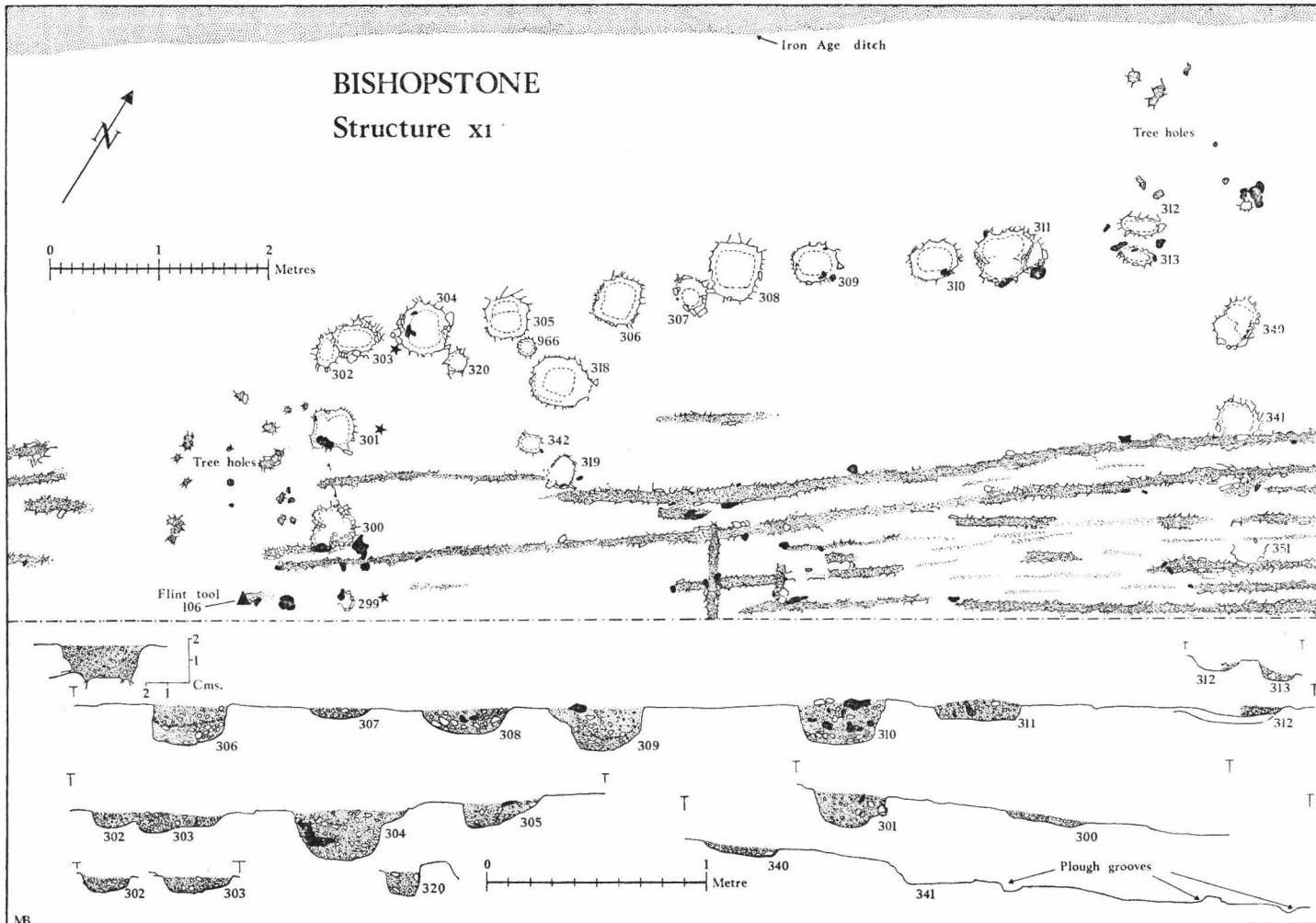


FIG. 95. Structure xi, plan and sections

taken two posts, for its base had a stepped profile, one part being 10cm. deep, and the other 4cm. No. 93 on the other side of the doorway was only 3cm. deep. Apart from this entrance the only other obvious post of the southern wall was No. 91. Part of the western end of the building had been removed during the excavation of a Romano-British ditch prior to the commencement of area excavations. It is likely that posthole 41 and 42 on the opposite side of the ditch represent the end of the southern wall, but no trace was found of the west wall even in those parts of the Roman ditch not previously excavated. It could perhaps be said that certain of the postholes assigned to the east wall of Structure X were in reality parts of the west wall of Structure III, but it will be seen that they follow the slightly different alignment of Structure X. Probably the west end had been eroded just as, it is assumed, was the east end. If post 41 does represent the south west corner of the building, and it is accepted that the entrances were centrally placed, then the halves of the building, on either side of a line through the entrances, were roughly square giving a building 10m. long by 4.9m. wide. It might be argued that posts 138 and 139 are remnants of the east wall; if so the entrances cannot have been centrally placed. This is militated against however by 137 which appears to show that the wall continues. It may tentatively be suggested that if 138 and 139 were part of the building then they formed an internal partition at the east end, similar to that found in some of the Chalton buildings.¹ No definitely Saxon finds came from the postholes but one possible Saxon sherd was found in 138, a Romano-British East Sussex Ware sherd in 55 and a flint side scraper in 139.

Structure XLIII (Fig. 92)

The identification of this as a structure rests on the assumption that part of it, indeed virtually the whole east side, has been lost by erosion. One corner was intact and formed by seven double postholes, each hole of which was 20cm. in diameter and between 10 and 15cm. deep. Just outside the angle formed by these two sides was a single posthole, 553, represented by the merest trace in the top of the Iron Age ditch; whether it formed part of the building is uncertain. At the end of one of these sides were two larger oval postholes of the type which, in other buildings, marked doorways. This proposed entrance was 71cm. wide, and its flanking postholes 20cm. deep. Matching it was a pair of similar postholes, Nos. 512 and 515, 4.5m. to the north forming an entrance 73cm. wide. The flanking postholes were 25cm. deep and each of them had in their fill areas of soil, the shapes of which indicated they had taken rectangular uprights. Inside the north door was a shallow posthole, 513, on which the door may have been hung. There was no trace of the rest of the north wall, excepting posthole 519. If the opposing doorways of this building were in the middle of the longest sides, as they were in most other structures, then it was 8.8m. long. That this was the case is suggested by two small postholes which might be the remnants of its eastern portion. These were 525 which was probably part of a south wall and 518 which may have been part of the east wall, giving an overall length of 8.6m., very close to that predicted. With so much of this building missing some might prefer to see its south west portion as a fence corner, but the opposing doorways would seem to decide against this. Whether, on the other hand, it was a building as large as that proposed must remain unknown. None of the postholes contained any Saxon sherds, but there was a late Iron Age or Romano-British sherd in 512, and fragments of burnt clay in 544.

¹ P. V. Addyman and D. Leigh, 1973, *op. cit.*, pp. 1-25.

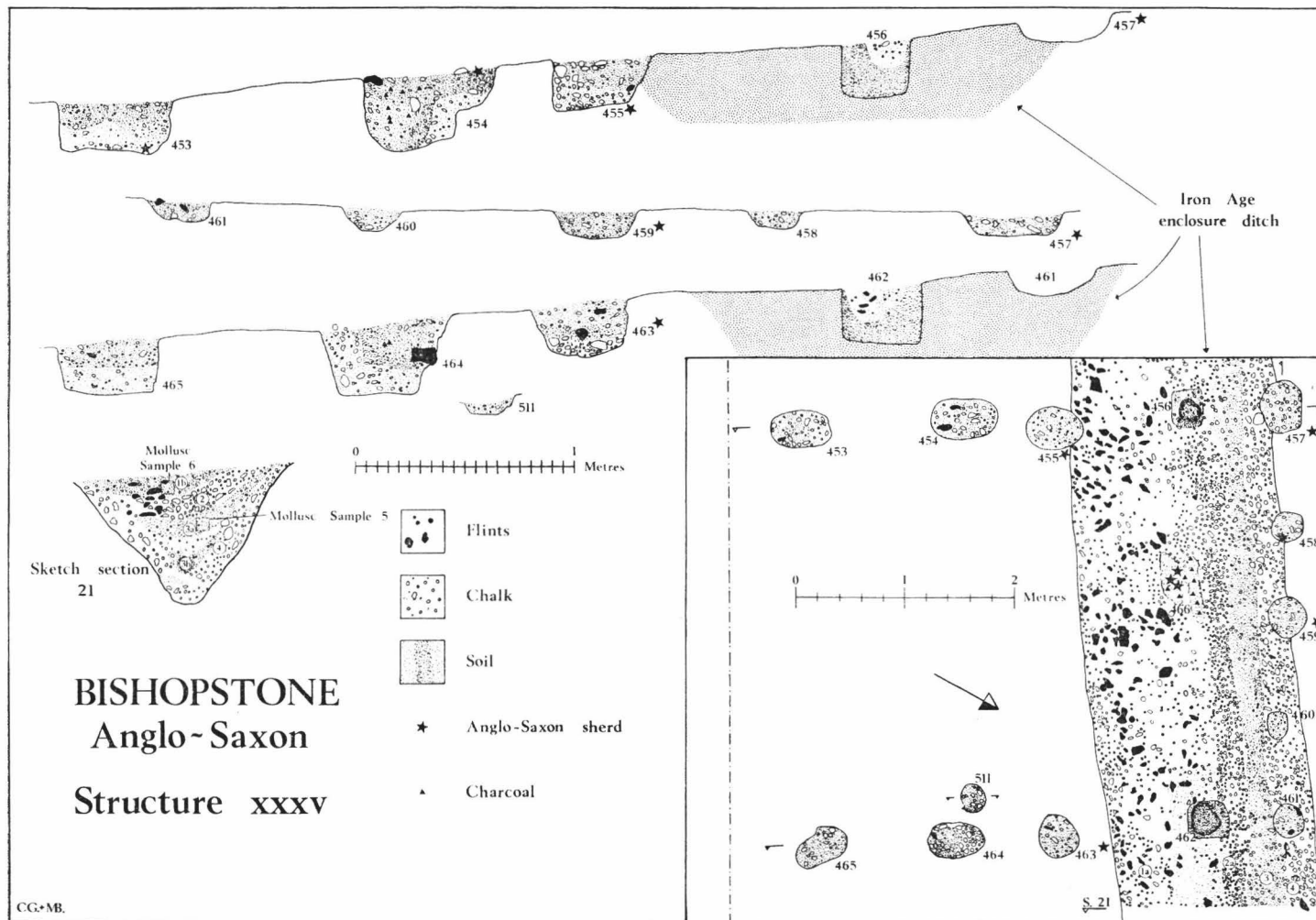


FIG. 96. Structure xxxv, plan and sections

Structure XXXV (Fig. 96 and Plate VI)

Part of a rectangular building 4.2m. wide and in excess of 5.2m. long; its south end lay outside the excavated area. An unusual feature was its north west/south east alignment, contrasting with the other buildings which were roughly east/west. The north end of the building had been cut into the early Iron Age enclosure ditch, and this resulted in rather better preservation of part of it than was usual among the Bishopstone buildings. The north wall comprised five relatively shallow postholes of which that in the centre, No. 459, was the largest. On either side of it were two particularly small postholes 458 and 460, and outside these the corner posts which were quite wide but noticeably shallow. This comparatively lightly built end wall contrasted with the much larger and deeper postholes of the side walls. The sections of these show quite clearly that the posts were paired across the building, meaning that opposite posts were of similar size and shape and evenly spaced from their neighbours. Substantial square pits had been made for posts 456 and 462, which were cut into the Iron Age ditch. Within these post pits were the clear casts of circular timbers, 25cm. in diameter. Two opposed doorways were probably marked by pairs of large rectangular postholes measuring 30cm. by 25cm. and between 20 and 30cm. deep. The west doorway lay between posts 453 and 454 and was 1m. wide, the east doorway between posts 465 and 464. A further indication that the latter was an entrance was the small post 511, on which the door itself was probably hung. No such post was found beside the west entrance, but posthole 454 had a stepped base indicating that it had held two posts or had been recut. Most doorways in the Bishopstone buildings were situated in the mid-points of the longest sides; if the same applied here then the building's overall length may be reconstructed as 7.5m., giving a building about twice as long as it was broad. Within the building, near its north end, there were traces of an internal feature, No. 466, represented by an area of dark earth, large pieces of charcoal and sherds of a Saxon pot. Initially this was interpreted as a section of the Saxon floor which had slumped into the underlying ditch. An alternative explanation is that it represents part of an internal partition, most of which has been eroded. Similar internal divisions were found in some of the Chalton buildings,¹ but none were as narrow as this possible example which can have been no more than a metre wide. The presence of quantities of charcoal on the line of the proposed partition, and in postholes 454, 462, 463 and 464, indicates that the building was destroyed by fire. Six samples of this timber have been identified by Caroline Cartwright as oak. A Carbon-14 determination on this material gave a result of a.d. 320 ± 70 (Har-1663), however the timber from which the building was made may have been of some age. Compared with most of the other buildings this example produced a fair quantity of domestic debris. Illustrated vessels came from 466 (vessel 19) and 458 (vessel 18), and in addition the following postholes contained sherds of Saxon fabric 1:— 457, 453, 454, 455, 459 and 463. Several postholes also contained marine molluscs. This relative concentration of artifacts suggests perhaps a domestic function, and may also reflect the breakage of artifacts as a result of the fire.

MEDIUM-SIZED RECTANGULAR BUILDING

Structure X (Fig. 93 and Plate XVII)

A rectangular building measuring 6m. by 4.4m. It was constructed largely of post pairs at right angles to the axis of the wall. The individual postholes were circular and between 20 and 25cm. in diameter, mostly about 13cm. deep. They were spaced at intervals of about 1m. One

¹ P. V. Addyman and D. Leigh, 1973, *op. cit.*

definite entrance 90cm. wide was found beside the north corner flanked by two large oval postholes, No. 242, 29cm. deep and No. 38, 18cm. deep. Roughly opposite these the 1.4m. wide gap between 274 and 273 might represent a southern entrance, also indicated by the presence of a post (275) on the inside. However 274 was a double post and 273 very shallow, so the entrance is questionable. An equally plausible position for a southern entrance is the 1m. wide gap between postholes 277 and 276, both of which were deeper than the norm. The east wall is unusual in that it comprised only single posts. There is the suggestion, from the post pair 43 and 246, that the building might have extended further to the east but confirmatory evidence was entirely lacking. Instead we must envisage a narrow passage some 80cm. wide between this building and Structure III, that is if they were contemporary. It will however be observed that they are on slightly different alignments; X was narrower than III, and its wall line projected further to the south, one possible interpretation being that they were not contemporary. Dating evidence for Structure X is poor; postholes 281, 280, 963 and 964 cut into tree holes; 244 contained a sherd of samian; 278 a sherd of Iron Age fabric 3c and some fragments of daub.

SMALL RECTANGULAR BUILDINGS

Structure II (Figs. 90 and 91)

A lightly constructed rectangular building measuring 3.6m. by 3m. It consisted of thirteen postholes, most of which were under 20cm. in diameter and between 4 and 14cm. deep. Two exceptions in the north west corner were rather larger; No. 336 was 25cm. deep and 237, 21cm. deep. Larger postholes often seem to have been made to flank entrances and if that was the case here it was 80cm. wide. A further possible entrance may also be represented by the 1m. wide gap in the middle of the south wall. Neither of the postholes which flanked it was particularly large but that on the west was a lone double example. To the south of this building was the complex series of postholes which represented the various phases in the life of Structure I. Some might prefer to see Structure II as a larger rectangular building extending further south over Structure I but, as the plan shows, few postholes in this area were in line with either the west or east walls of Structure II. Indeed this interpretation would give a curious irregular building quite out of character with the others. Though we may suspect that it was a small ancillary building contemporary with Structure I, dating evidence was absent except for a sherd of Romano-British East Sussex Ware in feature 233.

Structure XXXIII (Fig. 97 and Plate XVI)

A lightly built rectangular structure measuring 4.7m. by 3m. Its identification as a building rests very largely on two parallel side walls, each comprising four postholes of diameter 20 to 25cm., and all close to an average depth of 9cm. It will be observed that the spacing between these posts was similar on either side of the building. A west wall may be represented by posts 404 and 399, on the inside of which were two intersecting postholes, 401 probably postdating 402. The only possible remnant of the east wall was 422. It may appear from Fig. 97 that postholes 386, 433 and 410 indicate that the building continued to the west. Excavation failed to reveal any traces of corresponding posts of a southern wall, and an alternative explanation for these additional postholes is that they represent a fence line. Interpretation of so slight a structure, completely lacking corner posts, is bound to be speculative. We might see it as a small lightly built ancillary structure; equally it could have been an unroofed pen. The only finds were sherds of Iron Age fabric 5 from 422 and 404, and beach pebbles from 421 and 404. No. 410, a probably unassociated posthole to the west, produced a small Iron Age sherd.

PARTS OF OTHER RECTANGULAR BUILDINGS

Structure XXXII (Fig. 97)

One end of a rectangular building 4.6m. wide and in excess of 3.6m. long. It was probably in fact much larger for the west part appeared to lie outside the excavation in the back garden of a bungalow on the Harbour View Estate. In the middle of the east end of this building was a pair of large oval postholes, Nos. 397 and 398, both 25cm. deep. It was estimated that 398 originally took a timber c.15cm. in diameter. Between the two posts was a gap which might be seen as an entrance, but if so, being only 70cm. wide, it was narrower than most. The two other postholes of the end wall were of differing size and depth, 412 being 14cm. deep and 396, 11cm. At right angles to this end was the side wall with a shallow circular posthole (392) at the corner, and a rectangular post socket (394) just outside the corner. The remainder of the wall consisted of two postholes, 409 and 391, which were circular in plan, but when excavated had two stake-holes cut into their bases astride the line of the wall. In each case the depth of the outer stakehole was 15cm. and that of the inner, 11cm. Each of them would have taken a timber between 5 and 6cm. in diameter, in the case of 391 this was rectangular or square. All that remained of the southern wall was a very similar posthole, No. 385, with a pair of stakeholes in the base. No trace was found of the south east corner perhaps because there was a patch of rotten chalk in that area. Nor did the slight extension of the excavation into the baulk, drawn on the plan, produce any further traces of the side walls. However there is every likelihood that this represents part of a larger rectangular building, the proposed side walls are of identical construction, and the large oval posts at the east end are a feature seen also in Structure XXVIII. The only finds were Iron Age sherds of fabric 2a from 409 and fabric 5 from 394.

Structure XXXI (Fig. 99)

Eight postholes forming an approximate right angle, presumably the corner of a structure most of which was outside the excavation. 5.8m. of one wall was uncovered and 2.2m. of the adjoining wall. The postholes were between 20 and 30cm. in diameter, 15 to 31cm. deep. Four of them had been cut into Neolithic Pit 357 and the neighbouring Iron Age enclosure ditch. Those in the latter were somewhat enigmatic since the area had been disturbed by rodents. It is likely that these postholes represent one corner of a rectangular building. An alternative explanation is that the structure was a fence corner, but if that were the case one would expect the corner post, No. 435, to have been more substantial, whereas it was similar to the weak corner posts noted in several Saxon buildings. The only finds were four sherds of Iron Age fabric 3a from the postholes which were cut into the Iron Age ditch.

Structure LVII (Fig. 99)

Nine small postholes of average diameter 15cm. which ranged in depth between 3 and 25cm. They formed a right angle, the north arm of which was 1.8m. long and the east arm 2m. long. Contained within this angle was Iron Age Pit 791. In the absence of any finds from the postholes it was originally assumed that they were associated with the pit and of Iron Age date. Subsequently it became clear that such small postholes were seldom encountered in the Iron Age and they were more likely to represent the corner of an Anglo-Saxon structure. If this interpretation is correct the remainder of the building may have been eroded away. It is also possible that some parts of it were missed during the original excavation.

Structure LVIII (Fig. 99)

A nucleation of nineteen postholes was uncovered during 1970 in the southern part of the Romano-British enclosure. The postholes did not form a distinct building plan but they do have a number of features which suggest that they represent the site of an Anglo-Saxon building. They were of roughly similar size averaging 20cm. in diameter and 10 to 15cm. deep. At least one pair of double posts was present comprising 824 and 825 and probably a second pair, 829 and 830. The two largest postholes 826 and 827 were oval, 30cm. by 25cm. and 23cm. deep. Comparisons with other buildings suggest they flanked an entrance which, in this case, was 76cm. wide. When this area was excavated the possibility that this grouping had formed part of a single building was not recognised. This may mean that other postholes were missed, and in any case much of the building must have lain in the unexcavated area to the south. If we are correct in identifying this as a building then it must have measured at least 4.6m. by 3.4m. The only finds from the postholes were a sherd of Romano-British East Sussex Ware and two tiny pieces of daub from Feature 816. Among the top soil over the whole area of the Romano-British enclosure was a good deal of Romano-British pottery and a light scatter of Anglo-Saxon sherds.

BUILDING WITH FOUNDATION-TRENCH

Structure XLVII (Fig. 98)

A rectangular building 6.5m. by 4.3m. the walls of which were defined by trenches interrupted at intervals by postholes and by two opposed entrances. Its situation exploited an area of level ground which was the top of a positive lynchet last cultivated during the Romano-British period. The building was excavated in 1970 but additional information was obtained from a more detailed study of the lynchet itself during 1975. The wall trenches averaged 35cm. wide and 25cm. deep, they were straight-sided and flat-bottomed. Because it was constructed on a lynchet the foundations on the south side were excavated partly into the soil and the wall trench east of the entrance did not penetrate the solid chalk. Any instability which the poor foundations on this side might have given to the building was redressed by packing the timbers with flint nodules. There were ten main structural timbers; one at each corner, one roughly in the middle of each shorter side, and the remaining four flanking the two entrances. These postholes varied in depth between 30 and 50cm., the oval examples beside the entrances being the more substantial. The north entrance was at least 65cm. wide, and just inside it on one side was a small square post (972) on which the door was probably hung. A similar square posthole (974) had been cut about halfway along the eastern portion of the north wall, and one expects that this may also have been connected with the entrance arrangements. Just outside this entrance the chalk had either been worn away or excavated producing a slight hollow little more than 7cm. deep. The southern entrance was about 92cm. wide and it is fortunate that posthole 978 contained carbonised remains of the door post, showing it to have been a rectangular timber 30cm. by 7cm. Cut into the side of this posthole was another which had taken a small circular post on which the door was probably hung. Outside the entrance there was a curved gully and two stakeholes which might have formed part of a light porch structure. Within the building there were fourteen small circular holes averaging 10cm. in depth. It is difficult to be sure whether these were man-made stakeholes or natural features, however those in the west part of the building did form rough lines which could represent internal partitions of some kind.

Because this building was situated in an unploughed area of deeper sediments it was the best preserved of the structures. This preservation was enhanced by the fact that it had been burnt and a few carbonised timbers remained. In addition to the vertical doorpost in 978 there was a quantity of charcoal in the wall trench west of the south entrance. Though disintegrated, it appeared to have come from a beam, some 15cm. wide, which had laid horizontally in the trench. This impression was strengthened by finding, on both sides of the southern entrance, two rows of flints which might have served as packing on either side of a beam. A sample of the charcoal has been identified as oak. Another material used in the building was a chalky daub, pieces of which were found in posthole 978.

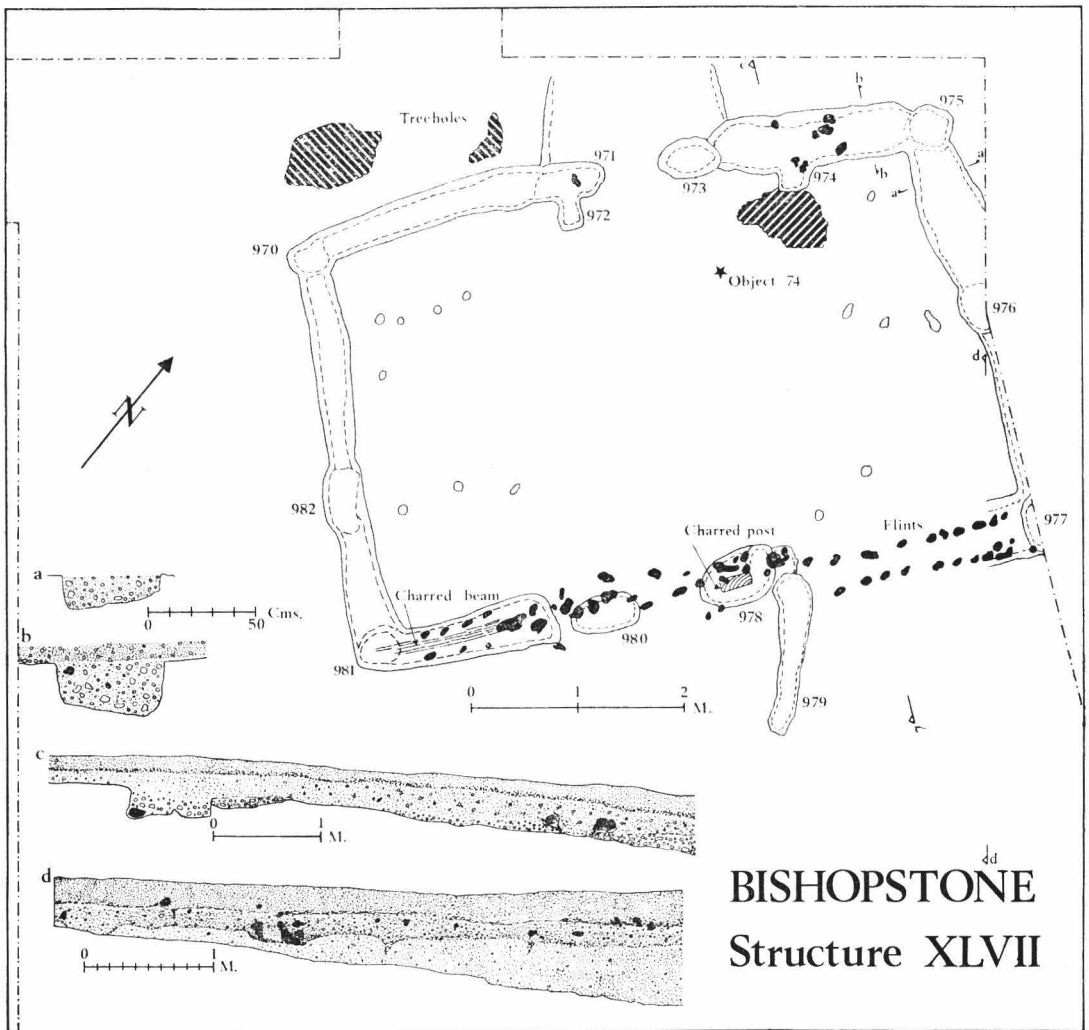


FIG. 98. Structure xlvii, plan

Dating this building presents certain problems, originally a Romano-British date was suggested since most of the finds were of that period.¹ In advancing this suggestion the writer also had in mind the precedent of rectangular wooden houses found in the Romano-British settlement at Park Brow.² Subsequently however many of the features exhibited by Structure XLVII have been encountered in Anglo-Saxon buildings. This makes it desirable to review in rather more detail all the finds which have a bearing on the building's date. The only positively associated finds were a sherd of Romano-British East Sussex Ware from posthole 978, and the following sherds from the timber slot of the north wall:- two sherds of Iron Age fabric 2a, and individual sherds of East Sussex Ware and grey ware. A much greater quantity of pottery was found in the stone horizon of the Rendzina soil but because of the activities of earthworms this cannot be regarded as stratified. In the following table these sherds are divided into a series of chronological categories on the basis of their fabric:-

	Number of sherds	Weight in grams	% by weight
Neolithic	1	20	0.6
Bronze Age	13	170	5.2
Iron Age	133	925	28.3
Romano-British	183	1125	34.4
Late Romano-British	20	200	6.1
Anglo-Saxon fabric 1	19	310	9.5
Anglo-Saxon fabric 2	42	240	7.3
Anglo-Saxon fabric 3	23	280	8.5
Total	434	3270	99.9

Romano-British material predominated overall but the three Saxon fabrics, of which only No. 1 had been identified at the time of the original excavation, accounted for 25% of the sherds by weight. In addition small find 74 came from within the building, it was a bronze strip perforated by iron rivets and is rather similar to the fittings found in Structure XLVIII. Finds made in the neighbouring lynchet also have some bearing on the building's date. Lynchet formation seems to have ceased during the Romano-British period, and the field does not seem to have been cultivated in Saxon times since finds of that date were virtually confined to the base of the top soil. It was from this level that the foundations of the building appeared to have been cut. Though none of this evidence rules out a Romano-British date an Anglo-Saxon date now seems more likely, all the more so because of recent finds of similar buildings in Anglo-Saxon contexts. The similarity is particularly close with some of the Chalton buildings,³ and the technique of timbers set in wall trenches is also seen at Portchester,⁴ Thirlings,⁵ Cheddar⁶ and North Elmham.⁷ Generally, as at Chalton, the wall trenches appear to have held closely spaced vertical posts. No such indications were found in the Bishopstone building, except for the main structural postholes which had been cut below the base of the wall trench. On the contrary, the trenches seem to have held

¹ D. R. Wilson (ed.), 'Roman Britain in 1970,' *Britannia*, vol. 2 (1971), pp. 284-5. Followed by B. W. Cunliffe, *The Regni* (1973), Fig. 37.

² G. R. Wolseley et al., 'Prehistoric and Roman settlements on Park Brow,' *Archaeologia*, vol. 76 (1926-7), pp. 1-29.

³ P. Addyman et al., 'Anglo-Saxon houses at Chalton, Hants.,' *Medieval Archaeology*, vol. 16

(1972), pp. 13-31: and P. V. Addyman and D. Leigh, 1973, op. cit., particularly Structures AZ1 and A10.

⁴ B. W. Cunliffe, 1976, op. cit., pp. 58-9.

⁵ *Medieval Archaeology*, vol. 19 (1975), pp. 226-7 and vol. 18 (1974), pp. 182-3.

⁶ P. Rahtz, 1962-3, op. cit., pp. 53-66.

⁷ P. Wade-Martins, 1970, op. cit., pp. 25-78.

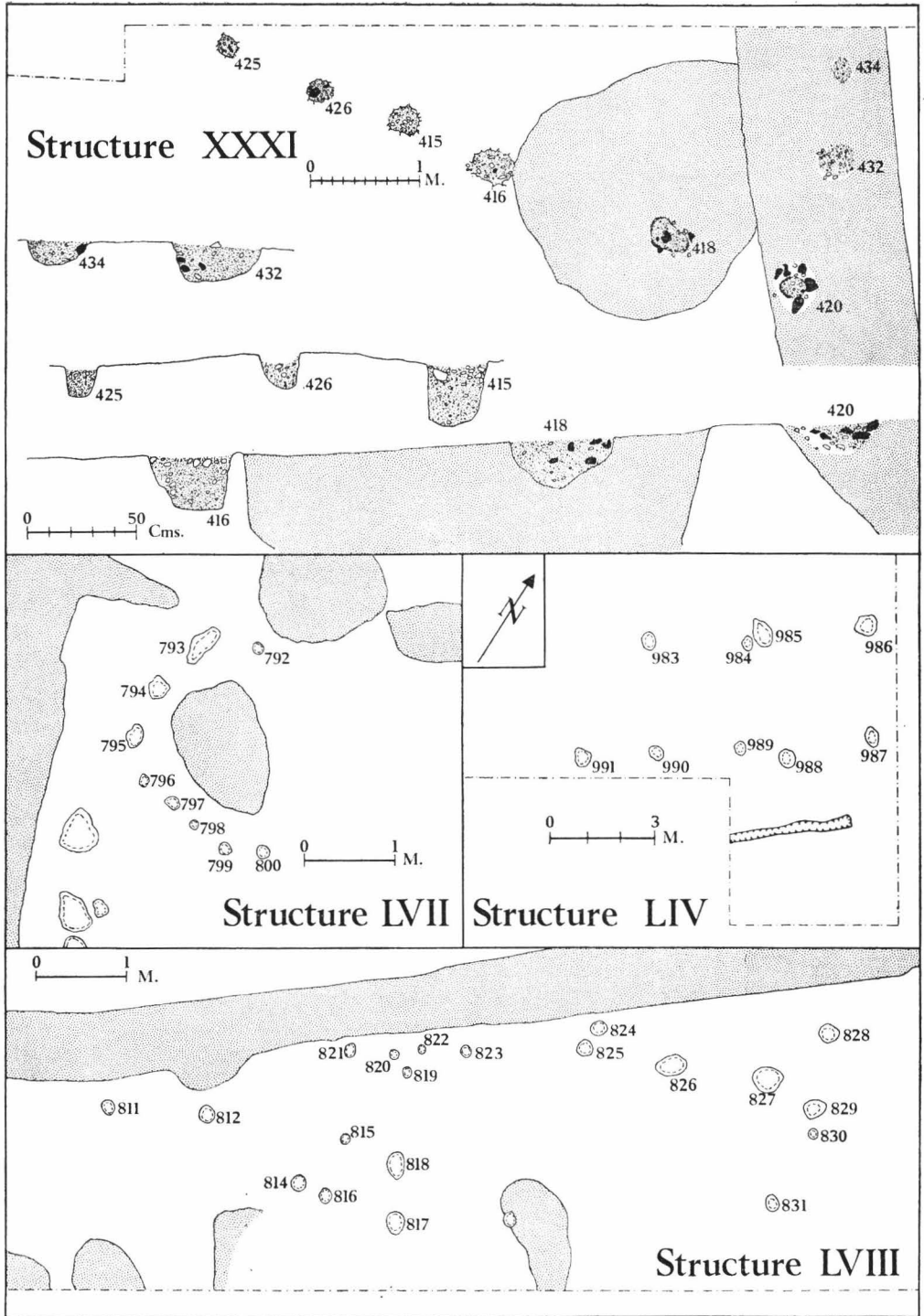


FIG. 99. Structures xxxi, liv, lvii and lviii

horizontal beams, though vertical posts might of course have been set into these. A qualification should however be added that because the charred beam was fragmentary we cannot be certain it was *in situ*.

EIGHT-POST STRUCTURE

Structure LIV (Fig. 99)

A group of eight postholes excavated by Mr. Thomson, assisted by the writer, in 1968. They were in two rough lines which were parallel and formed a rectangle 5.7m. by 2.7m. A ninth post (No. 991), roughly in line with the southern row may also have been associated, as may a gully 1.8m. south of the same row and some 30cm. wide by 10cm. deep. The building was assigned to the Anglo-Saxon period on the basis of sherds from the postholes; three from 988, four from 987 and one from 991. At the time these sherds were regarded as being of similar fabric and form to those found in the cemetery. Circumstances have prevented the writer from re-examining this material and the dating remains unconfirmed. In some respects a Saxon date now seems unlikely, the postholes were a good deal larger than the Saxon average, and the building type is unknown from accredited Saxon contexts on the site. It might therefore represent two adjoining Iron Age four-post buildings. A Saxon date should not however be ruled out for the plan is strikingly similar to that of granaries excavated at Flögen in Lower Saxony.¹

OTHER STRUCTURES AND POSTHOLES (Fig. 87)

A number of short rows of postholes were found which did not seem to form part of rectangular buildings. The postholes were uniformly small, about 20cm. in diameter, and seldom more than 15cm. deep, less substantial and also more widely spaced than the postholes which comprised buildings.

Structure XLV. Three postholes spaced at 1m. centres, running from beside the north entrance of Structure XXXVII to the north outside the excavation. Mollusc sample 11 came from one of these postholes, No. 571.

Structure XLVI. Four postholes in a line with another double posthole forming a right angle with sides 4.4m. and 1m. long.

Structure IXL. Four postholes spaced at between 3m. and 4m. centres.

Structure XLII. Three postholes spaced at 60cm. centres in a line parallel to the west wall of Structure XLIII and 3.6m. to the west.

Attention should also be drawn to two groups of postholes which were in line with the walls of nearby buildings, and might be interpreted as fence lines leading from the corners of these buildings. There was a group of four west of Structure XXXIII (Fig. 97), and two west of Structure X (Fig. 93). The identification of these lines as fences is certainly debatable, none was very long and they did not form coherent enclosures. Quite different in fact from the comparatively massively constructed fences of closely spaced posts found at Chalton.²

Two structures comprised a pair of very similar holes at some distance from any similar examples:-

Structure LXIV. Both holes were 24cm. in diameter and 20cm. deep. They were 1m. apart and one of them, 374, contained a sherd of Saxon fabric 1.

Structure XVIII. Both holes were 20cm. in diameter, 24cm. deep and 1.10m. apart.

¹ W. H. Zimmermann, 1974, *op. cit.*, pp. 56-73.

² P. V. Addyman et al., 1972, *op. cit.*, p. 20.

Of the 370 to 400 postholes which are dated to the Saxon period, under 10% were without clear structural associations. Particular attention should be drawn to three of them found to the east of the Romano-British corn-drying oven. They were of similar size and one, 871, produced a Saxon sherd showing that buildings of this period spread right across to the eastern edge of the hilltop.

GENERAL DISCUSSION OF THE SAXON BUILDINGS

As a result of recent excavations the main types of building represented here are well known in Anglo-Saxon contexts and have been reviewed by Mr. Addyman.¹ The closest parallels are with buildings in the more extensively excavated settlement at Chalton, Hampshire.² This was on a virgin site, without the complexities consequent upon earlier occupation, and with rather less subsequent erosion than at Bishopstone. Having already noted the occurrence on other sites of the most distinctive of the Bishopstone types, sunken huts, boat-shaped and foundation-trench buildings, it remains to record a series of recurrent traits exhibited by the structures. Most had two entrances in the middle of the long sides flanked by a pair of large oval postholes. Similar pairs were found in the middle of the end walls of Structures XXXII and XXVIII, where they also probably represent entrances. Within the building, to one side of the entrance, there was usually a small post on which the door itself was hung. The walls very often consisted of double postholes and in certain instances, such as Structures XXXVII, XLIII and XXVIII, they were so regularly disposed that they must surely have been contemporary. Double postholes were found particularly on the side walls which were always built on very much more substantial foundations than those at the ends, as is apparent from Structures XXXVII and XXXV. The latter also shows a rather larger post in the centre of the end wall flanked by smaller posts, a feature which was also recorded in Structure A at Maxey.³ Another ubiquitous feature which must have structural implications is the weak corners; the longest Structures, I and XXXVII lacked preserved corner posts altogether, whilst in others they were present but small. In the case of Structure XXVIII this might have been compensated for by the existence of a support post just beside the corner. As regards internal features, little remained. Structures I (second phase), XI and XXXV had postholes within them which might have been partitions, but in no case was there absolutely convincing evidence of division into rooms like that found at Chalton.⁴

In describing the individual buildings attention has already been drawn to the similar spacing between posts on opposite walls. Opposite postholes were also often of the same size, shape and depth. In fact the buildings show an interesting degree of bilateral symmetry about two axes drawn through the mid-points of opposite walls, a feature particularly apparent in Structure XXVIII. One possible interpretation of paired posts on the side walls is that they were coupled across the building. A method of laying out these buildings, which is also represented at Chalton, was in the form of two squares on either side of a line bisecting the two doorways. This was suggested by the second phase of Structure I and Structures III, XLIII and XXVIII which, as Fig. 100 shows, were almost exactly twice as long as they were broad.

¹ P. V. Addyman, 'The Anglo-Saxon house: a new review,' in P. Clemons (ed.), *Anglo-Saxon England*, vol. 1 (1972), pp. 273-307.

² P. V. Addyman et al., 1972, op. cit., pp. 13-31; and P. V. Addyman and D. Leigh, 1973, op. cit., pp. 1-25.

³ P. V. Addyman, 'A dark-age settlement at Maxey, Northants,' *Medieval Archaeology*, vol. 8 (1964), pp. 20-73.

⁴ P. V. Addyman and D. Leigh, 1973, op. cit., pp. 1-19.

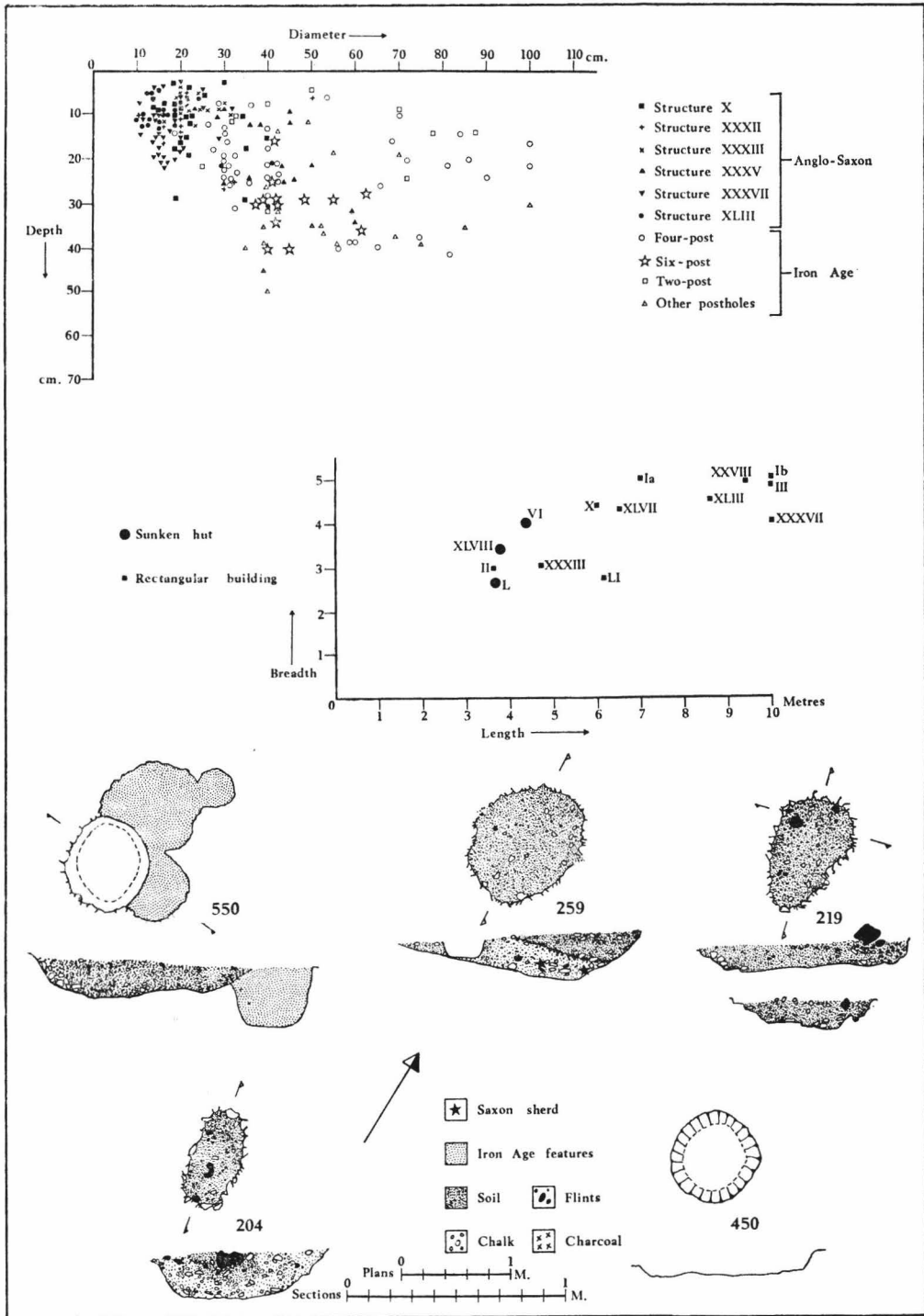


FIG. 100. Graphs comparing the size of Anglo-Saxon and Iron Age postholes, and the size of Saxon buildings. Plans and sections of Saxon pits

Classifying these buildings is a rather subjective exercise which must take account of a number of variables, chief among which are building size, method of construction and associated artifacts. Fig. 100 represents an attempt to plot the first of these variables, size. This shows a clear grouping of six large rectangular structures between 8.5m. and 10m. long. Lying somewhat away from these and only 7m. long, is the first phase of Structure I, which has however been classed as a large building on the strength of its massive side posts which may have carried a second storey. Then there are the medium sized, moderately stoutly built, rectangular Structures, X, XLVII and LI, some 6m. to 6.5m. long. Finally comes a cluster of small buildings with two components, one the three sunken huts, another the small and lightly built rectangular Structures II and XXXIII. The ten medium and large rectangular buildings may all be regarded as potentially suitable foci for domestic occupation. That Structures XXXV and I fulfilled that function has already been suggested on the, admittedly slender, basis of refuse in their postholes. Some of the large buildings may equally have been barns. The smaller buildings are likely to have been ancillary structures for craft and agricultural purposes. Finds made in sunken huts, both here and on other sites, suggest that one of their principal functions was as weaving sheds.

THE PITS

PIT 550 (Fig. 100). A small bowl-shaped feature 80cm. in diameter and 17cm. deep, 1 metre outside the southern entrance of Structure XXXVII, overlying a group of Iron Age postholes. The fill was largely carbon and soil with a small number of pieces of chalk. That the pit itself had been a hearth was shown by burning on the floor and sides. Flotation of the contents produced quantities of wood charcoal, identified as hornbeam and hawthorn, and seeds of three weeds of cultivation. It also contained mussel shells and two sherds of Anglo-Saxon fabric 1.

PIT 259 (Fig. 100). An oval pit 1.15m. by 85cm. and 22cm. deep. The fill was small chalk rubble, soil and flints with a large number of mussel shells. Obviously it had been a hearth for the floor showed signs of burning, and on it were pieces of oak charcoal. Dating rests on fifty-four sherds of Saxon fabric 1.

PIT 219 (Fig. 100). A pear-shaped pit 1.1m. by 65cm. and 11cm. deep, filled with soil, flints, mussel shells, fragments of charcoal and four sherds of Saxon fabric 1.

PIT 204 (Fig. 100). An oval pit 80cm. by 43cm. and 20cm. deep. After it had been made it was allowed to weather for a period, then used as a hearth. It contained charcoal, burnt chalk and flints, several mussel shells, two fragments of fired clay and a sherd of Romano-British East Sussex Ware. The suggestion that it was of Anglo-Saxon date rests on the absence of any other Romano-British features in this part of the site, and on its similarity to the other pits.

PIT 450 (Fig. 100). A small bowl-shaped feature 80cm. in diameter, 13cm. deep, almost identical to 550. Excavated by Mr. Thomson in 1968, the finds have not been re-examined by the writer. It contained a large number of mussel shells and pottery sherds which, at the time, were regarded as similar to those found in Structure VI. Evidently it was a hearth for the edges were burnt and the fill included charcoal and fire cracked flints.

OVEN 627 (Fig. 94). A circular pit 1.2m. in diameter and 20cm. deep cut into the edge of the negative lynchet beside the north west corner of Structure XXVIII. The pit had a lining of fired clay which had originally formed a dome. To the south it opened out on to the negative lynchet from which it had presumably been stoked. It was excavated by Mr. Thomson in 1969 and the finds have not been re-examined by the writer. They included lumps of what was described as 'clinker' and a piece of sandstone. Numerous round pebbles in the fill had been heavily burnt. Dating to the Saxon period rests principally on the fact that it appeared to postdate the 'Celtic' field. Sections of the oven wall were *in situ* and samples were taken for thermoremanent magnetism tests by staff of the Research Laboratory for Archaeology and the History of Art at Oxford. At present this analysis does not facilitate dating of the oven, but was intended initially to help compile a thermoremanent magnetism curve for the Migration period.

THE ANGLO-SAXON POTTERY

The main groups of Anglo-Saxon pottery came from the three sunken huts. Of these the material from huts L and VI was excavated by Mr. Thomson and has not been examined by the writer. This account is therefore based primarily on the group from Structure XLVIII. Fortunately this is supplemented by a small number of sherds from pits and postholes. On the basis of this stratified material three types of Anglo-Saxon pottery fabric have been identified. Once these had been recognised it became apparent that sherds of these types occurred in Romano-British features:- 25 from the final sediments of the enclosure ditch, and 116 from the fills of fourth century features. The majority of Anglo-Saxon pottery, 72%, was however unstratified from the stone horizon of the Rendzina soil in the pasture field and from the plough soil. All vessels in each of the fabric types appeared to have been handmade without use of the wheel.

Fabric 1. A relatively hard sandy ware, chiefly distinguished by a filler of quartz sand which gives a slight sparkle to the surface when viewed in the correct light. Certain of the quartz grains were quite large, about 1.5mm. in diameter, thus of the coarse sand grade; most were however of the medium and fine sand grades. The grains had a glossy, polished surface with no evidence of iron staining. Despite their polished appearance few grains were round; instead they were generally sub-angular with smoothed corners. The sherds also contained a small number of pieces of flint, chiefly of the coarse sand grade. These were also somewhat angular in shape, frequently patinated white or stained with iron oxide. A few pieces were obviously calcined though this might have resulted from firing. In addition to these main inclusions were a small number of grains of opaque iron oxide and a few impressions of vegetable matter including cereal grains. This generalised description of the fabric is based on visual examination of the surfaces aided by a hand lens. More detailed information was provided by a thin section examination of three sherds undertaken by C. R. Cartwright and A. J. Woods who write as follows:-

Body sherd from Structure XLVIII. Numerous sub-angular to rounded single quartz grains, exhibiting extremely little variation in size, were regularly scattered throughout the optically anisotropic, very dense matrix. There appeared to be only one angular flint fragment included. It is interesting that the sand in this sherd consisted only of quartz without any feldspars, micas, etc.

Two sherds from the top soil. The main constituents of the sherd body were small to medium, mostly rounded, single quartz grains thinly scattered throughout the anisotropic clay matrix. There were also small, very rounded, goethite grains and some sub-angular fragments of flint. It was noticeable how precisely the thin sections of these two sherds compared.

None of the mineral inclusions suggest a specific source for the potting clay; they do however give some indication of the type of deposit exploited. Polished sub-angular grains of both quartz and flint suggest perhaps alluvially redeposited clay. This is unlikely to have come from the valleys running through the Downs, where a larger proportion of flint might be expected. Nor is the sand filler likely to have been derived from the beach since modern comparative samples from that source contain numerous pieces of shell. An absence of shell and any evidence that it had been combusted during firing would also seem to preclude exploitation of Eocene clays. Taking these various factors into consideration the *nearest* suitable clay deposits are likely to be outcrops of Gault or Weald Clay north of the Downs. Vessels in this fabric generally had a black reduced surface, particularly on the exterior; occasional sherds were grey or orange/brown. Not infrequently the outer surface was burnished, and in a small number of instances ornamented with stamps.

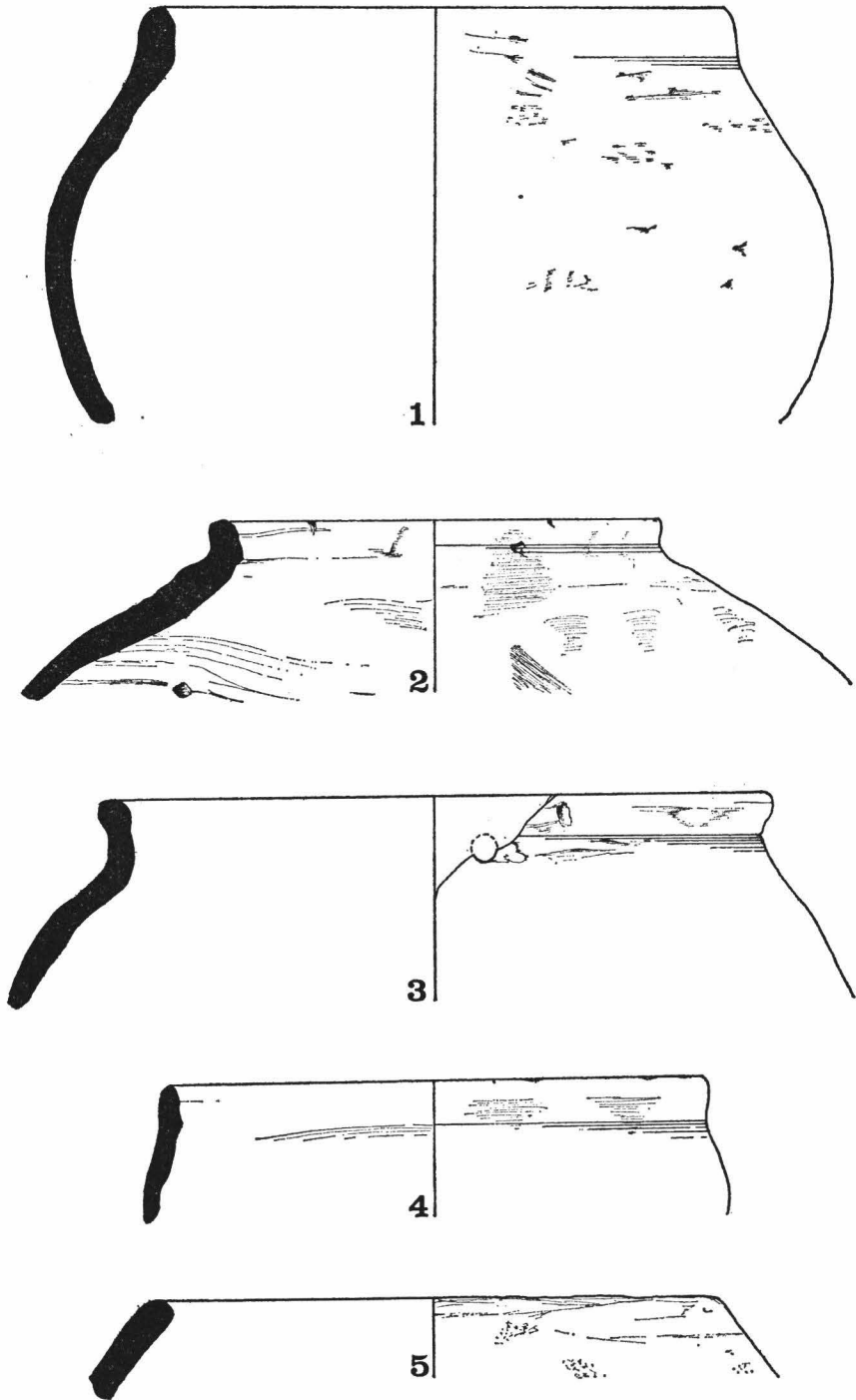


FIG. 101. Anglo-Saxon pottery; vessels 1-5. Scale $\frac{1}{2}$

Fabric 2. This had the appearance of being less well fired and finished than Fabric 1. Its most obvious distinguishing feature was the predominant filler of sub-angular pieces of flint belonging to the coarse and medium sand grades. These were slightly polished with multi-coloured white, red, pink or grey surface patination. Some sherds exhibited impressions of vegetable material and others had a slightly corky appearance as if inclusions of organic material or carbonate had been lost during firing. The most significant feature is the presence of multi-coloured flint grit which compares closely with beach sand from the locality. If this were the source of the filler then the vesicles might represent pieces of shell lost during firing. Most vessels in the fabric had brown or black surfaces with occasional oxidized areas; only rarely was the surface burnished. As a generalisation the vessel walls were thinner than those of the other two fabric types.

Fabric 3. The filler was similar to that in Fabric 2 but the grains were larger and accounted for a greater proportion of the sherd body. The multi-coloured flint was mostly of the coarse sand grade and was accompanied by small plates of calcareous material, probably comminuted shell. In other sherds the loss of shell or plant remains during firing has resulted in a rather corky appearance. As in the case of Fabric 2, the sand filler is likely to have been collected on the seashore. The vessels which were made in the fabric were generally rather thick walled, and had a yellow/orange surface colour, speckled with flint grits, and sometimes ornamented by stamped decoration.

It will be obvious that, in the absence of thin section studies of Fabrics 2 and 3, the classification advanced is rather coarse and subjective. The possible sources of clay and filler also need further examination. We can however gain some idea of the relative importance of the fabric types from the following table.

Fabric	Structure XLVIII	Pit 259	Pit 219	A/S Post-holes	Early R/B	Late R/B	Unstrat.	Total	% by weight
1	311	54	4	42	24	110	1225	1770	84.5
2	16	—	—	9	1	4	201	231	11.5
3	1	—	—	—	—	1	33	35	4
Total	328	54	4	51	25	115	1459	2036	100

DESCRIPTION OF THE ILLUSTRATED SHERDS

Discussion of each sherd is prefixed by its fabric classification. Where no reference is made to the colour of a sherd or its inclusions they are typical of those described for the fabric type above.

Structure XLVIII (vessels 1-17)

1. Fabric 1. A jar with globular body and simple upright rim. The exterior was reduced black and the interior grey. In the fabric there were occasional traces of burnt out vegetation and grains of iron oxide. Presumably used as a cooking pot since the outer surface has sooting. Layer 2.
2. Fabric 1. A wide bellied jar with narrow neck and slightly everted rim. The fabric included a polished piece of limonite. On the interior of the vessel were marks suggesting that it had been smoothed round with straw preparatory to firing. Layer 2.
3. Fabric 1. The rim of a jar with a globular body and upright neck topped by a wide mouth and slightly thickened rim. The neck was perforated by a circular hole of diameter 6mm., across which the vessel had broken. This hole, like that on a number of vessels (see 35), was presumably designed to take a handle of organic material. Small specks of iron oxide were visible in the broken surfaces. Layer 2.
4. Fabric 1. A simple vertical rim from a fairly straight sided vessel. Layer 2.
5. Fabric 1. Plain inturred rim below which the vessel broadens out considerably. Layer 2.
6. Fabric 1. Simple rim below which the vessel broadens out to a wide belly. Layer 2.
7. Fabric 1. Thick everted rim, burnished inside and out. Layer 1.
8. Fabric 1. Thin slightly everted rim sherd from a small jar. Well made with a burnished outer surface, both surfaces were black but the core was pinkish. Layer 2.

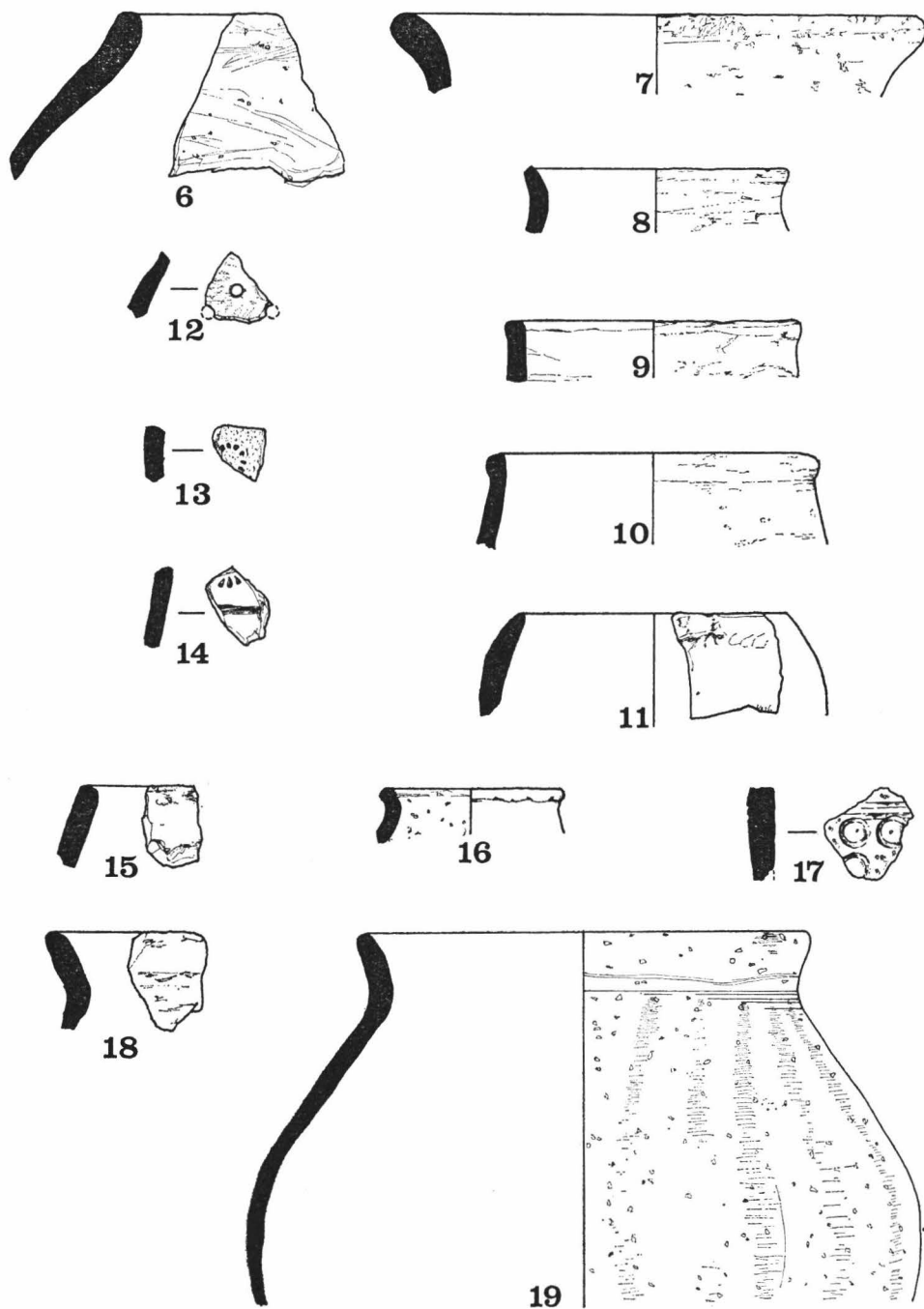


FIG. 102. Anglo-Saxon pottery; vessels 6-19. Scale $\frac{1}{2}$

9. Fabric 1. Vertical rim with very slight external beading and a flat top. Layer 2.
10. Fabric 1. Simple vertical rim below which the vessel widens out. Layer 2.
11. Fabric 1. Thin inturned rim from a small globular cup, smoothed interior, and light brown surfaces. Layer 1.
12. Fabric 1. Body sherd perforated by three circular holes, two of them only partly preserved, the other 4mm. in diameter. Small colander-type vessels with numerous perforations are known from early Saxon contexts at Mucking,¹ West Stow,² and Sutton Courtenay.³ Layer 1.
13. Fabric 1. Body sherd with a light brown outer surface and grey inner surface. The outer surface was somewhat eroded but two-thirds of a rosette stamp were preserved. When complete this was in the form of ten small roughly rectangular depressions arranged in a circle. Layer 2.
14. Fabric 1. Thin body sherd burnished inside and out. Ornamented with a tooled line, or more correctly by two lines, the ends of which overlapped. There was also about a third of a rosette stamp which comprised triangular segments, three of which were preserved. Layer 3.
15. Fabric 2. Inturned rim from a small bowl, all surfaces were black and burnished and there were traces of fired out plant inclusions. Layer 4.
16. Fabric 2. Everted rim from a very small jar. Black outer surface, orange/brown inner surface. Layer 2.
17. Fabric 3. Fairly thick body sherd with coarse flint grits. Ornamented by two parallel lines and three circular stamps. Similar stamps occurred on three other sherds of the same fabric. Circular stamps are known from pagan Saxon contexts, for example Highdown cemetery.⁴ Others with numerous circular stamps inside tooled panels are known from later Saxon contexts at Portchester Castle.⁵ Layer 2.

Feature 458

18. Fabric 1. An everted rim, the body of which included a large grain of ferruginous fine-grained sandstone. The feature in which it was found was a posthole of Structure XXXV.

Feature 466

19. Fabric 2. Eight joining sherds from a jar with wide girth, rather narrow neck and everted rim. The vessel walls were thin and exhibited air vesicles and traces of fired out vegetable materials. The jar was ornamented by shallow fluting running obliquely down the vessel from the base of the neck. This interesting effect was produced by running the fingers down the outside of the vessel before firing, resulting in slight ridges on the inside. Feature 466 was a shallow feature cut into the Iron Age ditch silts inside Structure XXXV.

From Romano-British Features (vessels 20-26)

20. Fabric 1. Plain inturned rim from a sizeable storage jar, eroded surfaces. Found in the corn-drying oven, Layer 4.
21. Fabric 1. Everted rim from a small jar. The rim has been thickened by drawing the vessel up and folding it back over the body as is shown by an unconformity in the section. The outer surface was burnished. Found in the corn-drying oven, Layer 1.
22. Fabric 1. Everted and slightly thickened rim with slight grass-marking on the exterior. From the corn-drying oven. Layer 2.
23. Fabric 1. Eroded everted rim sherd. From the corn-drying oven. Layer 4.
24. Fabric 1. A body sherd with what appears to be the base of an applied circular handle or, rather less likely, a boss. From Pit 780, layer 1.
25. Fabric 1. Rim sherd which had broken just where it was curving up to form an arched extension of the rim, which would then have been perforated for attachment of an organic handle in the fashion of vessels 29, 34 and 35. Similar handles are known from Mucking,⁶ West Stow,⁷ Sutton Courtenay⁸ and a number of later Saxon sites.⁹ From Pit 780, Layer 1.
26. Fabric 3. Body sherd with large multi-coloured flint grits in a coarse fabric; yellow/brown surface. Ornamented by parts of three circular stamps like those used on vessels 17 and 48. From the corn-drying oven. Layer 4.

From the lynchet (vessels 27-29)

27. Fabric 1. Part of a very small cup with a rounded base, everted rim and burnished outer surface. Miniature vessels of the same general date and uncertain function are also known from Chalton, Hampshire and Mucking, Essex.¹⁰ Small find 75 from the lynchet.
28. Fabric 2. Body sherd with a perforation. From top soil above Structure XLVII.
29. Fabric 3. Part of a curved vertical extension of a rim with a perforation for the handle; see also vessel 25. Small find 63 from the lynchet.

¹ M. U. and W. T. Jones, 'The crop-mark sites at Mucking, Essex, England,' in R. L. S. Bruce-Mitford (ed.), *Recent archaeological excavations in Europe* (1975), Fig. 54.6.

² S. E. West, 'Pagan Saxon pottery from West Stow, Suffolk,' *Berichten Rijksdienst Oudheidkundig Bodemonderzoek*, vol. 19 (1969b), pp. 175-181.

³ E. T. Leeds, 'A Saxon village at Sutton Courtenay, Berkshire (second report),' *Archaeologia*, vol. 76 (1927), pp. 72-73.

⁴ A. E. Wilson, *A guide to the Anglo-Saxon collection*, Worthling Museum Publication, No. 1 (2nd. ed., 1959), Plate 13.

⁵ B. W. Cunliffe, 1976, *op. cit.*, pp. 128-194.

⁶ M. U. and W. T. Jones, 1975, *op. cit.*, p. 159.

⁷ S. E. West, 1969b, *op. cit.*, pp. 175-181.

⁸ E. T. Leeds, 'A Saxon village at Sutton Courtenay, Berkshire,' *Archaeologia*, vol. 92 (1947), pp. 79-93, especially p. 90 and p. 91.

⁹ G. C. Dunning et al., 'Anglo-Saxon pottery: a symposium,' *Medieval Archaeology*, vol. 3 (1959), pp. 16-17.

¹⁰ M. U. Jones et al., 'Crop-mark sites at Mucking, Essex,' *Antiquaries Journal*, vol. 48 (1968), Part II, pp. 210-230, Fig. 5.21.

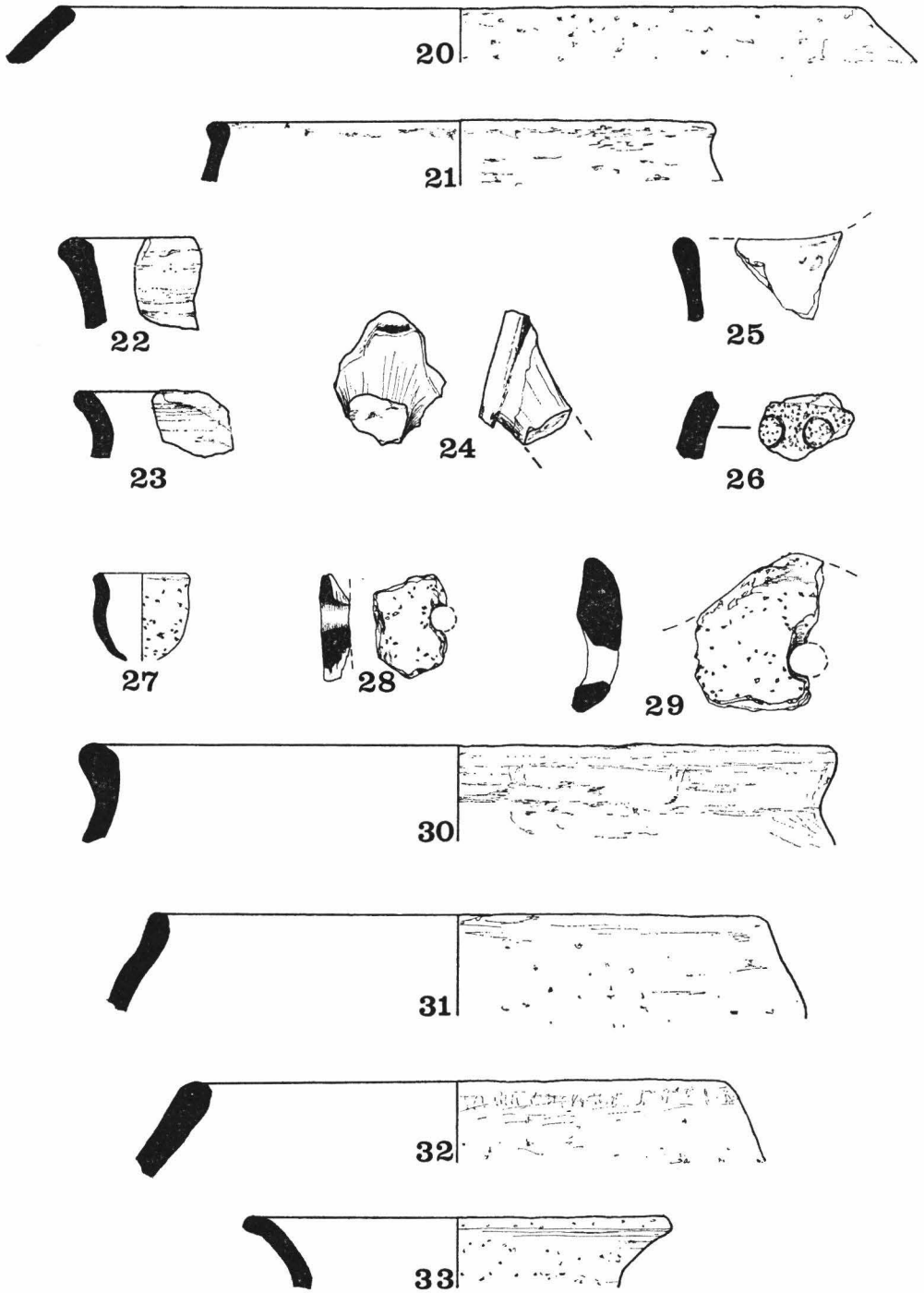


Fig. 103. Anglo-Saxon pottery; vessels 20-33. Scale $\frac{1}{2}$

Unstratified (vessels 30-49)

30. Fabric 1. Thickened and everted rim from a wide mouthed jar. Found in the top soil above Structure XXVIII.
31. Fabric 1. Plain rim with a slight neck below which the vessel widened out. The section shows that the sherd comprises an outer and an inner layer of clay pressed together. From top soil in the south east corner of the excavations.
32. Fabric 1. Simple inturned rim with burnished outer surface on which there was sooting. Two, unidentified, impressions of cereal grains were visible in the section. From top soil in the south east corner of the excavations.
33. Fabric 1. Sherd from an everted funnel-shaped rim with burnished surfaces. From top soil in south east corner of excavations.
34. Fabric 1. Thickened rim sherd broken where it was curving up to form a raised handle, see vessel 25. From top soil in the north-east part of the excavations.
35. Fabric 1. A curved vertical extension from a rim with part of a perforation through which an organic handle would have passed, see vessel 25. From the south east corner of the excavations.
36. Fabric 1. A thin body sherd with a very neatly made horizontally perforated lug; similar examples are known from pagan Saxon contexts at Mucking, Essex¹ and a number of cemeteries.² Top soil near the corn-drying oven.
37. Fabric 1. Thick body sherd with a perforation, a broken surface showed the impression of an unidentified cereal grain. Top soil overlying the west ditch of the Romano-British enclosure.
38. Fabric 1. Body sherd with two perforations. Found in the plough soil above Structure I.
39. Fabric 1. Four joining base sherds, fairly typical of a small number found. Another type, which is not illustrated, consisted of the vessel wall and base joining at a wide angle suggesting they were from vessels with wide girths for the size of base. From top soil within the Romano-British enclosure.
40. Fabric 1. A body sherd decorated with tooled lines. From what we have of the design it seems to have consisted of a line round the vessel and below this two diverging curved lines. It is similar to grooved sherds from Portchester Castle which were dated to the fifth century.³ From top soil near the corn-drying oven.
41. Fabric 1. Body sherd ornamented by a ridge flanked by two shallow grooves which probably ran round the base of the neck. From the top soil near Structure LVIII.
42. Fabric 1. Body sherd ornamented by three impressions of an unusual stamp. This consisted of two quarter circles at either end and three bars between them. The same stamp was used on sherd 43 which may be from the same vessel. Traces remained of burnish on the exterior surfaces, and in the section was the partial impression of a cereal grain (unidentified). From top soil above Structure XXVIII.
43. Fabric 1. Body sherd with two shallow tooled lines between which was an impression of the same stamp used on sherd 42. From top soil above Structure XXVIII.
44. Fabric 1. Body sherd with a tooled line and parts of three rosette stamps. Two of them shown below the line were from the same stamp which consisted of eight wedge-shaped impressions in a circle. Only one complete segment of the other stamp was preserved. The body contained a rounded flint grit of diameter 2mm. From top soil above Structure XXVIII.
45. Body sherd ornamented by about one third of a rosette-shaped stamp, the individual segments of which were pear-shaped. From the top soil above Structure XXVIII.
46. Fabric 2. Body sherd ornamented by small impressed pits made perhaps with a bone or stick. The impressions appear to have formed a rectilinear pattern. From top soil near Structure XXXVII.
47. Fabric 2. Body sherd from the neck of a vessel with two small impressions. From top soil in the northern part of the Romano-British enclosure.
48. Fabric 3. Body sherd with a coarse flint filler. Ornamented with four impressions of a circular stamp, see also sherd 17. From top soil in the northern part of the Romano-British enclosure.
49. Fabric 3. Everted rim sherd with coarse flint filler. From top soil in the northern part of the Romano-British enclosure.

GENERAL DISCUSSION OF THE SAXON POTTERY

This small and partly unstratified collection contains little which is closely datable. One notable feature however is the absence of distinctively early forms such as the faceted carinated bowls, sometimes with pedestal feet, which characterise early fifth century occupation at Mucking, Essex,⁴ and West Stow, Suffolk⁵ and occur more locally in the cemeteries at Highdown and Alfriston. The only possible early feature is a grooved design on sherd 40, somewhat similar to ornament on fifth century vessels at Mucking, West Stow and Portchester Castle, Hampshire.⁶ Decoration, such as stamps, incised lines, fluting and impressions, is confined to 14 sherds,

¹ M. U. and W. T. Jones, 1975, op. cit., p. 159 and Fig. 54.13.

² J. N. L. Myres, *Anglo-Saxon pottery and the settlement of England* (1969), Fig. 12.

³ B. W. Cunliffe, 1976, op. cit., vessels 175-181.

⁴ M. U. Jones et al., 1968, op. cit., pp. 222-228.

⁵ S. E. West, 'The Anglo-Saxon village of West Stow: an interim report of the excavations,' *Medieval Archaeology*, vol. 13 (1969), pp. 1-20.

⁶ B. W. Cunliffe, 1976, op. cit., p. 183.

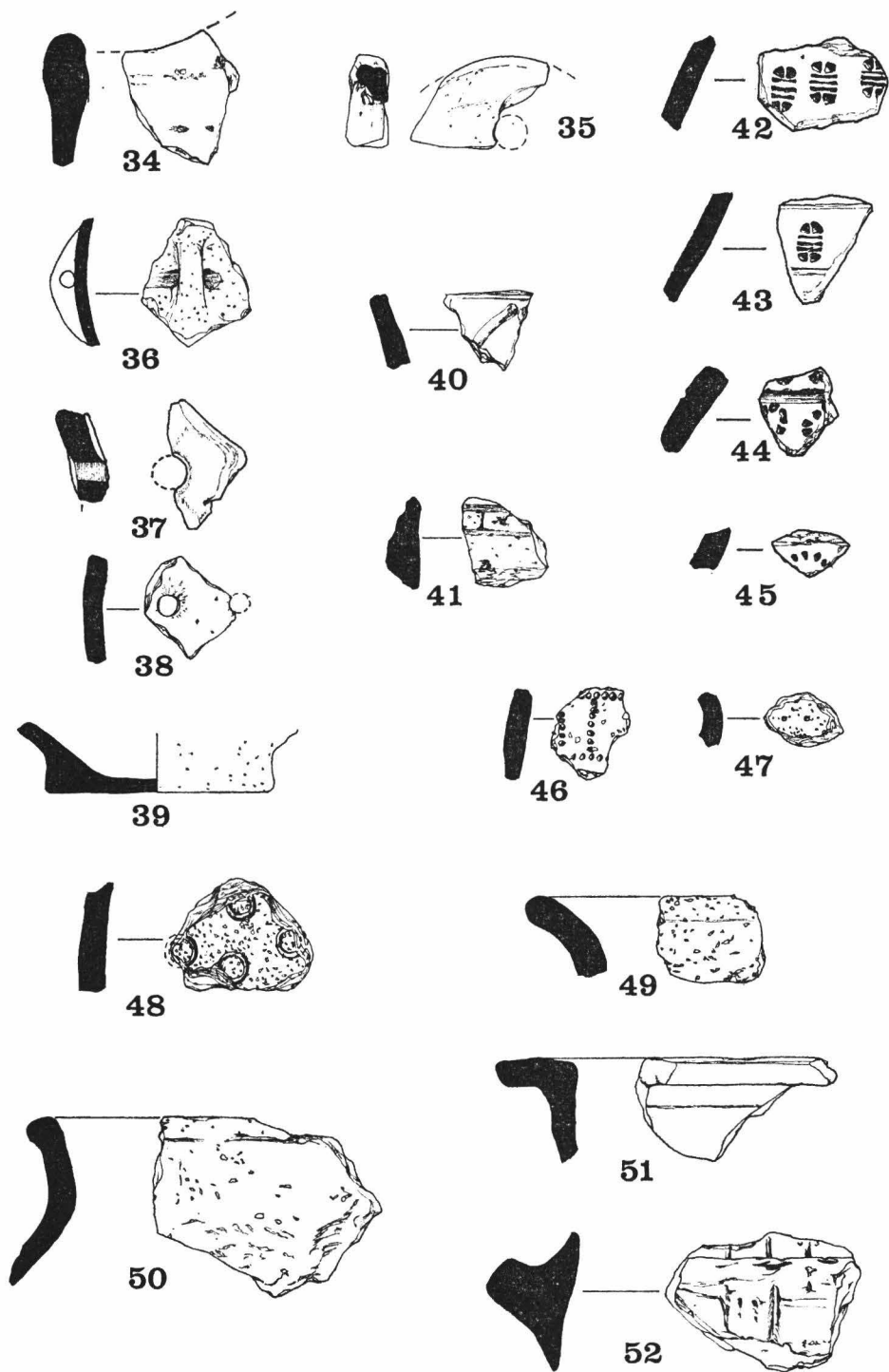


FIG. 104. Anglo-Saxon pottery; vessels 34-49; and Medieval pottery, vessels 50-52. Scale $\frac{1}{2}$

representing 0.7% of the total. Four of the sherds with circular stamps (one not illustrated) might be of either early or late Saxon date as the parallels already noted show. Examples of the rosette and barred stamps, Nos. 42-5, have been examined by Dr. J. N. L. Myres, who considers them to be consistent with a date in the sixth century.¹ Other features of the pottery, the lugs on a raised part of the rim, a horizontally perforated lug, perforations of the neck and vessels with multiple perforations, occur as we have noted on a variety of pagan sites and are all found at Mucking.²

Since the form and decoration of these vessels permits no closer dating it is fortunate that recent work is beginning to provide some indication of the associations of the various fabric types on other sites. We have noted already the presence of fabric 1 sherds in grave fills of the Bishopstone cemetery, and the specific instance of two everted rims similar to No. 8 in grave 108 may be cited. A comparable situation was encountered at Alfriston where sherds of fabrics 1 and 2 were found in graves,³ and at South Malling where a fabric 2 sherd accompanied an inhumation.⁴ A large collection of fabrics 1 and 2 also comes from the Iron Age hillfort at Highdown⁵ where it probably represents domestic refuse from a settlement associated with the well-known cemetery. Pottery of these fabrics was not however exclusively domestic, for a cinerary urn found during Dr. A. E. Wilson's excavations at Highdown in 1939 is a good example of fabric 2.⁶ As yet no examples of fabric 3 have been identified from any other site, but the examination, even of material from the sites mentioned, has been far from exhaustive. It has however shown that fabrics 1 and 2 were in use between Alfriston in the east and Highdown in the west during the pagan Saxon period. Grave finds and the association between settlements and datable cemeteries, as at Bishopstone, suggest the fabrics were in use from about the mid-fifth century through the sixth century. How the fabric types should be interpreted is unclear since it remains to be shown whether examples from different sites have exactly the same mineralogical inclusions. It may however be significant that the fabric types seem to exhibit different schemes of decoration, circular stamps being confined to fabric 3, in which 4 out of 35 sherds were stamped, whilst the remaining, more complicated, stamps were found only on fabric 1. Considering the small number of stratified groups it is not perhaps surprising that no indication was found of a chronological trend in the proportions of fabric types.

THE ANGLO-SAXON OBJECTS (Fig. 105)

As was the case with the pottery, only the finds from the present writer's excavations are discussed here; this does not include finds from Mr. Thomson's excavations such as those from sunken huts L and VI.

Clay Objects

53. A discoidal spindle whorl made from pottery fabric 1. Decorated with oblique finger nail impressions round the circumference. It had seen considerable use, many of the impressions were all but obliterated and the central perforation had acquired a polish. From Structure XLVIII, layer 3.
54. About one third of a spindle whorl of oval section with an hour-glass perforation. Made of pottery fabric 1. From Structure XLVIII, layer 4.
55. Part of a discoidal spindle whorl made in pottery fabric 1. A cereal grain impression (unidentified) was visible in the section. Top soil near Structure LXII.

Not illustrated. A piece of baked clay with part of a curved surface preserved, possibly from a loomweight. Top soil above Structure XXVIII.

¹ Personal communication dated 29.11.71.

² M. U. and W. T. Jones, 1975, *op. cit.*

³ A. F. Griffith and L. F. Salzman, 'An Anglo-Saxon cemetery at Alfriston, Sussex,' *S.A.C.*, vol. 56 (1914), p. 26; and *S.A.C.*, vol. 57 (1915), p. 199. Some of the sherds are in Barbican House Museum, Lewes.

⁴ N. E. S. Norris, 'Miscellaneous researches, 1949-56,' *S.A.C.*, vol. 94 (1956), pp. 10-12. The sherd, which is not published, is in Barbican House Museum, Lewes. ACC. No. 53.48.

⁵ In Worthing Museum.

⁶ A. E. Wilson, 'Report on the excavations on Highdown Hill, Sussex, August 1939,' *S.A.C.*, vol. 81 (1940), p. 187.

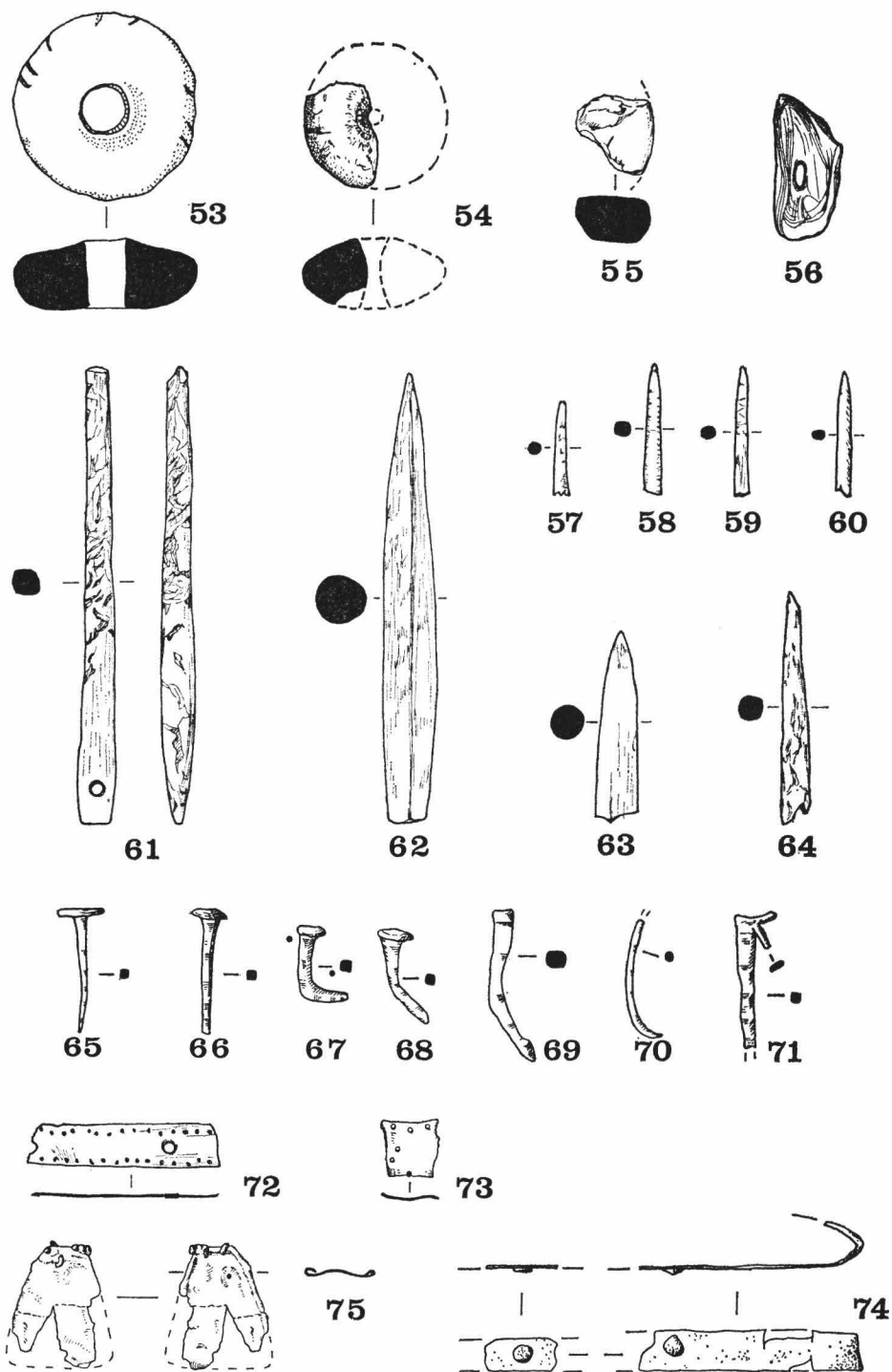


FIG. 105. Anglo-Saxon small finds 53-75. Scale $\frac{1}{2}$ except 57-64 and 73-75, $\frac{1}{1}$

Shell

56. A valve of a mussel (*Mytilus edulis*) perforated by an oval hole. The shape of this hole and its irregular edges indicate that it did not result from chemical secretions by a carnivorous mollusc and was probably intentionally made as an ornament. From Structure XLVIII, layer 2.

Bone Objects

- 57-60. Polished bone pins with one pointed end, 58 and 60 were roughly square in section and 57 and 59 round. They were all about 1.5mm. in diameter. Each of them was polished by use and on 58 there were a series of slight ridges at right angles to its axis. They are probably all broken teeth from bone combs. All were found in Structure XLVIII; 58 was in layer 4, 57 in layer 3 and 59 and 60 in layer 2.
61. Part of a large bone needle with the point broken off, total preserved length 6.6cm. The shaft was of circular section, 4mm. in diameter, but became flatter towards the end where it was perforated by a circular eye. The eye was 1.75mm. in diameter and drilled from both sides giving an hour-glass profile. The surface was polished, particularly round the head, though this was one of the few areas not etched by the subsequent activities of organisms. Large needles have a number of uses in weaving,¹ and an example similar to this was found in the later Saxon weaving hut at Old Erringham.² Structure XLVIII, layer 4.
62. A bone object of circular cross-section originally pointed at both ends but with one end broken. Total preserved length 6.6cm. and maximum diameter 8mm. These objects are called pin-beaters by Marta Hoffmann, who describes them as multi-purpose tools used in weaving.³ They are common finds on Anglo-Saxon sites, being known for example from rural settlements at Chalton⁴ and Sutton Courtenay⁵ and from the town of Chichester.⁶ From Structure XLVIII, layer 1.
63. Pointed bone object 2.8cm. long with circular cross-section of diameter 6.5mm. The surface was polished. It is clearly one end of a broken pin-beater (see 62). From Structure XLVIII, layer 2.
64. Pointed object of bone 3.4cm. long, round cross-section and maximum diameter 4mm. The surface was polished and the tip asymmetrically worn. At the opposite end was a V indentation, which probably represents a break but might be a cut notch subsequently damaged. If the former then the object is likely to be one end of a pin-beater (see 62). From Structure XLVIII, layer 2.

Not illustrated. A mid-shaft fragment of a metapodial, probably deer, somewhat distorted by burning. The surfaces which are not broken show extensive polish indicating it was used as a burnishing tool. From Structure XLVIII, layer 2.

Metal Objects

- 65-68. Four iron nails with flat, roughly circular, heads and square shanks. When the length and head diameter of these were plotted on the same graph as the Romano-British nails (Fig. 85), it could be seen that the Saxon examples clustered neatly together. They are therefore unlikely to represent casual strays from the Roman site. Perhaps they were part of a fitting or door in Structure XLVIII where they were all found.
69. A piece of iron 4.8cm. long with a rectangular section. There was a slight 'head' on one end and the object narrowed toward the other end terminating in a bulbous swelling. From Structure XLVIII, layer 4.
70. A curved piece of iron wire 3.9cm. long with a circular section. Pointed at one end but broken at the other, possibly part of the pin of a brooch. From Structure XLVIII, layer 4.
71. Fragment of an iron object, drawn from an X-ray plate. It appeared to consist of a rectangular shaft 3.9cm. long of square cross-section, with two short spikes of oval section projecting from one side. Structure XLVIII, layer 4.
72. A bronze strip 5.5cm. long, broken at both ends, and 1.2cm. wide. The thickness of the bronze was about 0.5mm. It was perforated by two holes, one was completely preserved and 3.5cm. in diameter with a slight lip caused by punching on both sides. This lip had been cleaned up on one side which was designed to be seen. On the same side, along both edges of the strip, were shallow punched dots of diameter 0.75mm., spaced at 3.5mm. centres. Running down the strip, and in some cases diagonally across it, were tiny scratch marks. Almost certainly it was part of a bronze bound wooden bucket, and compares closely with examples from Selmeston, Grave i.⁷ From Structure XLVIII, layer 2.
73. Fragment of a bronze strip, probably part of the same bucket as No. 72. This piece evidently comes from the end of a strip since two sides at right angles are bordered by punched dots. There is also a trace of iron staining suggesting that originally it lay near an iron rivet. From Structure XLVIII, layer 3.
74. Fragments of a bronze strip, 5.5mm. wide, which would have been attached by two iron rivets with heads of diameter 2.5mm. The strip was bent round at one end. Like objects 72 and 73 it was probably a fitting from a bronze bound wooden bucket or box. Found in the stone horizon of the earthworm sorted zone above Structure XLVII, its approximate find-spot being shown on the plan (Fig. 98).
75. A small roughly flat bronze plate, broken and badly corroded, measuring 17mm. by 12mm. The thin metal appears to have been folded back round the edges in order to strengthen them. Its original shape seems to have been trapezoidal with slightly curved sides. On the shortest of these it was perforated by two or three tiny nails of copper by which it must originally have been attached perhaps to a wooden object. It cannot be regarded as stratigraphically of Saxon date for it came from the lynchet, but it was in a layer containing predominantly Saxon finds. (Fig. 109).

¹ M. Hoffmann, *The warp-weighted loom*, Oslo (1964).

² Displayed in Worthing Museum and note in *Medieval Archaeology*, vol. 9 (1965), p. 175.

³ M. Hoffmann, 1964, op. cit.

⁴ P. V. Addyman et. al., 1972, op. cit., Fig. 18.12.

⁵ E. T. Leeds, 1927, op. cit., Fig. 2; and *Archaeologia*, vol. 73 (1923), plate 28.2.

⁶ A. E. Wilson, 'Chichester excavations 1947-50,' *S.A.C.*, vol. 90 (1952), p. 164, Fig. 34.1.

⁷ V. I. Evison, 'Sword rings and beads,' *Archaeologia*, vol. 105 (1976), Fig. 3c.

GENERAL DISCUSSION OF THE ANGLO-SAXON PERIOD

The history of this site during the late Roman and early Saxon period is one of the most intriguing aspects of its long history. It has already been shown that Romano-British occupation was at its height during the second half of the fourth century. How late into that century or beyond it may have continued will remain uncertain until the types of pottery in use among the local Romano-British population during the early fifth century have been identified. At present it does seem to be among the latest Romano-British sites in Sussex, but despite the fact that it was also the site of an early Saxon settlement there is no satisfactory evidence of continuity. In fact the settlement plan indicates the reverse, with the Saxon occupation sprawled out over the earlier settlement and its fields. Little respect was shown to many long lived features of the site, the supposed trackway was built over as was the Romano-British enclosure ditch. The only area in which the Anglo-Saxon builders showed any regard for the previous occupation was in siting three buildings on flat lynchets of the earlier field system. They cannot, however, have been unaware of the site's history of occupation for besides the fields, not long abandoned, there were pits and ditches only partially infilled. The upper fills of several late Romano-British features contained Saxon sherds as did the corn-drying oven from which the Saxons had probably robbed stone. Why the Saxons settled here we can only guess; there are obvious advantages in settling in a place which had long been occupied, for fields and communications must have been centred on it. Doubtless the hilltop also possessed certain tactical advantages in that it overlooked a natural harbour at the mouth of the Ouse.

Much information, both about the date of the site and the cultural origins of the settlers, will doubtless accrue from eventual publication of the cemetery excavations. Little doubt can remain that the cemetery was indeed used by the occupants of the settlement. Not only were the buildings close to the cemetery but sherds in fabric 1 occurred in both graves and sunken huts. In so far as we can date the cemetery and settlement independently, they have both produced material consistent with a date in the fifth and sixth centuries A.D. This association between settlement and cemetery is seen also at Mucking, Essex¹ and West Stow, Suffolk.² A preliminary report on the cemetery suggested that it may have started as early as c.400 A.D. Certainly it contained fifth century material, the Quoit Brooch Style buckle belonging to the first half of that century. Finds from the writer's settlement excavations include nothing to substantiate a date as early as the beginning of the fifth century. Distinctive types of early fifth century pottery known from both Mucking and West Stow are absent. It should however be admitted that, by comparison with these sites, the quantity of pottery was very small, and earlier material may well exist among the finds from Mr. Thomson's excavations. There is evidence that occupation continued into the sixth century but a long span, say beyond the end of that century, seems unlikely. A cemetery of 118 burials is relatively small if the whole population was interred therein,³ and the quantity of Saxon domestic refuse trivial by comparison with earlier periods. The buildings were of timbers averaging 20cm. in diameter and we may suppose that, being set in the ground, they would require replacement after thirty to fifty years. Only Structures I and XI were rebuilt, but the ground plans of XXXVII and XLIII overlapped, and there were indications that Structures X and III may not have been contemporary. The settlement had a fairly orderly layout with all but one of the buildings on an east-west alignment, their south west corners confronting the

¹ M. U. and W. T. Jones, 1975, *op. cit.*

² S. E. West, 1969, *op. cit.*

³ However two cemeteries have been found at Mucking and possibly also at West Stow.

prevailing wind. Comparison of Figures 2 and 86 will show that generally they were aligned along the contours, the exception being Structure XXXV which was located in a fairly flat part of the hillside. Orderly as the layout undoubtedly was, there were no clear indications that buildings were grouped in functional units. The substantial post-built curtilages found around groups of buildings at Chalton¹ were absent, as were ditched enclosures of the type encountered at Catholme, Staffs.²

Obviously only part of the Anglo-Saxon settlement has been uncovered, one hectare of a pottery scatter covering approximately three hectares. Thus the twenty-two buildings reported here may originally have been part of a settlement comprising over sixty structures. Various types of building were present from the larger, presumably domestic, structures to the smaller rectangular buildings and sunken huts which are likely to have been ancillary agricultural structures and workshops. Whether we call this nucleated settlement a village depends to a very large extent on our conception of the institutions and economy which made it cohesive. The presence of an associated cemetery, a population of men, women and children, and a range of agricultural and craft activities must surely be significant factors.

THE ENVIRONMENT AND ECONOMY

Three samples of the land Mollusca have been analysed, none of them from ideal contexts. Sample 11 came from posthole 571 of Structure XLV, and Sample 12 from the basal fill of Structure XLVIII. Both were indicative of open grassy conditions without any evidence of tree or shrub growth. Sample 13 was taken from the final fill of Structure XLVIII which was the base of a soil profile that had slumped into the feature as a consequence of settling soon after it was back filled. This revealed that, subsequent to the abandonment of the hut, the area was given over to closely grazed grassland. Information about the environment of the parish in later times is provided by topographical details in documentary sources which are reviewed below by Mr. Haselgrove. From certain of this information, such as that referring to the state of the Ouse valley, we may reasonably infer something of the conditions which prevailed during the early Saxon period.

Arable aspects of the economy were poorly attested though this may not necessarily be a reflection of their original importance. The excavated fields had become colonized by grass and were in some cases built over. Other fields, of which there are traces lower down the hill, may have been cultivated at this time. A possible example is a negative lynchet 25m. south of the excavated positive lynchet (Fig. 2). If fabric 1 sherds were made on the site they provide the only evidence as to the crops grown, three impressions of barley (*Hordeum vulgare*). Weeds of cultivation were better represented by a number of seeds from hearth 550, the species being Fat Hen (*Chenopodium album*), Common Orache (*Artriplex patula*) and Black Bindweed (*Bilderdykia convolvulus*). Large samples of the fill of Structure XLVIII have been retained for flotation and eventually it is hoped they may produce material to augment this picture. By comparison with the earlier settlements there was an interesting absence of storage pits, each of the six small pits had been hearths, or in one case an oven. Structure LIV may have been a granary but there was no certain evidence that it was of Saxon date.

¹ P. V. Addyman and D. Leigh, 1973, op. cit.

² *Medieval Archaeology*, vol. 20 (1976), pp. 169-170.

The pastoral side of the economy was rather better attested though the number of animal bones was small and the statistics therefore correspondingly open to question. Numerically, sheep, at 39%, seem to have been the most important species, but cattle at 25% would have provided a greater meat weight. Other domestic animals of lesser importance were pig, 17%; horse, 2%; domestic goose; domestic fowl and cat. There was a little evidence of the hunting of red deer and an antler of roe deer was found. Fishing was evidently practised as shown by bones of conger eel and whiting. The most obvious food resource in Saxon features was marine molluscs, though this was probably only a supplement to the diet. Mussels were by far the most abundant species but there were significant numbers of periwinkles, limpets and oysters.

Sheep provided the raw material for textile production, the only craft activity for which there was good evidence. Despite the absence of definite examples of loom-weights many of the other accoutrements of spinning and weaving were present: spindle whorls, teeth from weaving combs, pin-beaters and a large netting needle. These were augmented by further examples of spindle whorls and a weaving comb which accompanied burials in the cemetery. Much of this weaving equipment had been fashioned from bone, and numerous mid-shaft bone fragments in Structure XLVIII may indicate the production of bone artifacts. We may also infer from the excavated evidence that in this society a very high level of woodworking craftsmanship had been attained. Doubtless this was reflected both in the buildings themselves, and in the wooden buckets and objects from which we have bronze and iron fittings.

THE ANGLO-SAXON SETTLEMENT PATTERN

The fifth century cemeteries of Sussex—Bishopstone, Alfriston, Selveston, Beddingham and South Malling—are, with the single exception of Highdown, nucleated in the area between the rivers Ouse and Cuckmere bounded on the north by the edge of the Weald. Mr. Martin Welch has recently shown that this nucleation corresponds to an apparent absence of Romano-British villa estates and probably represents a treaty settlement.¹ Tentative suggestions as to the events which may have led up to the settlement of this area have been made by Mr. Welch, and subsequently by Professor Cunliffe,² and Dr. John Morris.³ For our knowledge of these events we depend to a large extent on the interpretations of a very small number of references in the literature of the period, among which are those in *The Anglo-Saxon Chronicle*, which records that in the year A.D. 477 Aelle landed in Sussex. Recently Dr. John Morris has argued for a redating of parts of the Chronicle calendar which would put this event some twenty years earlier.⁴ The present state of archaeological knowledge does not enable us to say whether the sites in the Ouse-Cuckmere region, and Bishopstone in particular, had their origins in the historical migration or in some earlier and unrecorded immigration, perhaps of mercenaries.

With the evidence of Bishopstone to hand it now seems likely that settlements may once have existed close to the other fifth century cemeteries in the area. That this was so is suggested by the occurrence of the pottery fabrics identified at Bishopstone in grave fills and top soil at Highdown, Alfriston and South Malling. Similar sherds in the Bishopstone cemetery were obviously part of a spread from the settlement. Furthermore traces of buildings at Highdown which were originally dated to the late Roman period show interesting similarities to the Saxon structures at

¹ M. G. Welch, 'Late Romans and Saxons in Sussex,' *Britannia*, vol. 2 (1971), pp. 232-237.

² B. W. Cunliffe, *The Regni* (1973), pp. 126-139.

³ J. Morris, *The age of Arthur* (1973), pp. 93-95.

⁴ J. Morris, 'Dark age dates,' in M. G. Jarrett and B. Dobson (eds.), *Britain and Rome* (1965), pp. 145-85.

Bishopstone.¹ If these cemeteries do represent the sites of the primary Saxon settlements it is noteworthy that only one of them, Selmeston, is today the site of a village. Exactly when, and why, the first generation of Saxon settlements were deserted is still obscure. In the case of the Rookery Hill settlement there is below the hill the historical Bishopstone, a village of indisputable Saxon origin. It might therefore be assumed that the settlement simply moved down into the valley, perhaps when conditions became more stable. The relationship between the archaeological evidence and subsequent historical developments in the area thus assumes added importance. Mr. Haselgrove has undertaken a survey of the historical sources, and a summary of his conclusions follows. Suffice it to say that there may well have been a chronological gap between the abandonment of Rookery Hill and the founding of Bishopstone village, an event which might have been in the second half of the eighth century or later.

¹ M. G. Bell, 'Saxon settlements and buildings in Sussex,' in P. Brandon (ed.), *The South Saxons* (1978—forthcoming).



DOCUMENTARY SOURCES

by Dennis Haselgrove, C.B., M.A.

In the nature of things the written sources of local history and topography provide nothing to illuminate the various phases of early occupation which the excavations have revealed on Rookery Hill. Indeed Bishopstone is named first in Domesday Book, which also provides indirectly a view of conditions as then existing in the Ouse levels. However, it is of some relevance to the present report that the documentary record of the area goes back rather further in Saxon times than has been generally assumed. The more detailed records of the Medieval period show the significance of the brief earlier references.

Topography

We still lack a confident geographical account of the stages and effects of the sea's encroachment between the last Ice Age and the Medieval period. It has been suggested that, after the initial invasion and drowning of the Ouse valley, tidal flats (later reclaimed) had been formed by about the Bronze Age.¹ The general opinion, however, has been that, in Roman times at least and probably later, the Ouse and other Sussex rivers still existed as broad estuaries² and a recent view is that at Domesday the whole width of the valley floor probably still formed a tidal inlet.³ To judge from the Post-Medieval experience, which has been the subject of detailed study,⁴ change during particular phases may often have been rapid, and it seems not impossible that a cycle of reducing tidal scour, shingle formation across Seaford Bay and subsequent further invasion by the sea, has occurred more than once in the Post-Glacial period. Be this as it may, the indications from the documentary sources are that, while without doubt throughout Medieval times, until the sixteenth century, the Ouse was navigable from an outlet at Seaford, some exploitation and 'inning' or reclamation of the levels began at least in later Saxon times.

The significant point is the large extent of meadow attributed in Domesday Book to holdings in the area.⁵ Only those places are named, Bishopstone among them, which were centres of land tenures or 'manors,' or which, like Lewes, had attained the status of boroughs, so that the geography is imprecise; the extent of the manor of Bishopstone is discussed below. But the Ouse was fringed by important and populous holdings, and in most cases a large extent of meadow is reported. Thus, Rodmell and Southease on the west bank had each more than 100 *acres*,⁶ while to the east 'Toringes' (Tarring Neville) had 50 and Bishopstone itself 40 *acres*. Because of the topography the meadow must have been on the alluvium, and the hay crops would need to have been protected as far as possible against flooding by salt water. The extent of tidal penetration at this time is shown by the attribution of extensive salt working to Rodmell, Beddingham, Ripe and Laughton.

¹ J. A. Steers, *The coastline of England and Wales*, (2nd edition), (1964), p. 311.

² See maps in J. R. Armstrong, *A history of Sussex* (3rd edition), (1974), pp. 25, 30-1.

³ P. F. Brandon, 'The origin of Newhaven and the drainage of the Lewes and Laughton Levels,' *S.A.C.*, vol. 109 (1971), p. 96.

⁴ See section on the topography, p. 2.

⁵ See J. H. Round and L. F. Salzman, 'Domesday Book (Introduction and translation) *V.C.H.*, Sussex vol. I, London (1905), pp. 351-451, and also S. H. King, Sussex chapter (with maps) in H. C. Darby and E. M. J. Campbell (eds.), *The Domesday Geography of South-East England*, Cambridge (1962), pp. 407-82.

⁶ *Acres* in Domesday Book may mean no more than 'strips,' of uncertain area.

Some earlier evidence of reclamation in the area is provided by the bounds in the charter, preserved in the records of the New Minster (afterwards Hyde Abbey) at Winchester, by which in 957 'Heahtun' (South Heighton) was granted by King Eadwig to the minster; the bounds proceed, in the Anglo-Saxon version, 'of thaere ea in to Wulfstanes fleote; of Wulfstanes fleote andlang dices on hokes clif . . .'¹

The Medieval records contain various references to the alluvium in the Bishopstone area and its exploitation. The earliest, towards the end of the twelfth century, is to a brook called the 'saldemers,' presumably meaning 'salt marsh,' and at this time Bishop Seffrid II provided a watermill.² In the Bishopstone customal, dated probably to 1253-62, the cathedral chapter is stated to possess a watermill and two brooks 'at Scheldemersch and Litlemersch'.³ In the Denton customal of 1274 there are references to responsibilities for keeping up the sea walls.⁴ In a Bishopstone terrier of 1306 there were meadow and pasture in the Scheldemersch, among other places, and there were six acres of wheat in 'Canonmersch next Waterlag'.⁵ In 1329 there is a reference to the Newmersch, which had been lately reclaimed from the sea,⁶ but in the 'Nonae Returns' of 1341 it is claimed that in the 50 years since the Taxation of Pope Nicholas lands at Bishopstone to the value of 60 shillings annually had been lost to the sea.⁷ As the Returns and other evidence show, the fourteenth century was a period of intensified attack and erosion by the sea along the Sussex coast. In 1379 French warships could still sail up the Ouse within sight of Lewes,⁸ but by the early sixteenth century progressive obstruction of the outlet at Seaford brought about a serious deterioration in the regime of the levels and the end of Seaford as a port.⁹ In more recent times the sea's advance has been kept at bay, but the vulnerability of the low-lying area around Bishopstone to a major onslaught was demonstrated in the great storm of 1824 when, according to the account recorded 30 years later by the Seaford antiquary, M. A. Lower, a barge was carried by floodwater up the Bishopstone valley past the village and deposited in a grove of elm trees near Norton.¹⁰ Whether the site was similarly vulnerable at periods in the distant past must remain at present a matter of conjecture.

During the Medieval period the Ouse, on its course towards Seaford, flowed close to the chalk promontories of Rookery Hill and Hawth Hill. The period by which the outlet had been diverted as far as Seaford is not known. No settlement at Seaford is recognisable in Domesday Book, and much of the documentary evidence which might be held to suggest its existence in

¹ Texts in Anglo-Saxon, Middle English and Latin in *Liber de Hyda* (E) ed. Edwards, Rolls Series, p. 167 and also in W. de G. Birch, *Cartularium Saxonicum* (abbreviated hereafter to *B.C.S.*), 3 vols., London (1885-93), 1000. The charter is not included in the collection of texts, with translations and commentary by Eric E. Barker, 'Sussex Anglo-Saxon Charters' (hereafter abbreviated to Barker) in *S.A.C.*, vol. 86 (1947), pp. 42-101 (Nos. I-XVII), vol. 87 (1948), pp. 112-63 (Nos. XVIII-XXVIII) and vol. 88 (1949), pp. 51-113 (Nos. XXIX-LII). Identification of 'Heahtun' as South Heighton is owed to R. Forsberg, 'A Contribution to a Dictionary of Old English Place-Names' in *Nomina Germanica*, vol. 9, Uppsala (1950), p. 208. Mrs. Brenda Westley of Brighton and Hove Archaeological Society has provided information on studies of the texts and fieldwork currently in progress.

² W. D. Peckham (ed.), *The Chartulary of the High Church of Chichester* (abbreviated hereafter to

Chichester Chartulary) (Sussex Record Society (abbreviated hereafter to S.R.S.), vol. 46, 1946) no. 179.

³ W. D. Peckham (ed.), *Thirteen Customals of the Sussex Manors of the Bishop of Chichester and other documents* (abbreviated hereafter to *Customals etc.*) (S.R.S. vol. 31, 1925), pp. 87-98.

⁴ *Customals etc.*, p. 100.

⁵ *Customals etc.*, pp. 131-2. Acres in the terrier were probably smaller than modern statutory acres.

⁶ *Chichester Chartulary*, No. 1076.

⁷ G. Vanderzee (ed.), *Nonarum Inquisitiones in Curia Scaccarii*, Record Commissioners (1807). See also Judith A. Brent, 'Alciston Manor in the Later Middle Ages,' *S.A.C.*, vol. 106 (1968), pp. 89-102.

⁸ *V.C.H. Sussex*, vol. 1, p. 510; vol. 7, p. 15.

⁹ P. F. Brandon, 1971, *op. cit.*, pp. 96-8.

¹⁰ M. A. Lower, *Memorials of the town, parish and cinque-port of Seaford* (1855), p. vii.

Saxon times must be rejected.¹ and its development seen as post Norman Conquest. The grant in William Rufus' reign to Lewes Priory by the second William of Warenne of privileges at Seaford as well as at Lewes may be a reality, although the surviving text is of the fifteenth century.² In 1163 Pope Alexander III apparently allowed the Bishop of Chichester to acquire the church (in which a substantial Norman fabric survives) in exchange for lands at Denton.³ In 1203 Seaford is documented as an important port.⁴ In the thirteenth century Bishopstone customal there is an interesting reference to responsibilities for carrying timber to the boat (batellum), presumably at a quay nearby on the old course of the Ouse, as well as to Lewes and Seaford.⁵ There is no evidence, at any rate at this period, that Bishopstone village itself was approachable by water.

The manor and village of Bishopstone

Domesday Book shows that Bishopstone had been a 25-hide holding of the Bishop of Selsey 'in the time of King Edward (the Confessor)' and it so remained, although by 1086, when the survey was made, the bishopric had been transferred to Chichester. The bishops' tenure continued through the Middle Ages to the sixteenth century, when the demesne was leased, and the cathedral records, with other sources, provide valuable, if patchy, documentation, some of it already referred to, of the topography of the area and the organisation and activity of the manor and its people during the Medieval period. By 1580, at a date which is not known, the manor had passed into the hands of the Pelhams.⁶ The Saxon origins of the present-day village are also attested by the survival, in the notable church of St. Andrew, of a pre-Conquest nave and porch generally considered, on architectural grounds, to be the oldest surviving church fabric in Sussex. The tower, north aisle and chancel are Norman.⁷

As usual, the Domesday account of Bishopstone is terse. In translation it reads:—

'In Flexberge hundred.

Bishopstone is held in demesne by the Bishop of Chichester.

In King Edward's time it was assessed for 25 hides and now likewise.

There is land . . . On the demesne there are three plough teams, and

30 villeins with nine bordars have 30 teams. There are 40 acres of meadow,

¹ The early thirteenth century 'Proverbs of Alfred' represent the king as presiding over a meeting of a Witan at 'Sevorde' (ed. Morris, *An Old English Miscellany*, Early English Text Society, p. 102), quoted by W. H. Stevenson, *Asser's Life of King Alfred* (1904, reprinted 1959), Introduction p. lxxii. The texts from the twelfth century archives of the Abbey of St. Denis at Paris which purport to be an eighth century grant to the Abbey of Hastings, Pevensey and Rotherfield 'situate on the river Saforda' (*B.C.S.* 252 (Barker XVIII) and *B.C.S.* 259 (Barker XIX)) are evidently forgeries. The contemporary account of the theft in 1058 of the relics of St. Lewinna from the church of St. Andrew, some three leagues distant from the harbour of Sefordt and their removal to Bergues in Flanders (Bollandistes, *Acta Sanctorum*, vol. V) may provide pre-Conquest documentation of a 'sea ford' in the locality, but not of any substantial settlement. M. A. Lower pointed out (*S.A.C.*, vol. 1 (1848), pp. 46-64) that the topographical description seems rather to be of the mouth of the Cuckmere, and it has been difficult to feel any

confidence that the church of St. Andrew was that at Bishopstone.

² L. F. Salzman (ed.), *The Chartulary of the Priory of St. Pancras at Lewes*, Part I (S.R.S. vol. 38, 1933), pp. 7-9.

³ *Chichester Chartulary*, No. 62.

⁴ *Pipe Rolls* 1203-4, cited by A. L. Poole, *Domesday Book to Magna Carta* (vol. 3 of *Oxford History of England*), (1951), pp. 94-6.

⁵ *Customals etc.*, pp. 87-98.

⁶ Possession of the manor by the Pelhams is first indicated in the will (1580) of Sir John Pelham of Laughton (*P.C.C.* 46 *Arundell*), quoted in the Hon. Mrs. Arthur Pelham and David McLean, *Some Early Pelhams* (1931).

⁷ There are many written accounts of the church, including a detailed article by Walter H. Godfrey, 'The Parish Church of St. Andrew, Bishopstone,' *S.A.C.*, vol. 87 (1948), pp. 164-83. See below, for references to the work of G. Baldwin Brown, E. Fletcher and A. R. Green.

Wood yielding three pigs from pannage; and from pasture one pig from every three. In King Edward's time it was worth £26 and afterwards £11; now £20. Of this manor Geoffrey has four hides, Harold two hides and Richard three hides. There are six plough teams on the demesne and 13 bordars. The whole of this is worth 110 shillings.¹

Some points in the account may be specially noted. The Domesday assessments in hides are artificial and not necessarily related to the extent of arable or other resources. More than a third of the assessment was assigned to sub-tenants. In this case, as frequently, the commissioners were unable to estimate the full arable potential. There is a relatively large population of heads of households owing services and also of plough teams, but only a small number of teams was maintained by the Bishop himself. No mention is made of fisheries, mills or salt-working, which, in Sussex, seem usually to have been referred to where they existed; fisheries were normally fresh water fisheries, but on the Ouse sea fisheries, in the form of herring renders, are specified at Southease, Rodmell and Iford. A church is not mentioned, but references to churches may be either fortuitous or related to their providing specific forms of revenue.

The settlements adjoining Bishopstone in Medieval times, all of which were separate parishes and which, as their boundaries attest, shared in the exploitation of the Chalk Downs and, so far as was practicable, of the Ouse levels, were Denton, South Heighton and Tarring Neville to the west, and East Blatchington to the east. Of these only Tarring Neville appears in Domesday Book. But, as already noted, South Heighton had been granted in the tenth century to the New Minster at Winchester and in Medieval times continued to form part of Hyde Abbey's manor of Southease.² It may be assumed that East Blatchington already formed part of Alciston, to which it belonged in the Middle Ages.³ Bishopstone parish was relatively large, about double the size of its neighbours and extending to nearly 7km.², but it included the separate settlement of Norton, now Norton Farm, about 1km. to the north, higher up the downland combe at the entrance to which Bishopstone itself is situated.⁴

The Medieval records show that the manor of Bishopstone included not only Norton but also Denton. The thirteenth century custumal already referred to declares that 'the ploughs of the customers of Bishopstone, Norton and Denton shall come to the two ploughing boon-works.' Freeholders of the manor held lands in Norton and Denton, and various grants or exchanges are documented; as already noted above, it was land at Denton which was exchanged by the Bishop for the church at Seaford. A separate rectory of Denton is not recorded until it is mentioned in the Taxation of Pope Nicholas in 1291.⁵ The Subsidy Rolls indicate the relative importance of Bishopstone, Norton and Denton as population centres; that of 1296 does not assist, since it shows only the taxpayers of Denton, Heighton and Blatchington in a single list, but the corresponding rolls in 1327 and 1332 show totals respectively of 10 and 8 taxpayers at

¹ See J. H. Round and L. F. Salzman, 1905, *op. cit.* A new text of the Sussex folios, with translation, in the series, ed. John Morris, *History from the Sources*, is in the press (Published 1976).

² Although South Heighton is not named in Domesday Book, a small manor 'Estone' in Flexberge hundred, held before the Conquest from King Edward, may have been part of it, or may have been Heighton Street, in West Firle.

³ See J. A. Brent, 1968, *op. cit.*

⁴ W. Figg in an article on Bishopstone church (*S.A.C.*, vol. 2 (1849), pp. 272-84) refers to a former chapel at Norton, but no other reference to this has been found.

⁵ *Taxatio ecclesiastica Angliae at Walliae auctoritate Papae Nicholai IV circa 1291, Record Commissioners (1802).*

Bishopstone, 16 and 11 at Norton and 7 and 6 at Denton.¹ The holdings of the manorial freeholders were at Norton and Denton (or further afield) rather than at Bishopstone.²

Other features of the manor in Medieval times included possession of woodland at Heathfield in the Weald, 20km. to the north. This appears in the custumal, and the terrier of 1306 shows woodland also at *Herstbrigg* in Hellingly. Mention is made in 1148 of a church at Heathfield, linked with that of Bishopstone.³ There appears to have been a kind of colony at Litlington in the Cuckmere Valley, where Bishopstone is similarly recorded first in 1148 as possessing jurisdiction.⁴ The custumal records nine tenants of the manor at Lewes, but although Domesday Book recorded possessions at Lewes of many outlying rural manors it did not do so in the case of Bishopstone. The custumal also records individual freeholders of Bishopstone in various distant parts of East and West Sussex.

How far individual features of the manorial organisation go back to the period of Domesday and beyond cannot be known, but it would be reasonable to assume that the settlements at Norton and Denton were then part of the manor, and the Domesday sub-holdings may well be reflected in those listed in the custumal nearly two centuries later. Distant holdings, particularly for the herding of pigs, are a feature of the earliest Sussex charters going back to the seventh or eighth centuries when the Sussex bishopric secured its earliest estates.⁵ For the most part, continuity in the holding of the estates themselves from Saxon times into the Medieval period seems to be established.

The link between Bishopstone and Denton points clearly to the circumstances, not previously remarked on, in which the estate came first into the possession of the bishopric. Rather curiously, two Latin texts written in a Chichester cathedral register in the fourteenth century record decisions in a dispute concerning some land at 'Denton' which came before church synods held in 801, probably at Chelsea, and in 825, probably at Lubbenham in Leicestershire.⁶ On the first occasion King Coenwulf of the Mercians was present and claimed that the Denton land properly belonged to the minster at Beddingham and should be returned, but Bishop Wihthun of Selsey maintained successfully that it had been given to his predecessors at Selsey. In 825 Bishop Coenred, who had apparently been deprived of part of the land, said that King Offa had granted it by written charter from the possessions of the church of Beddingham to a certain Abbot Plegheard, who had given it to the episcopal see. Again the bishop's claim was upheld.

The fact that these texts were preserved and copied at Chichester in the fourteenth century does not seem to admit of any explanation other than that they were regarded as the 'title deeds' of the Bishopstone estate. Such texts are unlikely to have been fabricated. Thus it appears that the Denton and Bishopstone land came to the bishopric in about the 770's (Wihthun became

¹ W. Hudson, *The three earliest subsidies for the county of Sussex in the years 1296, 1327 and 1332* (S.R.S., vol. 10, 1909), pp. 23, 193, 304-5.

² Names of freeholders are given in the Bishopstone custumal (1253-62). Reynold de Clyfton held 20 hides, of which three hides were at Norton and three at Denton. William de Dentone held 9½ hides. The other holdings were at Litlington, or further afield in Sussex. In the Scutages for the Armies of Edward I (end of thirteenth and beginning of fourteenth centuries, relevant texts in *Custumals etc.*, pp. 135, 142-3) it is made clear that William de Dentone's land was in fact at Denton. Half of the Clyfton lands at Norton were now held by Simon de Wodeham, but 'the rest of Norton is in the Lord's hands.'

³ *Chichester Chartulary*, No. 60.

⁴ *Chichester Chartulary*, No. 167.

⁵ Compare the grants of Selsey to Bishop Wilfrid (*B.C.S.* 64, Barker II), (though in this case the attached lands may have been separate estates or later acquisitions) of 'Hugabeorgum and Dene' to Bishop Eadberht (*B.C.S.* 144, Barker III, but identified by Forsberg, 1950, op. cit. pp. 63-4 as probably Preston, near Brighton) and of Bexhill to Bishop Oswald (*B.C.S.* 208, Barker XIV).

⁶ The texts are *B.C.S.* 302 (Barker XX) and *B.C.S.* 387 (Barker XXI). Identification of the meeting place of the second synod (Clobesham) as Lubbenham is that of H. P. R. Finberg—see *The Formation of England 550-1042* (1974), p. 50.

Bishop of Selsey towards the end of the 780's), and that it formerly was part of a much larger jurisdiction based on Beddingham. A century later Beddingham appears in King Alfred's will as a royal possession which, with others, is bequeathed to the king's nephew, Aethelm.¹ In Domesday it again appears as an important royal estate of 52½ hides in the hands of King Edward; and it appears likely that other holdings in the area, large and small, may have also been detached from it from time to time. It may also be noted that in the Denton texts the land is apparently assessed at 25 hides, the same assessment as that of Bishopstone in Domesday Book. However although there are other examples of Saxon charters in Sussex which indicate long continuity of the assessments prior to Domesday,² the possibility of alteration or interpolation in copying has to be borne in mind.

Other implications seem to follow. If the estate was originally centred on Denton, which retained its name, the site at Bishopstone could well be seen as a new estate centre or home farm, established at some time after the bishopric had gained possession and obtaining its name accordingly. However, this need not necessarily imply that there was no existing settlement at the site of the village; a change of name, such as that which occurred nearby in the sixteenth century from Meeching to Newhaven, is always possible. A pointer is also given to the date of the original building of the church at Bishopstone, since the substantial nave and porch seem unlikely to have been built prior to the bishopric gaining possession whereas on architectural grounds a date even as early as the later part of the seventh century—the period of the Sussex mission of Wilfrid of York—has been proposed.³

Only excavation in Bishopstone village may be able to reveal whether there was any relationship between the Saxon occupation on Rookery Hill and that below the hill in Bishopstone. A further matter for inquiry is the history and nature of sites such as Beddingham which seem to have become centres of royal jurisdiction for Sussex early in Saxon times.

Land use in the Bishopstone area

Although the Medieval record provides much evidence of field and other names in the area, their geographical significance is not apparent; there appears to be no relationship between the earlier names and those which appear in the later documentation from the seventeenth to the nineteenth centuries. In Medieval times there were demesne lands in both Bishopstone and Norton, and possibly also at Denton, and the open field system was operated in all three places. At Bishopstone, the fields both in Medieval and later times seem largely to have been in the most suitable area, in the valley bottom above the village, and at Norton clear evidence of a similar arrangement survived in a terrier of 1766, when the 'common laines' included the West, East and Middle Furlongs, and also the Home, Middle and Further Furlongs, all in 'The Bottom.'⁴ At Denton the nineteenth century Tithe Map shows survival of the names of the former 'laines' of the open fields immediately above and to the south-east of the village and use of the

¹ B.C.S. 553 (extract in Barker XXIV).

² Compare again the grant of 'Hugabeorgum and Dene,' which equates to Preston's 20 hides in Domesday, and also that of Henfield (B.C.S. 206, Barker XII), 15 hides.

³ G. Baldwin Brown in *The arts in early England*, vol. 2 (1925), ch. vii, suggested provisionally an eighth or ninth century date. Sir Eric Fletcher in 'Anglo-Saxon Architecture in the seventh Century,' *Transactions of the London and Middlesex Archaeological*

Society, vol. 21, Part 2 (1965), pp. 89-97, includes Bishopstone among seventh century churches. W. H. Godfrey (1948), *op. cit.*, preferred a tenth century date. Mention may be made of the suggestion by A. R. Green (*Archaeological Journal*, vol. 8 (1928), pp. 508-10) that the Eadric whose name appears on the sundial on the porch might be Earl Eadric, who held office in 942-9 and was bequeathed an estate in Sussex at Washington (B.C.S. 819, B.C.S. 834).

⁴ West Sussex Record Office, Chichester mss/3.

higher ground as sheep pasture. Study of the records of Bishopstone in the sixteenth and seventeenth century by P. F. Brandon showed that by 1685 the Bishopstone demesne lay in severalty and the number of land holders was reduced to 14, of whom only four held land in Bishopstone and the remainder in Norton.¹

Since the recorded Domesday plough teams and population must probably be seen as already divided between Bishopstone, Norton and Denton, if indeed some of them were not based further afield, the cultivated areas in the eleventh century seem not to have been very large. The terrier of 1306 gives details of cultivation in that year of what were probably the demesne lands, including 98½ acres of wheat, 76½ acres of barley, 23 acres of beans, 31½ acres of oats and 85 acres apparently fallow; there were also 114½ acres of pasture and 12 acres of meadow.²

The Domesday record for Sussex, apart from indicating, at Bishopstone and elsewhere, the importance of pig raising in the economy, gives no details of livestock, although exceptionally ten shepherds are recorded at Patcham. Probably, however, in Sussex, as in East Anglia, where the details are recorded, sheep raising was already a major activity at this period. Towards the end of the twelfth century there are references at Bishopstone to 'tithes of the sheepfold,'³ and in the thirteenth century custumal to herding of the Lord's wethers on Wykemannesdoun and herding of sheep on Cotmandoun. A record which is undated but probably later records the stock at Bishopstone as 'horses 3; oxen 27; bulls 1; cows 15; wethers 600; rams 24; ewes 600; etc.'⁴ The 'Nonae Returns' of 1341 also record a total population of more than 1000 sheep at Bishopstone.⁵

Rookery Hill has not been identified in the early records. However, it may possibly be seen as the site of a windmill, the earliest recorded in Sussex, which Bishop Ranulf had built about 1218-22 on 'Werdon Down.'⁶ In 1329 it is recorded, rather obscurely, that the Newmersch, which had lately been reclaimed from the sea, 'goes southwards to Wardoun, northwards to the Down which extends as far as the house of Mauger de la Wykes, and westward to the river which goes towards Seford.'⁷

POST-SAXON ARCHAEOLOGICAL EVIDENCE

Occupation of the site ceased with the abandonment of the Anglo-Saxon settlement and until housing development during the present century it seems to have been largely deserted. The hiatus is filled only by stray finds in the top soil. There were six pieces of probable Medieval pottery; three were body sherds and the remainder are illustrated.

Fig. 104, 50. Everted rim from a large jar with medium to coarse sand and flint filler.

Fig. 104, 51. Rim sherd of a large wheel-made cooking pot with a flat top.

Fig. 104, 52. Body sherd with a raised ridge on the surface along the top of which were prick marks. At right angles to this ridge were incised lines. The fabric is comparable to local Medieval wares but the writer knows of no parallels for the form in that period and its dating remains doubtful.

¹ P. F. Brandon, 'The common lands and wastes of Sussex.' (Unpublished Ph.D. thesis, University of London, 1963).

² *Custumals etc.*, pp. 131-2.

³ *Chichester Chartulary*, Nos. 176 and 185.

⁴ *Chichester Chartulary*, No. 794.

⁵ G. Vanderzee ed., 1807, op. cit.

⁶ *Chichester Chartulary*, No. 206.

⁷ *Chichester Chartulary*, No. 1076.

These sherds came from close to the north edge of the excavation. Also from this area were four pieces of hard quartzite conglomerate of non-local origin which might have been imported to the area as millstones. Mr. Haselgrove has already drawn attention to the possibility that a windmill, recorded in the thirteenth century, may have stood on Rookery Hill. It is interesting therefore that L. V. Grinsell, writing in the 1930's, suggested that the barrow at TQ 46650095, 120m. north of the excavations, had been a mill-stead.¹ There were some signs of activity on the hill about the time of the Napoleonic wars, including scraps of earthenware, a penny of George III (1797) and a cannonball. Much of this material, together with pieces of coke, was found on the northern edge of the excavation near the barrow, which was perhaps the site of a beacon or posting. A thin scatter of brown glazed earthenware, nineteenth century china and 102 pieces of peg tiles probably represent material scattered with manure. A small collection of clay pipe stems, one inscribed with the name J. Goldsmith who worked in Brighton from 1826-46,² may have arrived in the same way or have been discarded by shepherds.

¹ L. V. Grinsell, 'Sussex barrows,' *S.A.C.*, vol. 75 (1934), pp. 216-275.

² D. R. Atkinson, 'A new list of Sussex pipemakers,' *S.A.C.*, vol. 110 (1972), pp. 37-43.

THE FIELD SYSTEM

On the slopes of the hill, surrounding the settlement, there were traces of a 'Celtic' field system¹ (Fig. 2) of which the only really obvious remnant was a large positive lynchet 2.7m. in height running along the south side of the hill on the 38m. contour. The upper edge of the same field was found during the excavations to be marked by a negative lynchet running parallel to the Iron Age enclosure ditch, giving a field 50m. across. Traces of a similar negative lynchet were found outside the west side of the enclosure, and the lower side of this field was marked by a slight positive lynchet from which it was calculated the field was 46m. across. In the angle between the positive lynchet and that on the southern slope was a roughly rectangular field 46m. by 55m., with an area of 0.25 hectares. Slight traces of field banks could be observed, under ideal conditions, elsewhere on the southern side of the hill. There was a negative lynchet 23m. south of the main positive lynchet; the two can scarcely have been coeval, however, and the negative lynchet probably resulted from cultivation at a later period. There were also slight traces of a lynchet along the 24m. contour on the south side of the hill, but below this only short lengths of bank of uncertain origin are visible. However the field system had originally extended to the bottom of the hill where the chalk meets the alluvium. This junction is marked by a bank which was a low river cliff capped, in the area around T.Q. 471006, by a deposit of ploughwash.

It seems possible that the field system originally extended to the west side of the hill. This was under cultivation in 1930² and probably for some time before that; more recently it has been covered by housing development. The main positive lynchet on the south slope terminates today on the edge of the built-up area, although it obviously once continued further west as is shown by an aerial photograph taken in June 1950.³ No traces of fields have been found on the top of the spur north of the settlement. As this area has not been disturbed or cultivated in recent times we may presume that it formed permanent pasture, perhaps connecting the settlement with other areas of pasture on the tops of Downland spurs to the north.

Excavation of the Negative Lynchets (Figs. 27 and 95 and Plates IV and XVIII)

Excavations outside the south and west sides of the Iron Age enclosure revealed terraces in the chalk surface which were the product of plough erosion. These features were not substantial and could only be made out vaguely before excavation. That on the south side of the enclosure ran parallel to the ditch some three to four metres from it and was continuously excavated for 60 metres. On the west side the only excavated portion was a small area at the end of section 19 (Fig. 29), where the negative lynchet was 2.4m. from the enclosure ditch. Along the entire excavated length on the southern side no certain evidence of field boundaries at right angles to the negative lynchet was recorded. However at some stage in the field's life there may have been a corner near the west end (Fig. 27) where a deeper section of the terrace stopped and was continued only as a shallower and possibly later feature. Particularly noteworthy is the absence of any evidence of a double lynchet trackway outside the southern entrance. This might

¹ For explanation of the terms used and a summary of the literature see H. C. Bowen, *Ancient fields* (1961).

² L. V. Grinsell, 1934, *op. cit.*, particularly p. 272.

³ Photo in East Sussex Record Office, Lewes, Ordnance Survey 51/40 SE.

of course have been approached along the unploughed strip between the field edge and the enclosure ditch or, as seems more likely, cultivation may subsequently have extended across the supposed trackway.

In profile the negative lynchet was a small wedge-shaped terrace filled with small chalk rubble and soil. The upper surface of this was truncated by modern ploughing in the arable field, but sealed below the fill was a complex of earlier ploughmarks cut into the solid chalk and filled with dark soil. The marks were generally between 4 and 6cm. wide and up to 3cm. deep. Their profile was typically U-shaped (Figs. 27, 14 and 95) but this may partly reflect the blocky, closely stratified, character of the chalk. The longest continuous mark was 10.4m. In the main they ran parallel to the negative lynchet and often one was cut into another. It was clear therefore that they represented a palimpsest resulting from the repeated passage of the plough along the field edge leading ultimately to erosion of the negative lynchet. Faint traces were also observed of grooves running at right angles to these implying the practice of cross-ploughing.

The field seems to have been cultivated during the life of the early Iron Age enclosure since its boundary was parallel to the ditch, this does not however tell us which was the earlier. The present negative lynchet line post-dated the late Bronze Age for it cut across Pit 659. Cultivation had obviously ceased by the early Saxon period when Structure XXVIII was built on the flat terrace provided by the former negative lynchet. Pottery from the negative lynchet fill comes of course from an old field surface and cannot be regarded as closely stratified. The greater proportion was Romano-British and included a coin of Licinius II (A.D.317-20), but there was also material of Neolithic to Anglo-Saxon date. An intriguing find was part of a retouched flint blade (106) in a plough-groove (Fig. 95); its deposition was probably accidental but the suspicion remains that it could have been part of an agricultural tool. On the basis simply of the thin negative lynchet stratigraphy the cultivation of this field seems to be bracketed between the late Bronze Age and early Saxon periods, but a much fuller picture comes from the zone of deposition at the bottom of the same field.

Excavation of the Positive Lynchet (Figs. 106-9 and Plates XIX and XX)

Trenches have been cut across this feature on two separate occasions, namely in 1970 and 1975. The first of these was when agricultural contractors cut a temporary track through the bank. When this was no longer required the cutting was cleaned back and excavated to solid chalk in order to obtain a profile of the lynchet. The resulting trench was 38.6m. long and 1.8m. wide. It revealed a ditch under the positive lynchet truncated on the south side by an earlier negative lynchet, at the base of which was a zone of darker soil. On the flat terrace of the lynchet traces were found of a building, so a rectangular box 11m. by 9m. was opened up. This revealed Structure XLVII which has already been described in the section on Anglo-Saxon buildings.

This excavation, prompted by the need to record the contractor's trench, had revealed certain interesting features about the lynchet which warranted the more detailed examination of an adjoining section in 1975. On this occasion the excavation had two basic aims; firstly to try and assess when the lynchet had been formed by means of the artifacts it was known to contain, and secondly to obtain information about local environmental conditions during its formation from a study of the land Mollusca. Thus a trench 17m. long by 2m. wide was opened at right angles to the line of the lynchet and excavated entirely by hand. The position of every artifact, that is pot sherd, flint flake or tool, foreign stone, daub, bone, charcoal, etc., was plotted according to three dimensional co-ordinates. Each of these finds was placed in a numbered container,

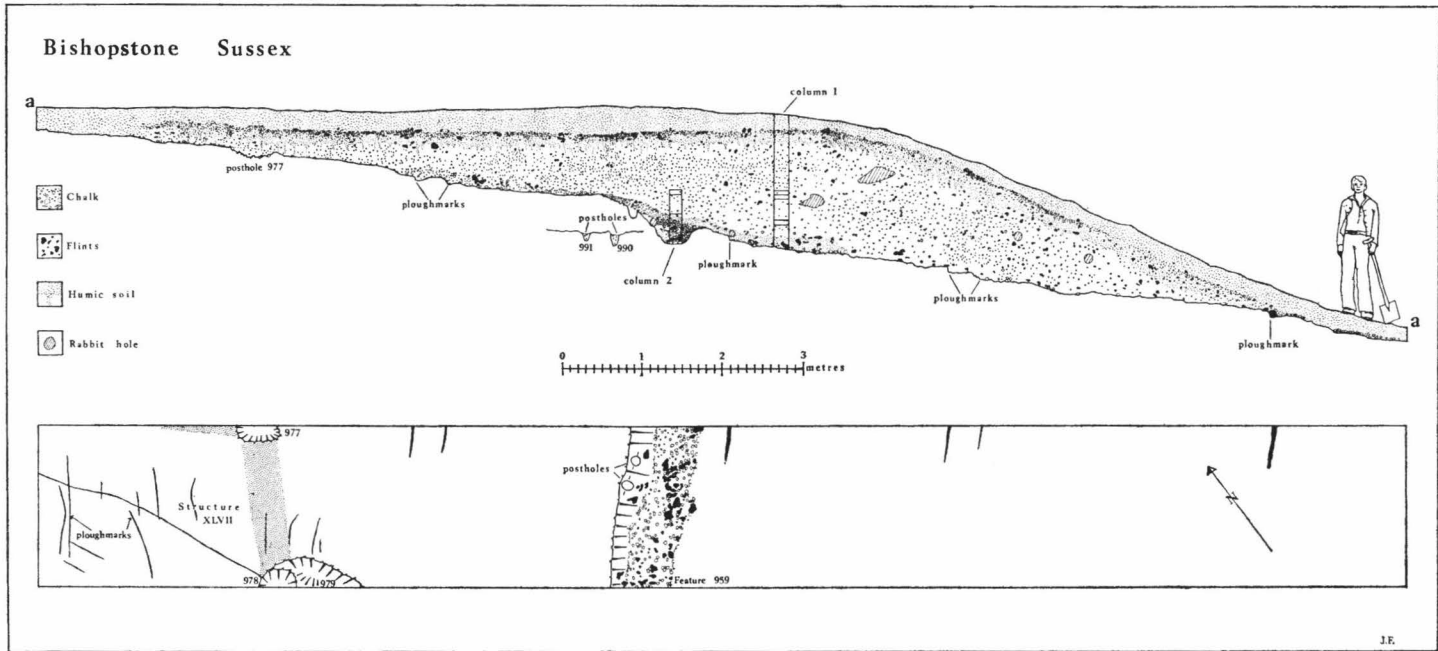


FIG. 106. Plan and section of the lynchet excavation, 1975

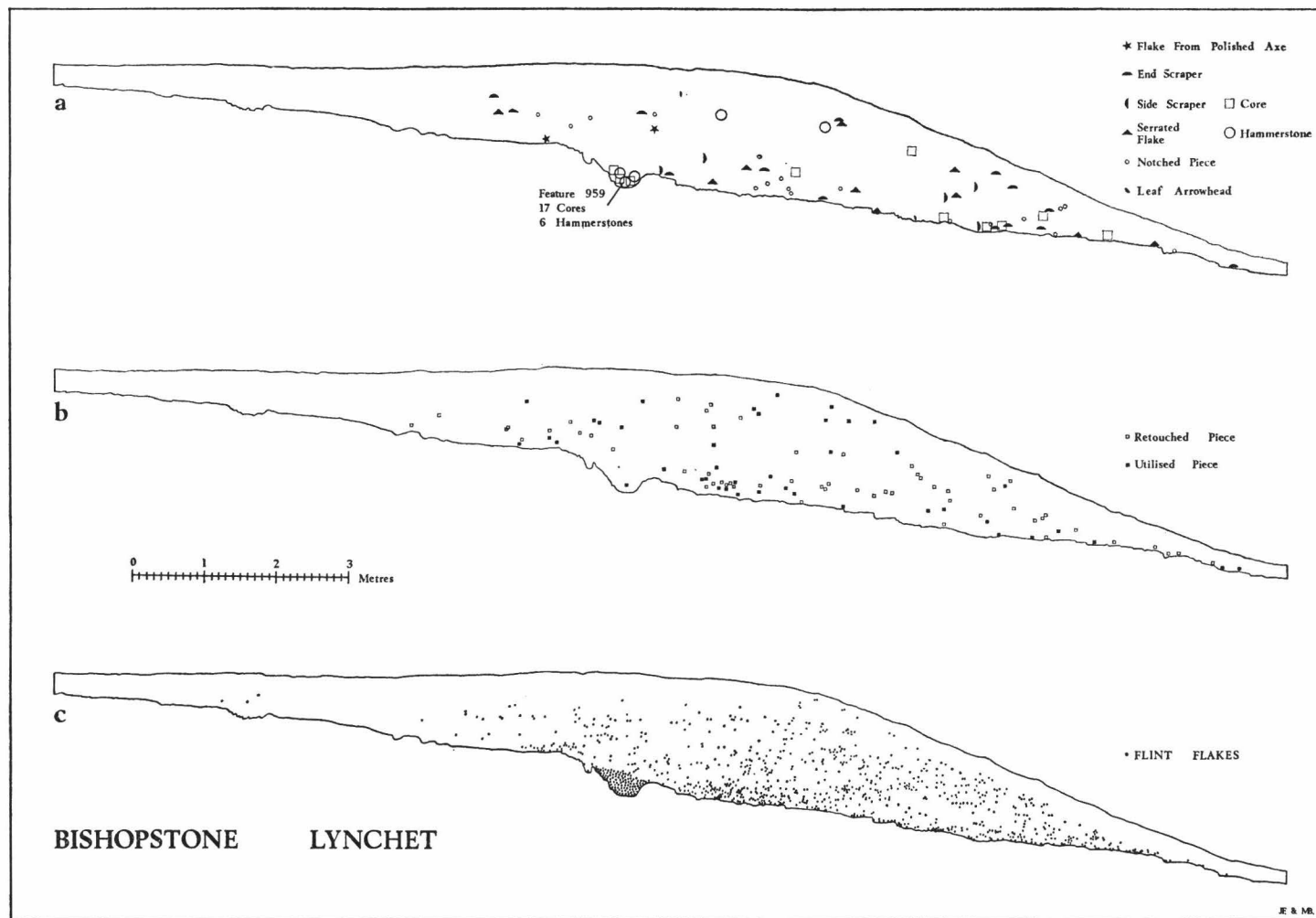


FIG. 107. Lynchet excavations: distribution of flint artifacts

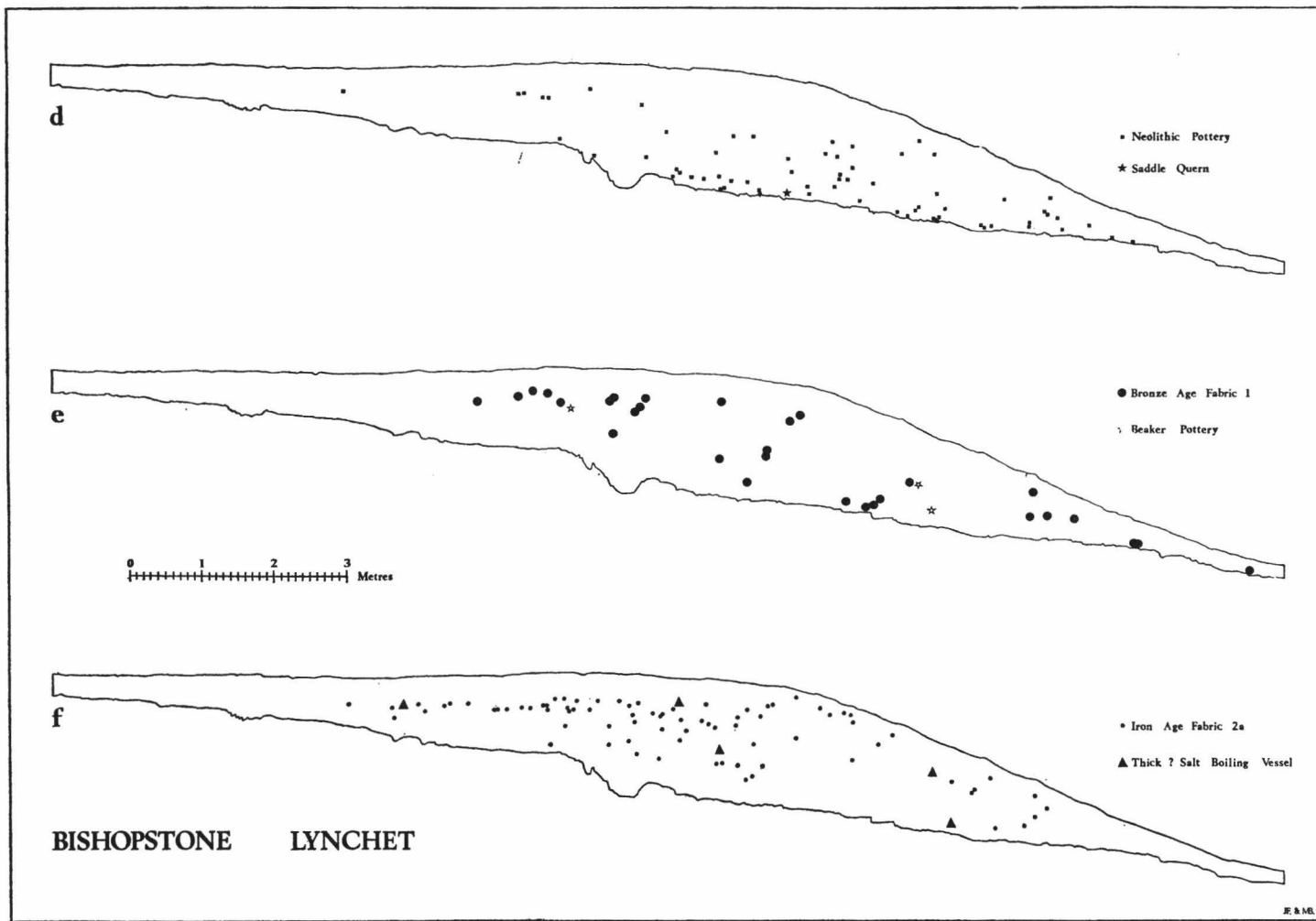


FIG. 108. Lynchet excavation: distribution of Neolithic to Iron Age pottery

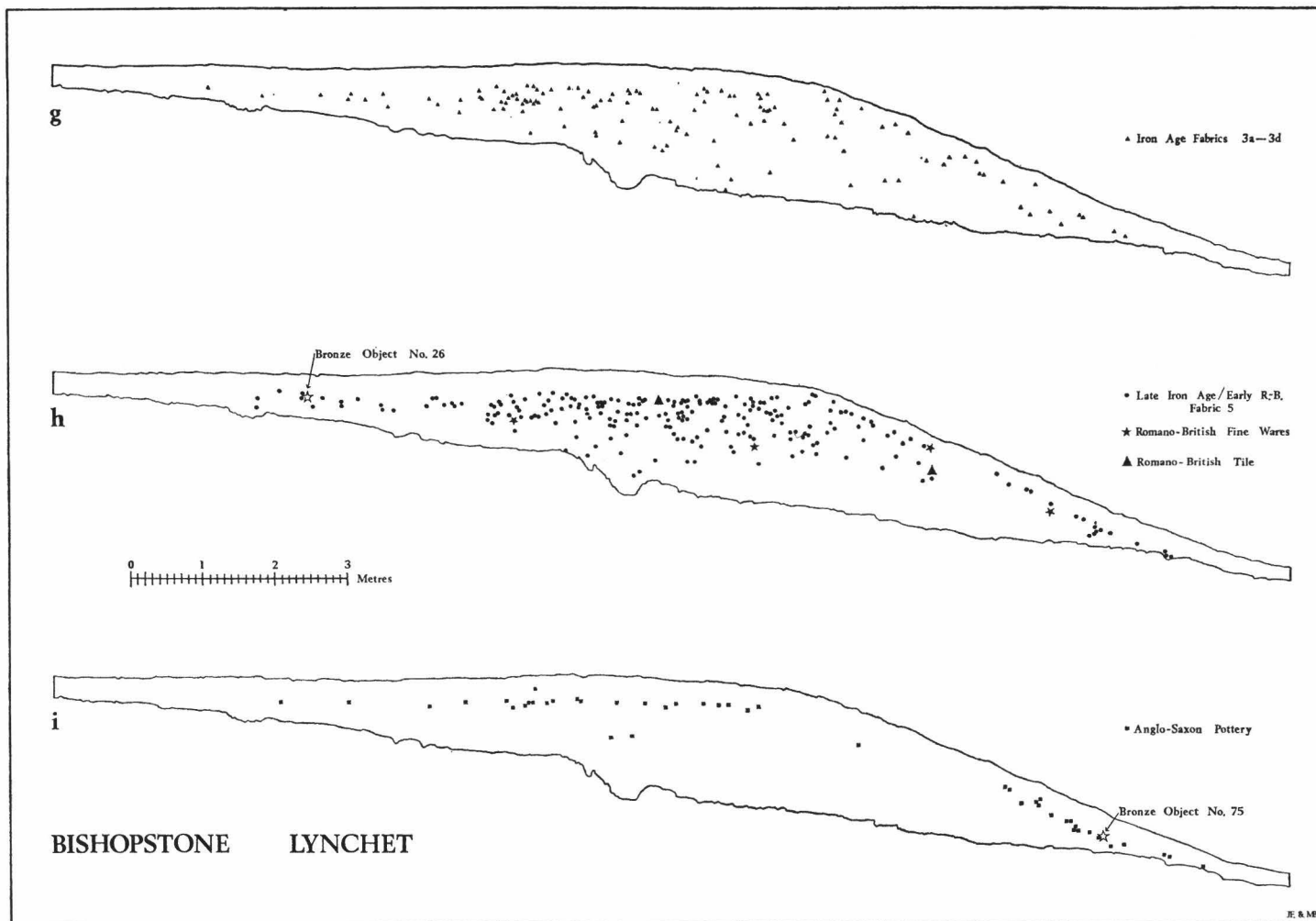


FIG. 109. Lynchet excavation: distribution of Iron Age to Anglo-Saxon pottery

later to be cleaned and marked. Then, once the pottery fabric series had been drawn up, on the basis of excavated pit groups in the settlement, the sherds were identified and the distributions shown on Figs. 107-109 plotted.

The lynchet bank, which had a maximum thickness of 1.8m., was the product of both erosion and deposition for it marked the boundary between two fields. That on its uphill side contributed material, giving it positive elements, while that on the downhill side eroded, giving it negative elements. The boundary between the two fields, and thus between these two processes, was not rigid since there was a tendency for the positive lynchet to creep downhill over the negative lynchet. At the base of the profile was a small ditch, feature 959, which was encountered in both the 1970 and 1975 trenches. This did not follow the line of the present positive lynchet, but curved uphill slightly to the west (Fig. 23). Its south edge had been truncated by a negative lynchet, but we may reconstruct its original dimensions as 70cm. wide by 60cm. deep. The fill comprised large chalk rubble, flint nodules and knapping waste cemented together in places by a calcium carbonate deposit; there was also an area of grey burnt chalk with flakes of charcoal. The only dating evidence was finds of flint objects: 105 flakes, 94 chips, 17 cores and 6 hammerstones, only one flake showed signs of utilisation. The absence, in both trenches, of later material indicates the ditch was of Neolithic date. It seems to have marked the edge of a field because a negative lynchet, formed after the ditch had been backfilled, had cut away its south side following the line of the ditch rather than the present positive lynchet line. On the upper edge of the ditch was a pair of small postholes, 990 and 991, which were 10cm. in diameter and 12cm. deep. They clearly pre-dated the negative lynchet which had truncated them and obliterated any original stratigraphic relationship to the ditch. One suspects, but cannot prove, that the ditch was replaced by a fence as the boundary of this field. Downhill of the ditch the base of the negative lynchet was scored with ploughmarks. These ephemeral traces were only identified with certainty along the contours, the clearer examples being shown on Fig. 106. Marking the base of the negative lynchet was a layer of dark brown soil some 10 to 20cm. thick but without a very clearly defined surface. The appearance of this layer as a soil was confirmed by an abundance of molluscan remains and the fact that it contained less coarse material than the body of the lynchet. It was a noticeably richer brown colour, and of more clayey texture to the fingers, than any present day soil on the site. This might be the result of one of two factors, or a combination of them. One is that this represents an early soil not depleted by thousands of years of agriculture, the other that eluviation of the overlying profile has taken place resulting in the accumulation of soil components in an illuvial horizon at its base.¹

Overlying this soil were deposits relating to the development of the main positive lynchet. An early stage in the cultivation of the area uphill of the ditch had resulted in a palimpsest of plough-marks suggestive of cross-ploughing (Fig. 106). The downhill movement of soil within this field resulted in the build-up of sediments at its edge where they covered and preserved the earlier negative lynchet and the soil which had developed on its surface. The plough-wash accumulation was a yellow brown chalky material impregnated by deposited calcium carbonate. This material was especially apparent on the surfaces between peds² and the linings of earthworm burrows, the latter being prolific towards the top of this layer. Probably at some stage during the build-up of this accumulation cultivation of the lower field recommenced, resulting in the slight

¹ Terms and processes explained in S. Limbrey, *Soil science and archaeology* (1975), pp. 79-80.

² Aggregates of soil material which make up structural units within the soil.

negative lynchet above which the human figure in Fig. 106 is standing. Capping the lynchet accumulation were some 10-15cm. of small rounded chalk pebbles, flint nodules, and artifacts, covered by a layer of mull humus on which the present short turf flora developed. These final two layers are characteristic of an earthworm sorted Downland soil and represent pedogenesis since the field's last cultivation.

Something of a time scale is given to the stratigraphic sequence just outlined by the finding of 1,985 artifacts in the lynchet. We have noted already that the ditch at its base was probably of Neolithic date. What is particularly interesting is that the negative lynchet which truncated it seems to have been of the same period. Among the dark soil on the negative lynchet was a nucleation of Neolithic flakes, tools and pottery (Figs. 107-8), and very little later material (Figs. 108-9). The small number of Beaker and Bronze Age finds showed no distinct vertical zonation, but the presence of six sherds out of thirty-three within the suspected Neolithic soil suggests that this soil remained exposed during the Bronze Age. This evidence relates to the date of the lower field. That of the upper field was less clear; the most we can say is that there may possibly have been a slight positive lynchet on the uphill side of the ditch during the Neolithic. Despite the fact that there was no obvious nucleation of Neolithic finds here, except perhaps flint flakes, later finds were virtually absent from the base of the profile. Early Iron Age to late Romano-British material exhibited a totally different distribution being largely confined to the middle and upper levels of the lynchet. These were the periods during which the major cultivation of the upper field had taken place and the main body of the positive lynchet accumulated. As Dr. Thomas shows below, it built up steadily, without any identifiable pauses. No stratigraphic sequence was recognisable among the pottery fabric types of these periods except that the bulk of the Romano-British finds showed a tendency to be rather higher in the deposit than some of the Iron Age sherds. The absence of clear stratigraphy in the body of the lynchet, due no doubt to the fact that it was constantly being turned over by the plough, makes it significant that the Saxon sherds show a very clear vertical distribution. They were virtually confined to the stone horizon at the base of the earthworm sorted zone, and belong therefore to a time when cultivation had ceased. This was confirmed independently by the fact that buildings, including Structures XLVII¹ and XXVIII, were constructed on the field at that time.

A preliminary report on the Mollusca from the Lynchet section

by K. D. Thomas

Few studies have been made on the molluscs which may be found in lynchet deposits. Fowler and Evans² studied lynchet accumulations in 'Celtic' field systems³ at Overton Down and Fyfield Down, in Wiltshire. A buried soil was found under the Fyfield Down lynchet containing a molluscan fauna characteristic of shaded or woodland conditions. No buried soil was found at Overton, perhaps because of intensive ploughing in the prehistoric period with loss of soil material as ploughwash. The lynchet accumulations at both sites contained snail faunas which, although differing in details, were indicative of open-country conditions. In both cases, the faunas of the modern grass turf were quite different from the ones in the lynchet, probably indicating that the build-up of the lynchets ceased a long time ago.

¹ See discussion of this building's date in the section on Anglo-Saxon buildings, p. 219.

² P. J. Fowler and J. G. Evans, 'Plough-marks,

lynchets and early fields,' *Antiquity*, vol. 41 (1967), pp. 289-301.

³ H. C. Bowen, 1961, *op. cit.*, pp. 14-39.

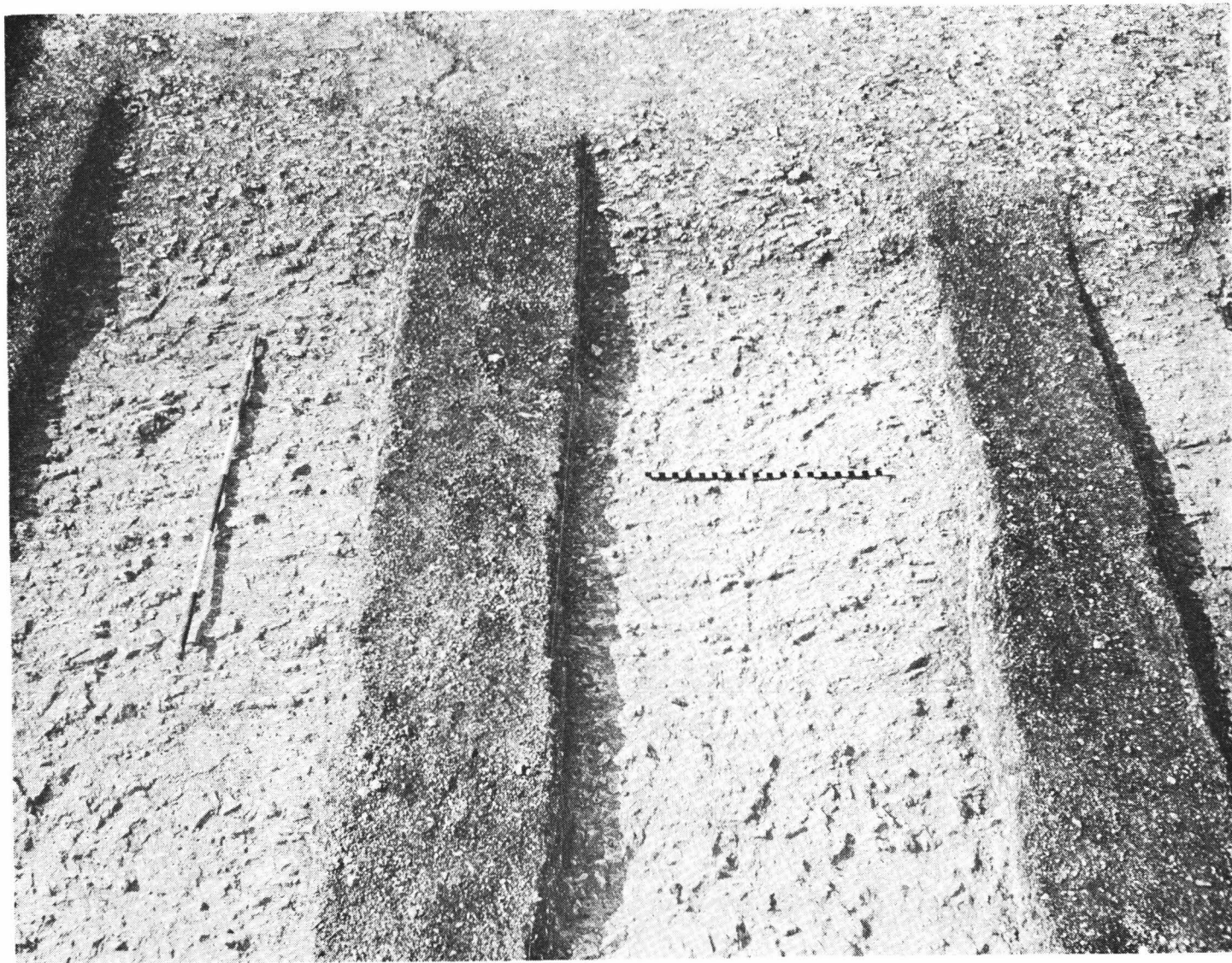


PLATE XVIII. Negative lynchet showing ploughmarks. Scale in feet and inches. (Photo: D. Robinson)

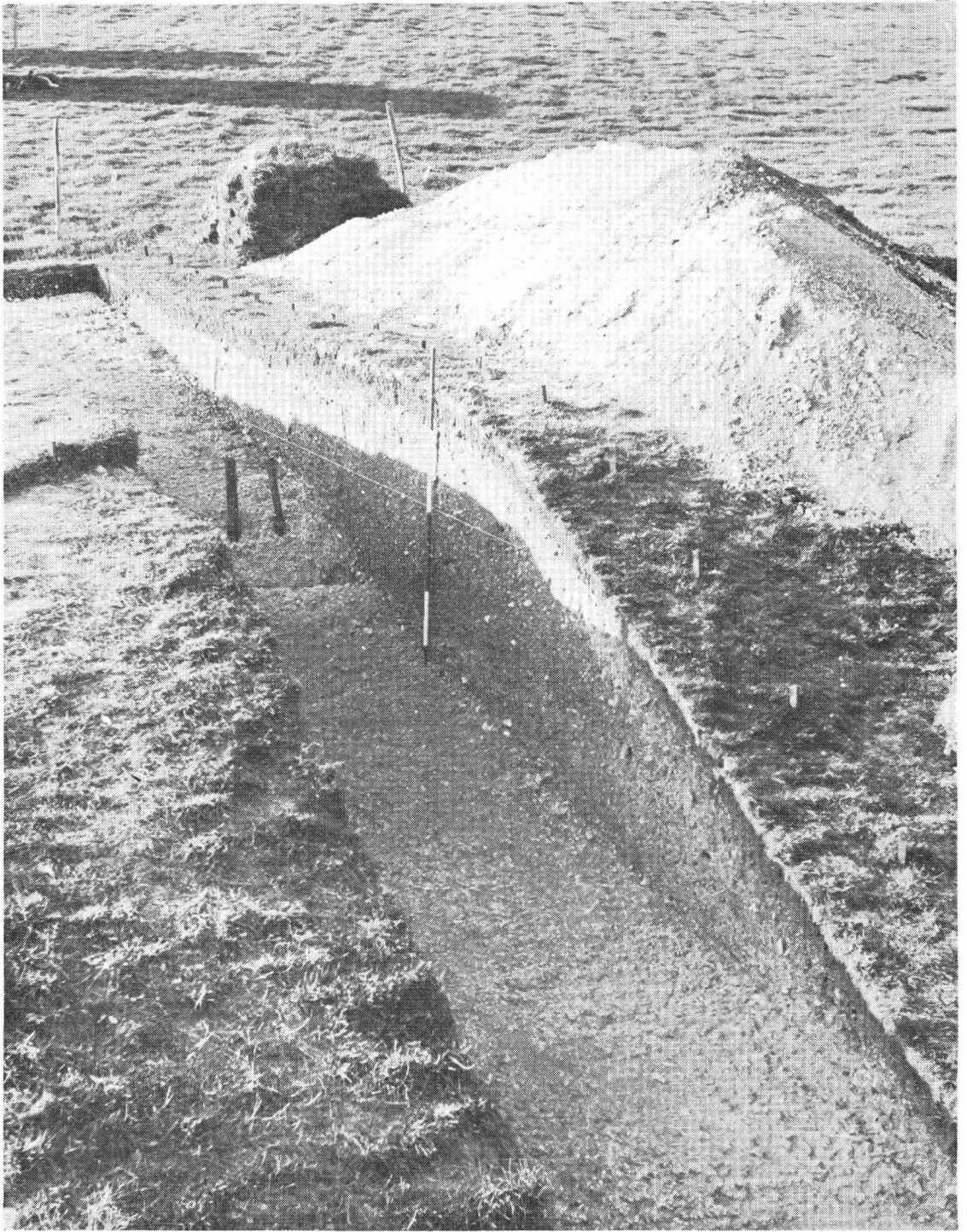
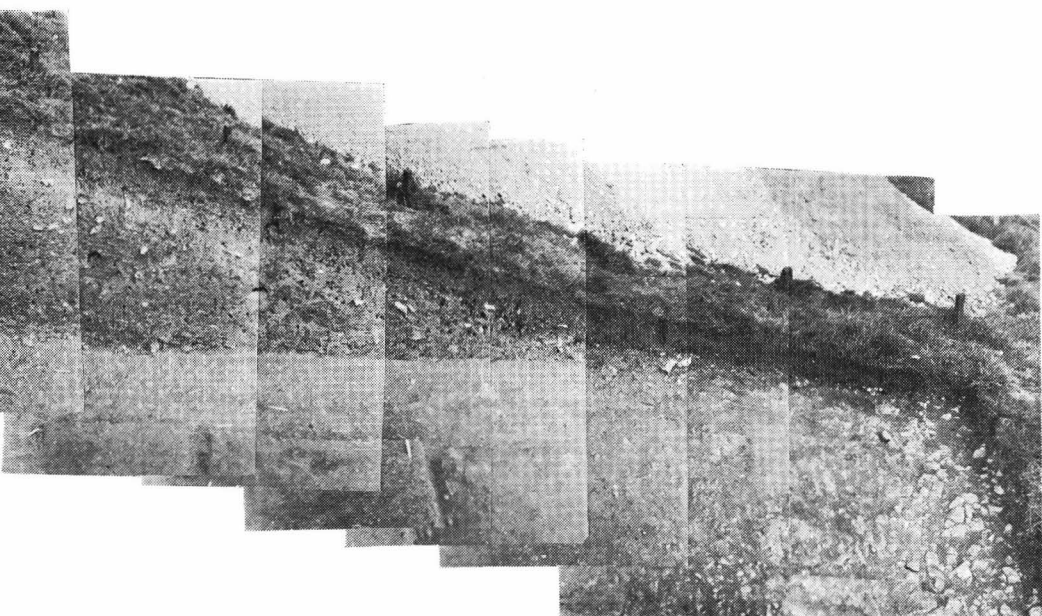


PLATE XIX. Excavation of the positive lynchet. The two postholes are marked by vertical stakes. Scale 2 metres.
(Photo: B. Westley)





The present study describing the molluscan faunas from the Rookery Hill lynchet is preliminary and rather tentative because time has allowed only some of the soil samples to be investigated.

The samples (Fig. 106)

Soil samples were taken through the lynchet accumulations at regular (usually 5cm.) intervals. Column one (thirty samples) was taken through the whole accumulation but column two (eleven samples) was taken from the base of the ditch underlying the lynchet up into the main body of the lynchet.

The report deals with the molluscs from eleven of the samples from column one (evenly distributed through the section) and with three of the ditch samples from column two.

The samples were air-dried and weighed and the molluscs extracted according to Evans,¹ all fragments larger than 0.5mm. being recovered. The residual materials were sorted on sieves and the fractions weighed.

Results

The numbers of identifiable apices extracted from the samples are shown in Table X, along with other data relating to the samples (sample depths are from the present-day land surface).

In many samples it was not possible to distinguish the apices of *Cochlicopa lubrica* and *C. lubricella*. Similarly, very small apices of *Vallonia* could not always be assigned to species. *Cepaea* apices may be confused with those of *Arianta* but since I found no shell fragments referable to the latter genus, all such apices are classed as *Cepaea*.

The nomenclature and systematic ordering follows Walden² and is consistent with most European usage. The major changes, compared with Evans³ (shown in brackets), are: *Nesovitrea* (*Perpolita*) *hammonis* (Ström) (= *Retinella radiatula* (Alder)); *Candidula intersecta* (Poiret) (= *Helicella caperata* (Montagu)); *Cernuella virgata* (Da Costa) (= *Helicella virgata* (Da Costa)); and *Trichia hispida* (Linné) (= *Hygromia hispida* (Linné)). In sample 1, column one, it was not possible to easily distinguish very small apices of *Candidula intersecta* and *Cernuella virgata* and these are combined as "Helicella" spp. in Table X. More time and study should allow a greater degree of discrimination of these apical fragments.

The pre-lynchet environment

Samples 1, 2 and 4 (column two) are from the pre-lynchet ditch. Samples 28, 29 and 30 (column one) are from what may be a Neolithic lynchet or soil, as evidenced by the relative distribution of Neolithic and post-Neolithic artifacts through the deposits.

The lowest samples from column two contain faunas which are older than all the others considered here. The ditch is probably a Neolithic feature; no later artifacts occur in its fill. The fill becomes more stony from the bottom upwards; the proportion of stones of diameter greater than 2.0mm. is 29 per cent in sample 1, 35.5 per cent in sample 2 and 58 per cent in sample 4. Thus, sample 1 may represent the primary silting, with collapse of turves, and their contained molluscs, into the ditch.⁴ The coarser layers are probably rock debris derived from the weathering of the ditch sides.

¹ J. G. Evans, *Land Snails in Archaeology* (1972), pp. 44-45.

² H. W. Walden, 'A nomenclatural list of the land Mollusca of the British Isles,' *Journal of Conchology*, vol. 29 (1976), pp. 21-25.

³ J. G. Evans, 1972, *op. cit.*

⁴ P. A. Jewell and G. W. Dimbleby, 'The experimental earthwork on Overton Down, Wiltshire, England: the first four years,' *P.P.S.*, vol. 32 (1966), pp. 313-342.

TABLE X

Profile	COLUMN 1												COLUMN 2		
	Sample	1	3	7	10	14	18	22	26	28	29	30	4	2	1
	cm.	10-14	26-30	50-55	65-70	85-90	105-110	125-130	145-150	155-158	158-161	161-167	135-140	150-160	160-164
Weight (kg)	0.96	0.71	0.96	0.90	0.90	0.93	1.00	0.95	0.86	0.78	0.83	1.00	0.96	0.83	
<i>Pomatias elegans</i> (Müller)	22	7	8	10	29	41	41	65	35	45	11	37	26	34	
<i>Carychium tridentatum</i> (Risso)	—	—	—	—	—	—	—	—	—	—	—	—	5	4	
<i>Cochlicopa lubricella</i> (Porro)	—	—	—	—	—	—	—	—	1	—	7	—	—	—	
<i>Cochlicopa</i> sp.	5	3	1	1	3	—	2	16	3	7	14	1	5	12	
<i>Truncatellina cylindrica</i> (Férussac)	—	—	—	—	—	—	—	—	—	4	1	—	1	1	
<i>Vertigo pygmaea</i> (Draparnaud)	3	1	—	—	—	—	—	2	2	4	6	—	—	—	
<i>Pupilla muscorum</i> (Linné)	240	121	41	44	45	12	31	191	920	694	421	47	22	28	
<i>Vallonia costata</i> (Müller)	32	65	39	16	65	27	13	23	58	57	82	21	19	26	
<i>Vallonia excentrica</i> Sterki	108	68	20	26	53	39	16	18	16	24	10	5	10	7	
<i>Vallonia</i> spp.	8	—	—	—	13	—	—	—	—	3	—	—	—	—	
<i>Ena obscura</i> (Müller)	—	1	—	—	—	—	—	—	—	—	—	—	—	—	
<i>Punctum pygmaeum</i> (Draparnaud)	—	—	—	—	—	—	—	1	—	1	—	—	—	—	
<i>Discus rotundatus</i> (Müller)	—	—	—	1	—	2	—	—	—	—	—	—	2	—	
<i>Vitrea contracta</i> (Westerlund)	—	1	—	—	—	—	—	—	—	—	—	—	—	—	
<i>Nesovitrea (Perpolita) hammonis</i> (Ström)	—	—	—	—	—	—	—	—	1	—	—	—	—	—	
Limacidae	3	3	1	—	6	10	4	—	—	1	1	4	3	2	
<i>Cecilioides acicula</i> (Müller)	2	5	6	—	—	—	—	—	—	—	—	—	—	—	
<i>Clausilia bidentata</i> (Ström)	3	1	1	1	5	6	12	9	12	7	2	2	4	4	
<i>Candidula intersecta</i> (Poiret)	7	—	—	—	—	—	—	—	—	—	—	—	—	—	
<i>Cerņuella virgata</i> (Da Costa)	66	4	—	—	—	—	—	—	—	—	—	—	—	—	
<i>Helicella itala</i> (Linné)	—	—	4	13	15	15	15	13	33	21	13	10	4	2	
" <i>Helicella</i> " spp.	39	—	—	—	—	—	—	—	—	—	—	—	—	—	
<i>Monacha cartusiana</i> (Müller)	—	4	12	10	10	24	11	4	37	5	4	—	—	—	
<i>Trichia hispida</i> (Linné)	21	158	96	32	72	50	23	15	53	45	61	12	2	8	
<i>Cepaea nemoralis</i> (Linné)	—	—	—	—	—	—	—	—	+	—	—	—	—	—	
<i>Cepaea</i> sp.	—	—	4	2	2	16	8	8	6	8	2	7	4	6	
<i>Helix aspersa</i> Müller	—	2	—	—	—	—	—	—	—	—	—	—	—	—	

TABLE X. The Mollusca from the lynchet samples

The molluscs in these samples will probably be of mixed origin. Some will have been living in the ditch micro-environment and some will have come from the collapsing turves. *Pomatias elegans* is the dominant species, probably reflecting the broken-up nature of the ditch deposits into which this species could have burrowed. *Carychium tridentatum* and *Discus rotundatus* occur at low frequencies. Some authors have considered these to be characteristic of shaded or woodland conditions.¹ There is no reason to doubt that the South Downs were once forested² and that the area may have been cleared in the Neolithic; however, the presence of these two species in this context is probably related to the sheltered microhabitat of the ditch. Cameron and Morgan-Huws³ record *C. tridentatum* from a number of non-wooded habitats.

The rest of the fauna from the ditch is characteristic of open country conditions and includes the rare xerophile *Truncatellina cylindrica*. This species is restricted to dry exposed places such as maritime grasslands.⁴ It was also found in the lowest two samples from column one.

The lowest samples from column one may be from a Neolithic soil horizon which has been disturbed and truncated by later ploughing. The archaeological evidence for dating has been referred to above and the nature of the deposits and the densities of snails give further information (Table XI). Samples 28 and 29 have rather less coarse material and much higher densities of snails than in the samples above and below. The very high densities of snails in samples 28 and 29 may indicate that conditions were very favourable for molluscan life. It is more likely, however, that they indicate a stable soil. Thus many generations of snails may have lived on this soil and their shells, after death, were incorporated into it. The lower proportions of stones in these samples may indicate a horizon which has been sorted by worm action under a grassland cover. Obviously, later ploughing has mixed up the deposits to some extent. The molluscs in these lower samples indicate a grassland habitat, probably of short turf.

TABLE XI

The coarseness of the deposits and the snail densities in the lower samples from column one

Sample no.	25	26	27	28	29	30
Particles >2.0mm.	23%	28%	29%	23%	18%	45%
Snails/kg.	—	383	—	1369	1192	765

(—: not yet analysed)

The lowest samples from both columns produced no evidence of an earlier wooded phase, or of clearance and Neolithic ploughing (although features interpreted as ploughmarks were observed in the underlying chalk). Probably the deposits representing these phases have been lost as hillwash. The evidence from these samples suggests that a short turf grassland was present on the site for some time before the lynchet accumulated. The shortness of the turf may have been maintained by animal grazing.

¹ For example, J. G. Evans, 1972, op. cit.

² A. Thorley, 'Vegetational history in the Vale of the Brooks,' *Guide to Sussex Excursions*, Institute of British Geographers Conference (1971), pp. 47-50.

³ R. A. D. Cameron and D. J. Morgan-Huws, 'Snail faunas in the early stages of a chalk grassland

succession,' *Biological Journal Linnean Soc.*, vol. 7 (1975), pp. 215-229.

⁴ See the molluscan report by Dr. M. P. Kerney in P. M. Christie, 'A barrow-cemetery of the second millennium B.C. in Wiltshire, England,' *P.P.S.*, vol. 33 (1967), pp. 336-366.

The Lynchet Faunas

Judging by the fairly constant proportions of coarse materials and densities of molluscs, the main body of the lynchet (including samples 7 to 26 of column one) appears to have accumulated in a fairly steady way. The densities of molluscs are lower than in both the modern soil and the postulated Neolithic soil. This is probably due to the relative rapidity with which the deposits accumulated and to the less favourable environment caused by the ploughing which led to the lynchet formation.

The open grassland species *Vertigo pygmaea* is absent from the lynchet (it is only found in the Neolithic grassland and in the modern short turf) along with *Truncatellina cylindrica*. *Pupilla muscorum*, generally a grassland species but it may occur in other habitats,¹ declines in frequency from some 75 per cent in the Neolithic soil to as low as 5 per cent in some of the lynchet samples. On the other hand, *Vallonia* species tend to increase in frequency (particularly *V. exentrica*, thought to be the most xerophile of the genus) as well as *Helicella itala*, *Pomatias elegans*, *Monacha cartusiana*, *Trichia hispida* and the Limacidae. This list contains a mixture of xerophile elements, some of which would thrive in the broken soils of an arable field, and of catholic species as *T. hispida*. This latter species is often found in abundance in grassland habitats on the chalk but also occurs in a wide variety of other habitats.² *T. hispida* is very variable³ and Kerney⁴ has suggested that very local forms may arise, perhaps adapted to the local environment. Perhaps the more catholic species were living in a scrub environment at the edges of the field where the lynchet was accumulating, but there is no good evidence for this.

The Limacidae show an increase in abundance, particularly in samples 14, 18 and 22. These shells may be of the slug *Deroceras (Agriolimax) reticulatum* (Müller) (= *Agriolimax reticulatus* (Müller)), a species particularly abundant on arable land,⁵ but this has yet to be confirmed.

TABLE XII

The abundance of various snails (snails/kg of deposit) in different features on the site (data adapted from O'Connor, 1976)

Feature	570 4	570 3	570 1a	357 1	356 3	356 1a	FII 1 3rd C. B.C.	718 Hearth	571 1	590 Floor	590 1
Period	EN	N	N	N	EIA	EIA		R	ES	ES	EM
<i>Cecilioides acicula</i>	1	22	23	17	2	45	20	8	41	8	38
<i>Cerņuella virgata</i>	—	—	—	—	—	3	—	—	—	—	16
<i>Candidula intersecta</i>	—	—	—	—	—	1	1	—	—	—	8
<i>Cochlicella acuta</i>	—	—	—	—	—	1	—	—	—	—	—

E: Early; N: Neolithic; IA: Iron Age; R: Roman; S: Saxon; M: Mediaeval.

¹ J. G. Evans, 1972, op. cit., pp. 146-151.

² *ibid.*, pp. 177-178.

³ L. Forcart, 'New researches on *Trichia hispida* (Linnaeus) and related forms,' *Proc. Europ. Malac. Congr.*, 1 (1965), pp. 79-89.

⁴ M. P. Kerney, 'Late-glacial deposits on the chalk of South-East England,' *Phil. Trans. Royal Soc. Lond. (B)*, vol. 246 (1963), pp. 203-254.

⁵ A. E. Ellis, *British Snails*, Oxford (1926), p. 256.

The Modern Fauna

The modern samples contain a quite different fauna, characteristic of a modern maritime short-turfed grassland. *Pupilla muscorum* is the dominant species and *Vertigo pygmaea* occurs again. *Truncatellina*, *Monacha* and *Helicella itala* are absent.

The larger helicids are represented by *Helix aspersa*, *Candidula intersecta* and *Cerņuella virgata*. These species are thought to be quite recent introductions (Roman or post-Roman)¹ but it is possible that they may have occurred in coastal areas of Britain much earlier in the Flandrian.² *Candidula intersecta* (= *Helicella caperata*), or specimens looking like this species, was found by Spencer³ in a Bronze Age context under blown sand at Gwithian, Cornwall. She suggests that this was an isolated introduction which failed to become widely established. Pit-fills, and other deposits on the Bishopstone site have been studied by O'Connor⁴ who found *Cerņuella virgata*, *Candidula intersecta* and *Cochlicella acuta* in early Iron Age contexts (Table XII). The occurrence, in high numbers, of these species in 'early Medieval' contexts is not surprising. Are the prehistoric occurrences intrusive? I suspect that they are, for a number of reasons. Firstly, if these species were present on the site in the early Iron Age it is strange that they are absent from the body of the lynchet. Kerney⁵ records that all these helicids are tolerant of quite high levels of cultivation. Secondly, why are these species absent from Roman and early Saxon features? There is no continuity in their distribution from the early Iron Age to the early Medieval period. This would suggest either that the prehistoric occurrences represent introduced individuals which failed to become established, or that they are intrusive. Finally, there is a slight association between the occurrence of these species and the abundance of the recently introduced, burrowing, species *Cecilioides acicula* (Table XII). The helicellids only occur in deposits with quite high abundances of *C. acicula*. It is not suggested that the burrowing activities of *C. acicula* have introduced these other species into the deposits, but that the relationships shown in Table XII may be the result of disturbances in some features which were not well sealed.

The modern turf fauna is also characterised by the high abundance of *Vallonia excentrica* compared with *V. costata*, a situation also found in the modern faunas at Overton and Fyfield Downs.⁶

The accumulation of the lynchet deposits probably ceased a long time ago (possibly in Saxon times) and the quite different make-up of the modern molluscan fauna probably reflects this.

The Occurrence of Aquatic Molluscs

Fragments, and complete individuals, of some marine, estuarine and freshwater species were found in the deposits from column one (Table XIII). None were found in the samples from the ditch in column two.

The presence of these shells throughout the deposits is probably indicative of manuring with seaweeds. This was probably done in order to replenish the organic soil matter depleted by

¹ J. G. Evans, 1972, op. cit., pp. 175 and 179.

² M. P. Kerney, 'Snails and man in Britain,' *Journal of Conchology*, vol. 26 (1966), pp. 3-14.

³ P. J. Spencer, 'Habitat change in coastal sand-dune areas: the molluscan evidence,' in J. G. Evans, S. Limbrey and H. Cleere (eds.), *The Effect of Man on the Landscape: the Highland Zone*. C.B.A. Research Report No. 11 (1975), pp. 96-103.

⁴ T. P. O'Connor, *Pre-industrial ecological change on the South Downs as indicated by land molluscs*, (unpublished B.Sc. dissertation, Inst. of Archaeology, Univ. of London, 1976) and p. 267, below.

⁵ M. P. Kerney, 1966, op. cit.

⁶ P. J. Fowler and J. G. Evans, 1967, op. cit.

cropping. There is additional evidence for manuring with seaweed from the settlement (see the section below on the resources of the seashore).

TABLE XIII

The occurrence of aquatic molluscs in the samples from column one

Sample no.	1	3	7	10	14	18	22	26	28	29	30
Marine spp.:											
<i>Mytilus edulis</i>	X	X	X	—	X	—	X	X	X	X	X
<i>Littorina littorea</i>	—	—	—	—	—	—	—	X	—	—	—
<i>L. saxatilis</i>	—	X	—	—	—	—	—	—	—	—	—
Estuarine sp.:											
<i>Hydrobia ulvae</i>	X	—	X	X	—	X	—	—	X	X	—
Freshwater sp.:											
? <i>Unio</i> sp.	—	X	—	—	—	—	—	—	—	—	—

Conclusions

1) Part of the fauna from the ditch underlying the lynchet is indicative of open country conditions. Probably a short-turfed grassland was in existence around the ditch in Neolithic times. The rest of the fauna probably reflects the ditch micro-environment.

2) The lowest layers of the lynchet are probably Neolithic and contain a fauna suggesting the presence of a stable short-turfed grassland. There is no evidence of a former woodland cover or of a clearance phase followed by ploughing. Possibly the deposits representing these phases have been lost by hillwash.

3) This Neolithic soil has been disturbed and probably truncated by later ploughing, which has led to the formation of the lynchet. There is little evidence from the molluscs for stable grassland phases interrupting the lynchet accumulation.

4) Throughout the period of lynchet formation, the adjacent fields appear to have been manured with seaweeds.

5) The modern fauna on the lynchet is characteristic of exposed short-turfed habitats. It is quite different from any of the earlier faunas, probably indicating that the lynchet accumulation ceased a long time ago.

GENERAL DISCUSSION OF THE FIELD SYSTEM

One of the most significant results to have emerged from this study is evidence of a Neolithic negative lynchet at the base of the positive lynchet profile. That this was indeed a negative lynchet is shown by the way it cut into the hillside truncating the earlier ditch and by the ploughmarks at its base. Evidence for its Neolithic date is clear from the distribution of artifacts. However the rich brown soil which covered the negative lynchet produced Mollusca characteristic of short grazed grassland. Thus we must assume that the period of cultivation represented by the negative lynchet was either extremely short and left no recognisable trace among the Mol-

lusca or, as seems more likely, the ploughsoil had been eroded away from the top of the field. The evidence leaves unresolved the question of whether the upper field was cultivated during the Neolithic period but it remains a possibility.

The excavation has produced evidence that each of the excavated settlements, from the Neolithic to the end of the Romano-British period, had around it contemporary fields. In this respect it parallels the Iron Age to Roman sites on Slonk Hill, where a negative lynchet was also found just outside the settlement from which it was separated by a small ditch,¹ and Thundersbarrow Hill.² Until the Saxon period there appears to have been a fairly rigid distinction between the settlement area and its fields; they were not interleaved one over the other at different periods as was the case at Overton Down.³ Partly this may be because the limits of the Bishopstone settlement had been defined during the early Iron Age by the digging of the enclosure ditch. It has also been argued that the ditch at the base of the lynchet and the nearby posthole pair represent field boundaries. Ditches formed boundaries to the early fields at Gwithian, Cornwall,⁴ and wooden fence boundaries were found at Overton Down, Wiltshire⁵ and Store Vildmose, Denmark.⁶

Ploughmarks in the Neolithic negative lynchet appeared to run in only one direction, along the contours. No satisfactory evidence of cross-ploughing was recorded though it is known in this period from below the long barrow at South Street, Wiltshire.⁷ The ploughmarks from beneath the positive and negative lynchets of the upper field, which is known to have been cultivated during the Iron Age and Romano-British periods, strongly suggest that this field was cross-ploughed. It was long ago predicted by Dr. Curwen⁸ that cross-ploughing was practised within 'Celtic' fields, and recently it has also been found on Overton Down.⁹ It should not however be assumed that Downland fields were always cross-ploughed; the Slonk Hill ploughmarks¹⁰ ran in only one direction, as did those outside the Romano-British enclosure at Newhaven.¹¹ The marks themselves provide very little clue to the type of plough which produced them. One suspects however that it may have been a simple wooden bow ard with a socketed iron share, examples of the latter come from Slonk Hill (an Iron Age and a Roman example)¹² and Mount Caburn (Iron Age example).¹³ The bow ard is also represented by a bronze model of Romano-British date allegedly found in Sussex.¹⁴

The absence of Mollusca indicative of arable agriculture from the Neolithic negative lynchet and the fact that it was subsequently given over to pasture may indicate that the Neolithic field was cultivated for a comparatively short period. Not so the Iron Age and Romano-British

¹ I am grateful to Mr. R. Hartridge for information.

² E. C. Curwen, 'Excavations on Thundersbarrow Hill, Sussex,' *Antiquaries Journal*, vol. 13 (1933), pp. 109-133.

³ P. J. Fowler, 'The Archaeology of Fyfield and Overton Downs, Wiltshire—3rd interim report,' *Wiltshire Archaeological Magazine*, vol. 62 (1967), pp. 16-33.

⁴ J. V. S. Megaw et al., 'The Bronze Age settlement of Gwithian, Cornwall,' *Proc. West Cornwall Field Club*, New Series, vol. 2 (1960-61), pp. 200-215.

⁵ P. J. Fowler, 1967, op. cit., p. 24.

⁶ Viggo Nielson, 'Iron Age ploughmarks in Store Vildmose, North Jutland,' *Tools and Tillage*, vol. 1 (1970), p. 153.

⁷ P. J. Fowler and J. G. Evans, 'Plough-marks, lynchets and early fields,' *Antiquity*, vol. 41 (1967), pp. 289-301.

⁸ E. C. Curwen, *Plough and pasture* (1946), pp. 48-9.

⁹ P. J. Fowler, 1967, op. cit.

¹⁰ R. Hartridge, personal communication.

¹¹ M. G. Bell, 'The excavation of an early Romano-British site and Pleistocene landforms at Newhaven, Sussex,' *S.A.C.*, vol. 114 (1976), pp. 218-305.

¹² R. Hartridge, personal communication.

¹³ F. G. Payne, 'The plough in ancient Britain,' *Archaeological Journal*, vol. 104 (1947), pp. 82-111 and Fig. 1.

¹⁴ W. H. Manning, 'A group of bronze models from Sussex in the British Museum,' *Antiquaries Journal*, vol. 46 (1966), p. 50.

fields which seem to have been fairly continuously cultivated. The molluscs showed no evidence of periods of abandonment and sedimentological analysis suggested that the positive lynchet had developed in a fairly steady way. A similar impression was given by the distribution of pottery fabrics and artifacts. Though this evidence makes it improbable that any prolonged abandonment of the fields took place between early Iron Age and late Romano-British times, short periods of fallow may well have left no trace. All this evidence would seem to point to a fairly intensively cultivated infield around the settlement such as had been postulated by Professor Applebaum.¹ We might contrast this with fields which have produced evidence of periodic abandonment, like those on Portsdown Hill, Hampshire.² Such fields may eventually prove to be more peripheral to the catchment of the sites concerned. If fairly intensive cultivation of certain fields was practised it raises the problem of how soil fertility was maintained. Turning animals out on to the fields would have helped and this may be suggested by the existence of an enclosure ditch round the Iron Age settlement, and the possible fence associated with the Neolithic field. Crop rotation and the growing of legumes, to replenish soil nitrogen, may also have helped. In addition there was good evidence of manuring. It has for some time been realised that this is indicated by artifacts found on fields since they are liable to have been mucked out with manure.³ Some of the artifacts from the Bishopstone lynchet may represent a normal spread from the nearby settlement but the quantity was such that the practice of mucking out from the enclosures seems most likely. This becomes more apparent when we consider that if the 2m. wide cut is representative of the whole positive lynchet then it may contain some 178,000 artifacts. The farmers did not however restrict themselves to animal dung for manure but also collected seaweed on the shore. Clear evidence of this was provided by aquatic Mollusca from both the lynchet and the settlement, and finds of bryozoans in the settlement.

¹ S. Applebaum, 'The agriculture of the British early Iron Age as exemplified at Figheldean Down, Wiltshire,' *P.P.S.*, vol. 20 (1954), pp. 103-114.

² R. Bradley, 'Excavations on Portsdown Hill, 1963-5,' *Proc. Hampshire Field Club*, vol. 24 (1967-8), pp. 42-58.

³ H. C. Bowen, 1961, *op. cit.*, p. 6, and J. V. S. Megaw et al., 1960-61, *op. cit.*, pp. 200-215.

THE ENVIRONMENTAL AND ECONOMIC EVIDENCE

Much has already been said about this subject in discussion of the field system, and conclusions about the economy and environment have also been incorporated in the general discussions of each of the five main periods in the site's history. It remains now to present the evidence on which those conclusions were based with a particular emphasis on the degree of continuity or change which the various classes of evidence suggest from one period to the next.

The collection of this evidence, the potential of which has only been fully realised in recent years, was one of the main reasons for these excavations. Many of the samples of bones and marine Mollusca were collected by hand in the same way as other archaeological finds, but more refined techniques were necessary to extract plant remains, tiny shells and bones. In 1972 and 1974 the Environmental assistants were respectively Oliver Pearcey, B.Sc., and Monica Barnes, M.Sc. Soil samples weighing about 1 kilo were broken down in hydrogen peroxide and then passed through two sieves, the first of mesh size 1mm., and the second 300 microns. The residue was then washed into a dish and sorted wet. Some larger samples were also processed using a water sieving device.¹ During the 1975 season much more extensive flotation of samples was carried out by David Williams, B.Sc. He used a Cambridge froth flotation Cell² and a Siraf type water sieving unit,³ and has discussed the relative merits of these two devices elsewhere.⁴ All the methods of extraction used produced large amounts of plant remains, particularly seeds and charcoal, far more in fact than it was possible to have identified for the purposes of this report. Studies of the land Mollusca were mostly based on soil samples given directly to the specialists who did the extraction of specimens themselves and describe the techniques involved in their reports. T. P. O'Connor examined two samples previously processed by the flotation unit on site, and includes in his report reference to the likely effects of prior flotation on the results of mollusc analyses.

LAND MOLLUSCA FROM THE SETTLEMENT⁵ (Table XIV and XV and Fig. 110)

by T. P. O'Connor, B.Sc.

Thirteen samples from the settlement area were examined for land molluscs. They came from pits, ditches and posthole fills, and were taken from well defined stratigraphic contexts. The exact positions of the numbered samples are indicated on the illustrated sections. In order to establish a valid temporal sequence of samples they were generally taken from contexts which

¹ This was built by W. H. C. Bell, to whom I am grateful. For a similar sieve see: D. H. French, 'An experiment in water sieving,' *Anatolian Studies*, vol. 21 (1971), p. 59.

² H. N. Jarman et al., 'Retrieval of plant remains from archaeological sites by froth flotation,' in E. S. Higgs (ed.), *Papers in Economic Prehistory* (1972), pp. 39-48.

³ D. Williams, 'Flotation at Siraf,' *Antiquity*, vol. 47 (1973), pp. 288-292.

⁴ D. Williams, 'Preliminary observations on the use of flotation apparatus in Sussex,' *Bull. of the Institute of Archaeology*, No. 13 (1976), pp. 107-114.

⁵ For a fuller discussion see: T. P. O'Connor, *Pre-industrial ecological change on the South Downs as indicated by land molluscs* (unpublished B.Sc. dissertation, Univ. of London, 1976). Copy at Institute of Archaeology, London. This work formed part of a report submitted in partial fulfilment of the requirements for the degree of B.Sc. of the University of London in Archaeology.

also provided material for C.14 dating, although at the time of writing dates are only available for two contexts. The remaining Romano-British and Anglo-Saxon samples are reasonably closely dated by their contained artifacts.

Developed palaeosols were not generally present in the settlement, and mollusc faunas from features may to some extent reflect the microhabitat of the feature itself: the shade or rather lush vegetation encountered in a partly infilled pit for example. Nonetheless the present report compares faunas from pits and ditches of similar type and containing similar sediments, but covering a time span of some 4,000 years. The variation in these faunas reported here seems likely to reflect changes in the vegetation of the chalk Downland.

Two of the samples studied, Nos. 5 and 6, were previously processed by a flotation device on site, and this may have introduced some slight bias into the species represented as is suggested by Table XV.

The extraction process can only be summarised here.¹ The samples were weighed, and large samples were reduced to 1kg. The samples were then soaked in warm water and hydrogen peroxide, in order to break down the crumb structure of the soil and thus to liberate shells from enclosing clods of earth. When effervescence was seen to have ceased, a period varying from 3 hours to 3 days, the material was washed through a stack of soil sieves, down to a mesh size of 0.6mm. The residues were dried, weighed, and all intact shells and apices were picked out. The apex is chosen for counting purposes, as it represents a highly resistant part of the shell which cannot be duplicated during the fragmentation of a single shell. The shells were identified, mostly down to species level, and the number of each species in each sample was recorded.²

The principle underlying the environmental interpretation of archaeological mollusc faunas is that of comparison with present day analogues. However, detailed ecological studies are few, and much of the information on ecological preference used here is drawn from Evans, with some information on the mollusc faunas of the South Downs from a survey by G. Shrubsole.³ There are certain caveats involved in using present-day studies to interpret fossil mollusc faunas, but the results described are thought to have a reliable ecological basis.

The samples are numbered from 1, the earliest, to 13, the latest. The number of examples of each species extracted is given in Table XIV, and the relative proportions of the various ecological groups are represented in Fig. 110.

Samples 1-3 are from the Neolithic Pit No. 570 (Fig. 4), for which it is hoped to obtain a C.14 date. The earliest sample, 1, shows a wide species diversity, with 14 species. The Zonitidae, *Discus rotundatus* and *Carychium tridentatum* predominate. There are small scrub and intermediate components, the grassland component being represented by lone shells of *Vallonia costata* and *Pupilla muscorum*. This fauna strongly suggests a closed environment, probably woodland. A fauna of woodland type also occurs in Sample 2. Numbers of *Ena obscura* increase, and *Balea perversa* is present. Interesting are the reductions in numbers of *Carychium tridentatum* and *Vitrea* sp. *C. tridentatum* is known to be rather sensitive to human interference,⁴

¹ For full details see: J. G. Evans, *Land snails in archaeology* (1972), pp. 44-5.

² When this paper was written the new nomenclatural list, H. W. Walden, 1976, op. cit. pp. 21-25, had not been published. This revised list was however used in Dr. Thomas' paper above where reference is made to both the new and old names of species discussed in this paper.

³ J. G. Evans, 1972, op. cit., pp. 194-203. G. Shrubsole, 'Non-marine Mollusca of the Eastbourne district,' *The Journal of Conchology*, vol. 19 (1933), pp. 361-368.

⁴ J. G. Evans, 1972, op. cit., pp. 136 and 195.

TABLE XIV

The Mollusca from features in the settlement

	1	2	3	4	5	6	7	8	9	10	11	12	13
	570 4	570 3	570 1a	357 1	356 3	356 1a	FII 4	FII 3	FII 1	718 Hearth	571 1	590 Floor	590 1.base
<i>Pomatias elegans</i> (Muller)	3	1	—	5	N	N	—	—	N	—	—	—	—
<i>Carychium tridentatum</i> (Risso)	14	1	—	1	—	—	—	—	—	—	—	—	—
<i>Cochlicopa lubrica</i> (Muller)	2	7	—	1	—	—	1	—	—	—	—	—	—
<i>C. lubricella</i> (Porro)	1	—	—	—	—	—	—	—	—	—	—	—	—
<i>Vertigo pygmaea</i> (Drap)	—	—	—	—	3	2	—	—	—	—	—	1	1
<i>Pupilla muscorum</i> (Linn)	1	2	1	—	92	160	29	45	23	3	21	10	95
<i>Acanthinula aculeata</i> (Muller)	1	—	—	—	—	—	—	—	—	—	—	—	—
<i>Vallonia costata</i> (Muller)	1	—	1	8	—	12	8	8	7	—	6	4	18
<i>V. excentrica</i> (Sterki)	—	1	—	—	19	85	4	3	1	—	13	4	14
<i>Ena obscura</i> (Muller)	1	3	—	—	—	—	—	—	—	—	—	—	—
<i>Balea perversa</i> (Linn)	—	2	—	—	—	—	—	—	—	—	—	—	—
* <i>Cecilioides acicula</i> (Muller)	1	16	15	18	2	91	4	—	15	6	39	7	33
<i>Arianta/Cepaea</i> sp.	2	—	—	1	—	—	1	—	1	—	—	—	—
<i>Hygromia hispida</i> (Linn)	3	8	2	9	42	75	50	19	8	3	22	6	22
<i>Helicella virgata</i> (da Costa)	—	—	—	—	—	6	—	—	—	—	—	—	14
<i>Helicella itala</i> (Linn)	—	—	3	—	30	89	15	13	8	—	6	4	30
<i>Helicella caperata</i> (Montagu)	—	—	—	—	—	1	—	—	1	—	1	—	7
<i>Cochlicella acuta</i> (Muller)	—	—	—	—	—	1	—	—	—	—	—	—	—
<i>Punctum pygmaeum</i> (Drap)	—	—	—	—	—	—	—	—	—	—	—	1	—
<i>Discus rotundatus</i> (Muller)	13	14	1	—	—	—	—	—	—	—	—	—	—
<i>Euconulus fulvus</i> (Muller)	—	1	—	—	—	—	—	—	—	—	—	—	—
<i>Vitrea</i> sp.	11	2	—	2	—	—	—	—	—	—	—	—	—
<i>Oxychilus</i> sp.	9	11	1	8	—	—	—	—	—	—	—	—	—
<i>Retinella</i> sp.	19	11	1	2	—	—	—	—	—	—	—	—	—
<i>Oxychilus cellarius</i> (Muller)	—	—	—	—	—	—	1	4	—	—	—	—	—
<i>Littorina saxatilis</i> (Oliv)	—	—	—	—	—	—	1	—	—	—	1	—	—
<i>Mytilus edulis</i> (Linn)	—	—	—	—	—	—	—	—	—	—	N	N	—
<i>Hydrobia</i> sp.	—	—	—	—	—	—	1	—	—	—	—	—	—
TOTAL	82	80	25	55	188	522	113	92	64	12	108	37	234
Concentration/kg. total mass (F = flotation sample)	92.2	111.1	38.5	53.4	188	260.5	F	F	86.8	16.3	112.6	43.5	269
Number of species (Land snails only)	14	14	8	10	6	10	8	6	8	3	7	8	9

N = only non-apical fragments identified.

* An intrusive modern burrowing species of no archaeological significance.

and the possibility that man was beginning to tamper with the environment cannot be ruled out. This may also have affected *Vitrea* sp., as this is not known to be tolerant of open conditions. It would be unsafe to suggest human interference from such slender evidence, but the possibility of underbrush removal, or the clearance of small areas may be considered. Sample 3 yielded a regrettably low number of significant molluscs. Most important is the appearance of *Helicella itala* as the most abundant. The woodland component is still in evidence, but now as a minor part of the fauna. It appears that clearance has gone on to a fair degree, with the removal of much of the hygrophilic habitat.

Sample 4 came from the top of Neolithic Pit 357 (Fig 4). The pit has a radiocarbon date of 2510 ± 70 b.c. (Har—1662). The fauna is an interesting one, being not quite an open country fauna, nor ascribable to closed conditions. The Zonitidae are still numerous, with *Oxychilus* the dominant genus. *Hygromia hispida* and *Pomatias elegans* imply a less shady environment, with *Vallonia costata* providing a substantial grassland element. The picture is of a rather mixed environment, possibly a mosaic of grassland and scrub. *Helicella itala* has not yet appeared, and *Pupilla muscorum* is absent. If we are to interpret this sequence in terms of faunal change then this sample seems likely to fit chronologically between samples 2 and 3. Alternatively the difference would reflect a variation in micro-habitat.

TABLE XV
Comparison of results obtained by wet-sieving and by flotation from the enclosure ditch, layer 3

Species	Sieved % (total — <i>C. acicula</i>)	Flotation (ditto)	Difference
<i>Pupilla muscorum</i>	49%	50.18%	+1.18%
<i>Vertigo pygmaea</i>	1.6%	0.73%	-0.87%
<i>Hygromia hispida</i>	22.35%	38.92%	+16.57%
<i>Helicella itala</i>	16.0%	9.04%	-6.96%
<i>Vallonia</i> sp.	10.2%	0.91%	-9.29%

Samples 5 and 6 are from two particularly humic levels in the Iron Age enclosure ditch (Fig. 96). These humic layers were found over a considerable length of ditch on the southern side of the enclosure, and are best interpreted as thin soil horizons which developed in the largely silted ditch once it became colonised by vegetation. Sample 6 probably represents soil which slumped into the ditch fill as it stabilised and settled. Pottery finds indicate that this process of settling was going on during the middle to late Iron Age. In addition to the wet-sieved material this context also yielded a flotation sample. This was used for comparison against the sieved sample in order to assess the validity of flotation samples (see Table XV). The following remarks apply only to the sieved sample. Sample 5 shows a preponderance of *Pupilla muscorum* with substantial proportions of *Hygromia hispida* and *Helicella itala*. This points to a very open dry environment, probably one of arable cultivation. The paucity here of *Vertigo pygmaea* and *Vallonia costata* point to rather unstable, disturbed conditions. Sample 6 shows a continuation of this situation. Notable here are occurrences of *Cochlicella acuta*, *Helicella virgata*, and *Helicella caperata*. All three are generally described as post-Roman introductions. They could be explained as contamination through rabbit burrows not recognised at the time of excavation, but the status of these species is unclear.¹ All three of these species have been reported from a variety of pre-Medieval sites.²

¹ J. G. Evans, 1972, op. cit., p. 179; and M. P. Kerney, 'Snails and Man in Britain,' *The Journal of Conchology*, vol. 26 (1966), pp. 3-14.

² T. P. O'Connor, 1976, op. cit., pp. 30-31, but see also Dr. K. D. Thomas' comments about these species in his section on the lynchet Mollusca above.

Samples 7, 8 and 9 come from Iron Age Pit 11 (Fig. 30) for which a C.14 date of 270 ± 80 b.c. was obtained. (Harwell—1086). Samples 7 and 8 are flotation material. Both samples yielded an open-country fauna, not dissimilar to those from the enclosure ditch. Interesting is the occurrence of the synanthrope *Oxychilus cellarius*. In the virtual absence of any other hygrophiles, it seems that this species may well have been attracted by the concentration of organic detritus in an alkaline environment in the pit which was rich in plant remains. Sample 9 shows a fauna in which *Pupilla muscorum* is again dominant, with *Hygromia hispida*, *Helicella itala*, and *Vallonia costata* comprising the bulk of the remainder. Probably this fauna represents a similar environment to that postulated from earlier deposits in the enclosure ditch. The high proportion of *Vallonia costata* may reflect the presence of rather more stable, grassy areas at the time of sample 9. Throughout the Iron Age, the environment seems to have been predominantly an agricultural one. There is no evidence for closed vegetation, nor for the existence of any boundary hedge associated with the ditch. Such a feature would have attracted scrub and woodland species such as *Discus rotundatus* and *Pomatias elegans*, which would accordingly have been numerous in samples 5 and 6 from the Iron Age enclosure ditch.

Only one sample was obtained from a Romano-British context. This was No. 10 from hearth 718 dated to the middle to the late first century A.D., by an interesting pottery group. It unfortunately yielded very few snails, of which the only significant species were three examples each of *Pupilla muscorum* and *Hygromia hispida*. These at least give no reason to infer a change in environment from Iron Age times.

Two samples were obtained from Anglo-Saxon contexts, and are dated by artifact association to the fifth and sixth centuries A.D. Sample 11 is a combined one from the basal fill of post-hole 571. This produced an open country fauna. The low proportion of *Helicella itala* implies rather lush, grassy conditions, rather than arable. This view however, is to some extent contradicted by a low proportion of *Vallonia costata* and by an absence of *Vertigo pygmaea*. Sample 12 was from the primary fill of the sunken floored hut, Structure XLVIII (Fig. 88), it yielded a small number of snails which were indicative of rather open grassy conditions.

Chronologically the latest sample was No. 13 from the very top fill of Structure XLVIII (Fig. 88). After this feature had silted up, or been filled, the fill settled and subsidence took place allowing the deposition of a richly humic material, possibly a soil in the resulting hollow. From the lowest few centimetres of this deposit came Sample 13. This is the least securely dated of the samples, but it may be presumed to represent a time soon after the abandonment of the Anglo-Saxon site when slumping of the newly deposited fill would have taken place. This sample has the highest concentration of snails per kilogram found so far on this site, supporting the view that this is a soil. The fauna is dominated by *Pupilla muscorum*, and is notable for the presence of a large proportion of xerophilic *Helicella* species. This suggests a shorter, more closely grazed grassland environment than that of the preceding samples. Close parallels for this are closely grazed areas of the Downs today.

Conclusions

Samples from the Neolithic contexts suggest that a woodland clearance may have taken place during the early part of the Neolithic.¹ Samples 1 and 2 produced a woodland fauna, and came from Feature 570 which yielded very little artifactual material. Occupation during this period

¹ For further evidence, see discussion of the tree holes, p. 7.

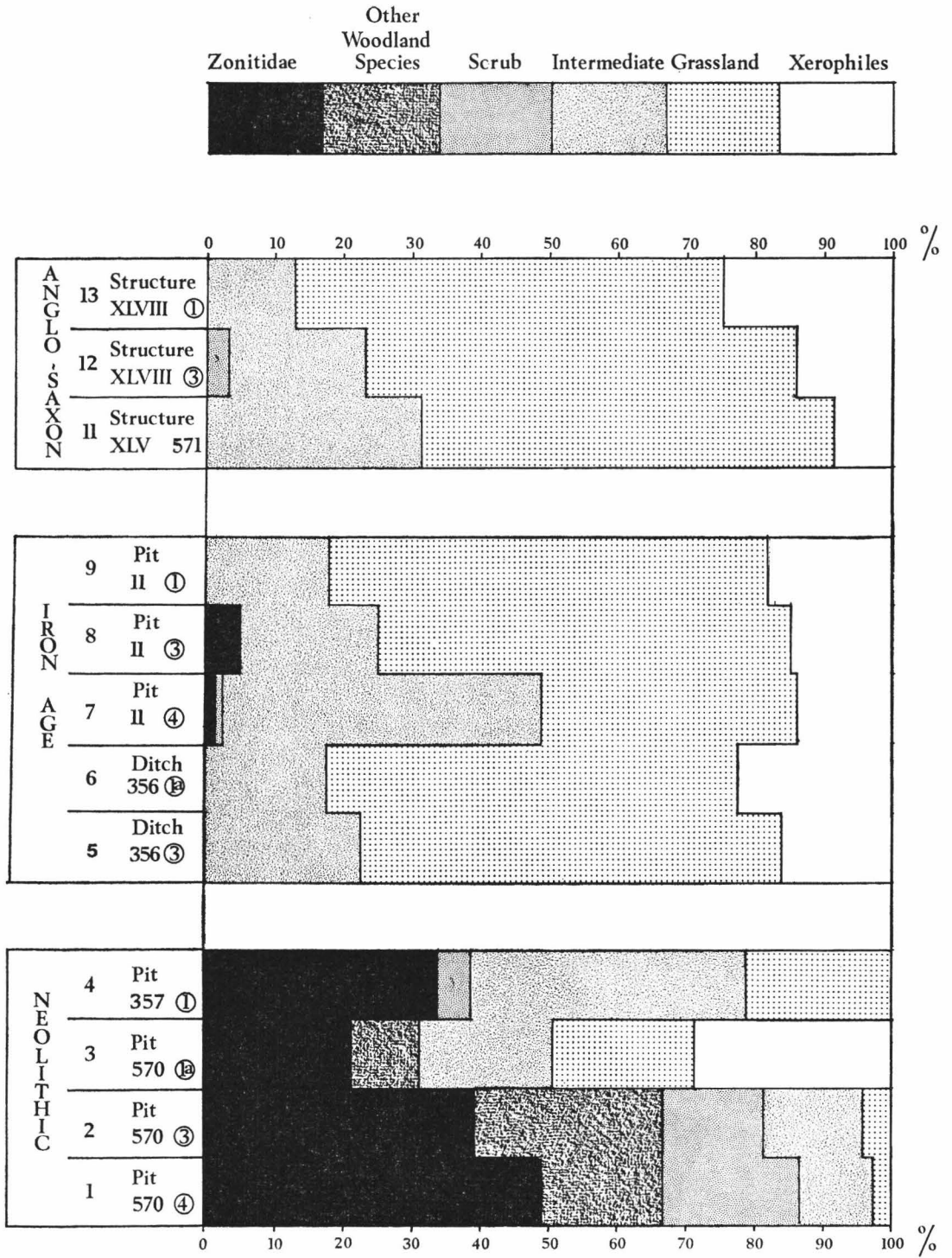


FIG. 110. The results of land mollusc analysis from the settlement, presented as a histogram

appears to have been transitory, having little effect on the local environment. By the time of Sample 4 there were more signs of human activity on the site, and this coincides with a decrease in apparent woodland intensity.

The Iron Age Samples 5 and 6 indicate the rather severe and disturbed conditions normally associated with arable agriculture. The fill of Pit 11 which yielded Samples 7-9 shows conditions stabilising somewhat. This may be due to grassy areas becoming well established around the cultivated fields, or it may reflect the use of this part of the site for pastoral purposes at this time. Samples 11 and 12 do not suggest the extreme arable conditions implied by samples from the Iron Age enclosure ditch. Conditions were still open and xeric however. By the time of Sample 13 the fauna was one of short turf grassland, with little or no scrub cover, probably due to intensive grazing. Parallels are to be seen in the modern faunas analysed by Evans at Overton Down and Fyfield Down from just this sort of grassland.¹

THE PLANT REMAINS (Table XVI)

by J. R. B. Arthur, F.L.S.

The way in which carbonised seeds and other remains were extracted from the soil has already been described. Details of the species represented in the various contexts on the site are given in the accompanying table listed under period and then under the pit number. In most cases the number of seeds from each context is given but where large caches of seeds were involved, as in Pit 11 and the corn-drying oven (C/O), percentage figures were calculated for the main crop species. In each case these figures were calculated on two samples, the results from each being given. There were two distinct layers, Nos. 3 and 7, of carbonised plant remains in the Romano-British corn-drying oven and these have been listed separately. A number of seed impressions from pottery sherds or fired clay objects have been listed under their fabric type numbers. Often the quantity of plant remains was large, implying that they were deliberate inclusions rather than accidental. It was always easier to identify impressions on fresh broken surfaces where they were morphologically clearer. The crop and weed species present in each period have already been noted in the general discussion of those periods, and it remains only to record specific observations on individual species and to say something of the ecological preferences of those species which are not cultivars.

Triticum dicoccum Schübl., Emmer Wheat. Despite the poor preservation of many Neolithic grains the importance of this species is confirmed by the finding of several large parts of spikelet.

Triticum spelta L., Spelt Wheat. In each case where this species is mentioned fragments of the spikelet confirmed the species. No evidence was found on this site for the cultivation of spelt prior to the Iron Age. In the only sample from the latter period which was suitable for statistical treatment it was the main crop, as it seems also to have been in some samples from the Romano-British corn-drying oven.

Triticum sp., Wheat. The grain size and glume shape of some post Neolithic examples resemble *T. aestivum*. Previously it had been thought that this species, if grown at all, was not grown to any great extent.

Hordeum vulgare L. ssp. *hexastichum*, Six-row barley. The species accounted for the largest number of Neolithic grains, and was present as a crop, albeit of secondary importance, in Iron Age and Romano-British samples.

Avena sp., Oats. Not present in the Neolithic and only represented by small numbers in the Iron Age and Romano-British periods.

Pisum sp., Peas. A single identification from Iron Age Pit 11.

Chenopodium album L., Fat Hen. A common weed of arable land which was collected as a supplement to the diet and seems also to have been cultivated in prehistoric and early historic times.²

Vicia sativa L., Common Vetch. Found in cultivated ground and roadsides, there is some evidence that vetch was deliberately grown as fodder in Romano-British times.³

Bromus secalinus L., Rye Brome. A typical weed of cultivation which was so much in evidence in a Romano-British corn-drying oven at East Dean, West Sussex⁴ that one suspects that it may have been regarded as a useful plant. An alternative explanation is that Brome rich layers represent the refuse from a screening process.

Arctium sp. A member of the Burdock family.

Atriplex patula L., Common Orache. Common in cultivated and waste ground.

Bilderdykia convulvulus L. Dumort, Black Bindweed. Found on cultivated ground, it was obviously a major weed species here and would have had the effect of reducing crop yields.

¹ J. G. Evans, 1972, op. cit., pp. 316-321 and Fig. 120.

² J. Renfrew, *Palaeobotany* (1973), p. 170; and West Stow Environmental Group, 'Experiment in the Anglo-Saxon Environment,' in R. T. Rowley (ed.), *Anglo-Saxon Settlement and Landscape*, British Archaeological Reports No. 6 (1974), p. 85.

³ P. A. Rahtz, 'A Roman villa at Downton,' *Wiltshire Archaeological and Natural History Magazine*, vol. 58 (1961-63), p. 328; and E. Salisbury *Weeds and Aliens* (1964), p. 268.

⁴ Unpublished excavation by Miss P. A. M. Keef in 1954.

TABLE XVI

Frequency of carbonised plant remains

	Neolithic	Iron Age						Romano-British						Saxon			
		357	505	522	11	Fabric 2a	Fabric 3b	920 layer 7	718	917	729	1	921	c/o ③	c/o ⑦	Fabric 1	550
<i>Triticum dicoccum</i> Schübl	6+	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
<i>Triticum spelta</i> L.	—	—	—	87% 92%	2	—	—	1	—	—	—	2	42+	70%	—	—	
<i>Triticum sp.</i>	9	—	—	—	—	—	—	—	—	—	7	—	—	80%	—	—	
<i>Hordeum vulgare</i> L.	10	—	—	3% 8%	—	1	3	1	1	—	8	—	4	30% 20%	3	—	
<i>Avena sp.</i>	—	—	—	1	1	—	—	—	—	—	—	—	—	1	—	—	
<i>Pisum sp.</i>	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	
<i>Chenopodium album</i> L.	5	3	172	—	—	—	—	—	—	—	8	—	—	—	—	9	
<i>Vicia sativa</i> L.	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	
<i>Bromus secalinus</i> L.	—	—	—	—	—	—	—	1	—	—	—	—	—	5	—	—	
<i>Bromus spp.</i>	—	—	—	—	—	—	—	—	—	—	—	—	—	3	—	—	
<i>Arctium sp.</i>	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
<i>Atriplex patula</i> L.	2	7	16	—	—	—	—	—	—	—	3	—	—	—	—	45	
<i>Bilderdykia convulvulus</i> (L)	4	—	25	—	—	—	—	—	—	—	16	—	—	—	—	2	
<i>Polygonum aviculare</i> L.	1	—	7	—	—	—	—	—	—	—	4	—	—	—	—	—	
<i>Stellaria media</i> (L.)	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
<i>Galium aparine</i> L.	—	—	—	1	—	—	2	—	—	—	—	—	—	—	—	—	
<i>Papaver sp.</i>	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	
<i>Veronica hederifolia</i> L.	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	
<i>Sonchus oleraceus</i> L.	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	
<i>Faphanus raphanistrum</i> L.	—	—	—	—	—	—	—	—	—	—	—	—	1+	—	—	—	
<i>Lolium perenne</i> L.	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	
<i>Galium spp.</i>	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	
<i>Lithospermum arvense</i> L.	—	—	—	—	—	—	3	—	—	—	—	—	—	1	—	—	

Polygonum aviculare L., Common Knotgrass. Common in cultivated and waste ground.
Stellaria media (L.) Vill., Chickweed. Abundant in cultivated land.
Galium aparine L., Goose grass, Cleavers. Found in hedge banks, disturbed and waste ground.
Papaver sp. Poppy. A weed of cultivated ground.
Veronica hederifolia L. Ivy-leaved Speedwell. Common on hedge banks and cultivated ground.
Sonchus oleraceus L., Common Sow Thistle. Represented by well preserved carbonised achenes in Pit 729. Found on bare and waste ground, a weed of cultivation.
Raphanus raphanistrum L., Wild Radish. A troublesome weed of arable land.
Lolium perenne L., Rye grass. Abundant in pastures.
Lithospermum arvense L., Corn Gromwell. Locally common on cultivated ground.

THE CHARCOALS

by C. R. Cartwright, M.A.

Eighty-six samples have been identified but these represent a small proportion of those found. Samples were selected for a variety of reasons. In the case of Neolithic Pit 357 an attempt was made to identify most of the sufficiently large pieces of charcoal in order to obtain some idea of the woody species which grew in the vicinity at the time. The conclusions from this and the caveats involved have already been noted in the general discussion of the Neolithic period. In other cases samples were taken of carbonised timbers in postholes to obtain information about the building materials used, and other samples from pits and smaller fragments from postholes probably represent timbers used as fuel. This is fairly certain in the case of samples from the hearths and ovens. Six samples were identified by Mrs. A. Miles of the Forest Products Research Laboratory, Princes Risborough, in 1971, and are marked by an asterisk; the remaining identifications are by the writer.

Neolithic Period

Pit 570. From the hearth

A few very fragmentary pieces of hawthorn (*Crataegus* sp.)2 samples of oak (*Quercus* sp.)1 sample of hazel (*Corylus* sp.)1 sample of ? hawthorn (*Crataegus* sp.)

Pit 357. Largely from hearth

10 samples of oak (*Quercus* sp.)4 samples of ash (*Fraxinus* sp.)1 sample of yew (*Taxus baccata*)3 samples of hazel (*Corylus* sp.)12 samples of hawthorn (*Crataegus* sp.)

Iron Age

Enclosure Ditch

1 sample of hornbeam (*Carpinus betulus*)1 sample of yew (*Taxus baccata*)1 sample of oak (*Quercus* sp.)Ditch 868 1 sample of oak (*Quercus* sp.)Pit 4 1 sample of hazel (*Corylus* sp.)1 sample of hawthorn (*Crataegus* sp.)2 samples of oak (*Quercus* sp.)

Pit 11. From among possible corn-drying refuse in Layer 4.

1 sample of hazel (*Corylus* sp.)1 sample of oak (*Quercus* sp.)

Pit 15. From hearth refuse

1 sample of hazel (*Corylus* sp.)1 sample of hawthorn (*Crataegus* sp.)1 sample of oak (*Quercus* sp.)Pit 423 1 sample of oak (*Quercus* sp.)Pit 714 *1 sample probably poplar (*Populus* sp.)Posthole 6, Structure XXIV, carbonised post, oak (*Quercus* sp.)Posthole 112, Structure XXXI, charcoal fragment, oak (*Quercus* sp.)Posthole 253, Structure VII, carbonised post, oak (*Quercus* sp.)Posthole 255, Structure VII, carbonised post, oak (*Quercus* sp.)Posthole 256, Structure VII, carbonised post, oak (*Quercus* sp.)Posthole 504, 2 charcoal fragments, oak (*Quercus* sp.)Posthole 524, carbonised post, oak (*Quercus* sp.); charcoal fragment, hornbeam (*Carpinus betulus*)Posthole 530, charcoal fragment, ? hornbeam (*Carpinus* sp.)

Romano-British:

Enclosure Ditch 1 sample of oak (*Quercus* sp.) *1 sample probably oak (*Quercus* sp.)Pit 177 1 sample of oak (*Quercus* sp.) which was slow-grownPit 729 *1 sample probably oak (*Quercus* sp.)

Corn-drying oven

1 sample of hawthorn (*Crataegus* sp.)*1 sample probably poplar (*Populus* sp.)

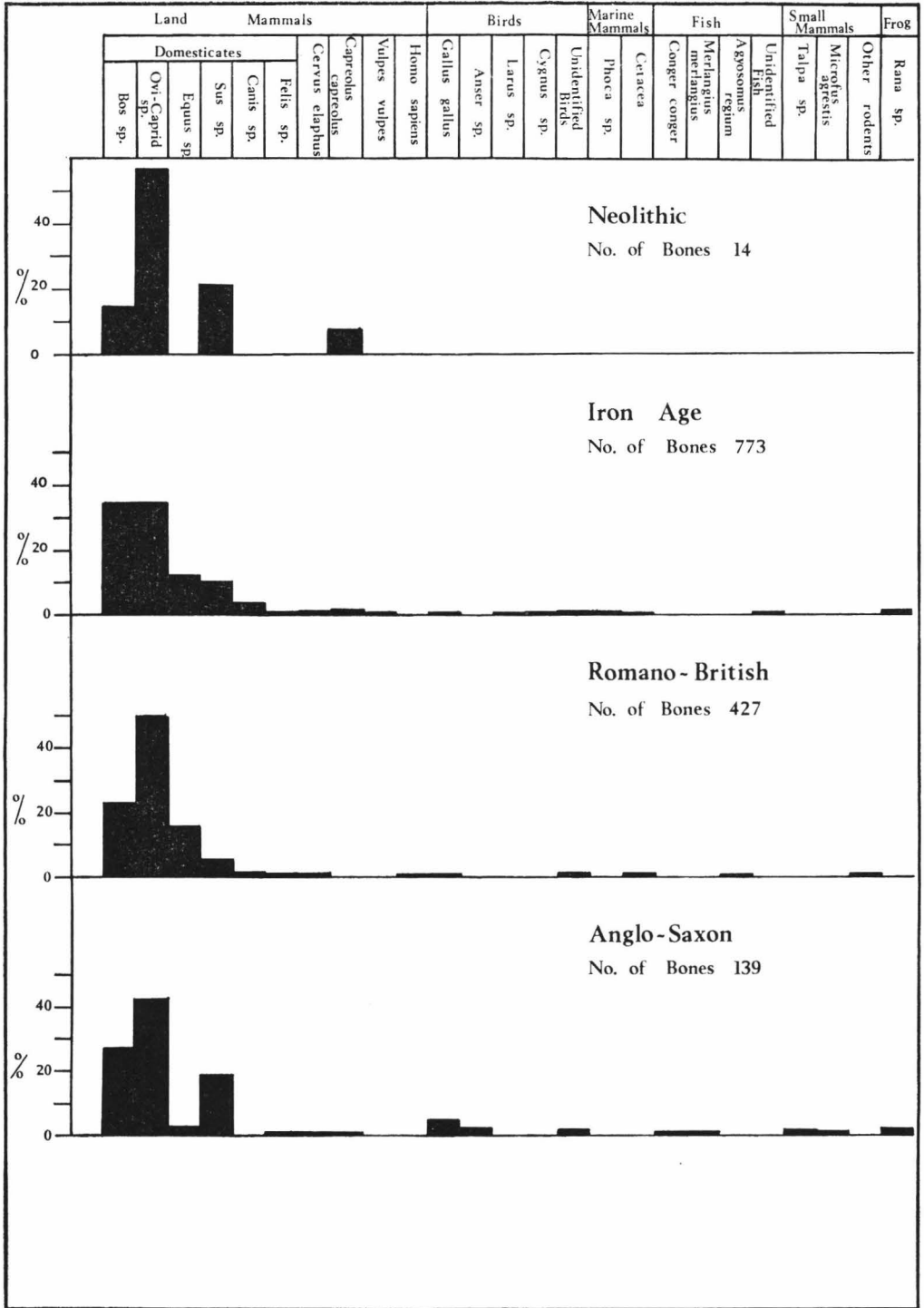


FIG 111. Histograms showing the percentage occurrence of animal species in four periods

Anglo-Saxon

- Hearth 550 1 sample of hornbeam (*Carpinus betulus*) 1 sample of hawthorn (*Crataegus* sp.)
 Hearth 259 1 sample of oak (*Quercus* sp.)
 Posthole 117, Structure I, charcoal fragment, hawthorn (*Crataegus* sp.)
 Posthole 115, Structure I, charcoal fragment, oak (*Quercus* sp.)
 Posthole 67, Structure I, charcoal fragment, hawthorn (*Crataegus* sp.)
 Posthole 83, Structure I, charcoal fragment, oak (*Quercus* sp.)
 Posthole 454, Structure XXXV, 3 samples of a carbonised post, oak (*Quercus* sp.)
 Posthole 464, Structure XXXV, carbonised post, oak (*Quercus* sp.)
 Posthole 462, Structure XXXV, carbonised post, oak (*Quercus* sp.)
 Posthole 463, Structure XXXV, carbonised post, oak (*Quercus* sp.)
 Structure XLVIII, charcoal fragment, oak (*Quercus* sp.)
 Structure XLVII, * carbonised beam, oak (*Quercus* sp.)

As at Newhaven, oak was used for virtually all the main structural posts sampled.¹

THE ANIMAL BONES² (Fig. 111 and Tables XVII-XX)

by Alison Gebbels, B.Sc.

All the animal bones found during the excavation were saved and it has been possible to identify 1,252 pieces to species level. The identifications are presented in the form of frequency charts and histograms for each of the broad 'cultural' periods identified in the site's history. These are Neolithic, Iron Age, Romano-British and Anglo-Saxon. During an earlier stage of the study frequency charts were made for sub-phases within periods; for instance different layers of the Iron Age enclosure ditch. These did not show significant variations within the periods, and such small samples had little statistical validity, so they have been amalgamated.

For each species the total number of identifiable fragments is given. The writer regards percentages based on these figures (excluding rib and skull fragments which are likely to have been broken many times) as the most reliable indication of the relative importance of species. Some of the small mammals and amphibians may be intrusive from burrows. However, ethnographic and well sealed archaeological evidence from other sites shows that some of them may equally have been supplements to the diet.

Generally speaking the bones are eroded with the result that measurements are few and of rather limited value. Those which could be taken are lodged in typescript form at Barbican House, Lewes.

Neolithic

Bos sp. (Cattle);
14.3%
Sus sp. (Pig):
21.4%

Ovis/Capra spp. (Sheep/goat)
57.11%
Capreolus capreolus (Roe Deer)
7.1%

Only fourteen fragments of bone were attributable, with certainty, to the Neolithic occupation; all were from Pit 357. Such a small sample is of little statistical value and percentages are only given to conform with data from other periods of occupation. Bone from this period is in poor condition compared to the later features. Two calcined fragments were present. The antler of Roe Deer may of course represent a shed antler collected as a tool.

Table XVII. Animal bones from Neolithic Pit 357

	<i>Bos</i> sp.	<i>Ovis</i> sp.	<i>Sus</i> sp.	<i>Capreolus capreolus</i>	Total
Scapula	1				1
Tibia	1				1
Calcaneum		1			1
Lower canine			1		1
Lower premolar		1			1
Lower molar		2	1		3
Lower incisor		4	1		5
Antler				1	1
Total	2	8	3	1	14
Percentages	14.3	57.11	21.4	7.1	99.95

¹ M. G. Bell, 1976, op. cit., p. 256.

² For a fuller discussion see: A. Gebbels, *Analysis of animal bones from Bishopstone and Newhaven in relation to the economy of Iron Age and Roman Sussex* (Unpublished B.Sc. dissertation, Univ. of London, 1974). Copy at Institute of Archaeology, London.

TABLE XVIII
Animal bones from Iron-Age features

	<i>Bos sp.</i>	<i>Ovis sp.</i>	<i>Equus sp.</i>	<i>Sus sp.</i>	<i>Canis sp.</i>	<i>Phoca sp.</i>	<i>Gallus sp.</i>	<i>Larus sp.</i>	<i>Cygnus sp.</i>	<i>Aves (general)</i>	<i>Cervus elaphus</i>	<i>Capreolus capreolus</i>	<i>Felis sp.</i>	<i>Cetacea</i>	<i>Pisces</i>	<i>Rana sp.</i>	<i>Vulpes vulpes</i>	<i>Totals</i>
Skull	65	8	2	1														76
Mandible	11	11	9	13	2							1						47
Maxilla	5	1	2	4														12
Vertebrae	14	2	8	2	6					1				1	4			38
Pelvis	20	2	2	1	1					1								27
Humerus	19	9	2			1				1							1	33
Radius	8	1	5		1							1	1				1	18
Ulna	2	2	2	1	3													10
Scapula	19	6	6	1	3				1			2						38
Metacarpal	13	12	2		2			1										30
Femur	10	2	3				1		1									17
Tibia	17	14	4		1					1		2						39
Patella		3																3
Metatarsus	6	11			2				2	1								22
Talus	2	1																3
Calcaneum	2	1	1															4
Phalanges	5	3	3					1				1						13
U. canine				2	2													4
premolar	7	14	5	6	1													33
molar	33	48	12	4							1							98
incisor	1	3	5	8	1													18
L. canine			2	3														5
premolar	9	11	1	8	1													30
molar	16	75	10	17														118
incisor	3	2	1	5														11
Astragalus	11	3	2	1														17
Horn	6	2																8
Petrous				1														1
Total minus skull	239	239	87	77	26	1	1	2	4	5	1	7	1	1	4	1	1	773 697
Percentage	34.5	34.5	12.5	10.9	3.7	0.1	0.1	0.1	0.4	1	0.1	1	0.1	0.1	0.5	0.1	0.1	99.7

Iron Age

A total of 773 fragments of bone provides a reasonably firm basis for assessment of the relative importance of species during this period. It should be borne in mind however, that these span a period of some 500 years. Features which pre-dated the enclosure produced only very small amounts of bone. By far the greatest number of pieces (413) came from the enclosure ditch; there was a small group from the contemporary pits and post holes in the southern part of the enclosure. A further small group came from the later Iron Age storage pits in the northern part of the enclosure. All these groups are first considered together, significant variations between them being noted in conclusion.

Cattle (*Bos* sp.); 34.5%

Together with the *Ovis/Capra* spp. these form the predominant elements of the Iron Age fauna. One group of five individuals from the later Iron Age storage pits was represented by forelimbs and mandibles. Hind limbs were present to a lesser extent. The individuals seem generally to have been adult but the dentition on some showed little wear. Burial I, that of a woman and child, contained long bones of cattle in the grave fill above the bodies. The bones were femur, humerus shaft and a tibia shaft hollowed out for the extraction of marrow. There was also the proximal fragment of a metapodial, an ulna, a scapula fragment and a vertebral body. Feature 531 was cut into the Iron Age enclosure ditch and these bones could have been derived from its fill. However, the ditch in this area did not contain noticeably large quantities of animal bone, and they are more likely to have been thrown in whilst the grave was being filled.

Sheep/Goat (*Ovis/Capra* spp.); 34.5%

The majority of these individuals were probably sheep. For the period as a whole they are of equal importance, in terms of the number of identifiable fragments, to cattle. Burial 2, that of a man, produced a few fragments of sheep bone from the grave fill.

Horse (*Equus* sp.); 12.5%

The third most important element in the Iron Age fauna. No bones of this species showed marks of butchery which were encountered in other species, and it is likely that horse was used largely for traction. From Pit 895 came a first and second phalanx fused together, presumably as the result of a break, although an X-ray failed to confirm this.

Pig (*Sus* sp.); 10.9%

Storage pits of the later Iron Age produced partial skeletons of three individuals the dentition of which showed little wear. Long bones were not present in these pits, and this could indicate the export of joints from the site. Burial I, that of a woman and child, produced pig bones which included a canine, a molar and two vertebral bodies. One tibia fragment from this feature was fashioned into an artifact (Fig. 62.21). A second artifact of pig bone, which came from the enclosure ditch, layer 3, was made from a humerus (Fig. 62.22).

Dog (*Canis* sp.); 3.7%

Late Iron Age pits produced the dentition of two individuals together with ribs, ulna and scapula, and two metapodials; both individuals were adult.

Cat (*Felis* sp.); 0.1%

Represented by a single bone from a late pit.

Red Deer (*Cervus elaphus*); 0.2%

Represented by a single molar and a single phalanx from late pits.

Roe Deer (*Capreolus capreolus*); 1%

Seven bones from storage pits of the late Iron Age.

Fox (*Vulpes vulpes*); 0.1%

Represented by a single radius.

Birds (*Aves*); 1.6%

One individual (0.1%) has been identified as domestic fowl (*Gallus* sp.). It is recorded by Caesar in *De Bello Gallico*, Book V, 1-23, that this was kept by the Britons who would not eat it. There was a gull (*Larus* sp. - 0.1%), either the Black Backed Gull (*Larus fuscus*) or the Herring Gull (*Larus argentatus*), which are difficult to distinguish on the basis of their first metacarpals and phalanx. A later Iron Age storage pit produced bones of a swan sized bird (*Cygnus* sp. - 0.1%); these included two parts of a metatarsal, a long bone shaft and a scapula.

Whale (*Cetacea*); 0.1%

A fragment of one large vertebral body, used as packing in Posthole 530 and dated to the early Iron Age.

Seal (*Phoca* sp.); 0.1%

A humerus found in the Iron Age enclosure ditch; probably that of the Common Seal (*Phoca vitulina*). Its preferred habitat is the lowland area of Southern England along sand banks, mud banks and estuaries. It does come on to dry land as the water recedes but never goes far inland.¹

Fish (*Pisces*); 0.5%

Represented by four vertebral bodies which have not been identified to species level.

Frog (*Rana* sp.); 0.1%

One bone from a late pit, probably intrusive.

General remarks

The Iron Age fauna is overwhelmingly dominated by the domesticated species of cattle, sheep, horse and pig, with wild species from hunting, fishing and fowling playing only a very minor role. Deer and fox may have been hunted partly because of the threat they posed to crops and domestic fowl as well as for the pot.

There are indications that the relative importance of sheep and cattle varied somewhat during the Iron Age. In the enclosure ditch, of early Iron Age date, cattle were predominant, with 191 identifiable fragments, followed by sheep represented by 114 fragments. This contrasts with the middle and late Iron Age storage pits where the number of identifiable fragments of sheep bone is larger than that of cattle. Cattle of course produce a meat weight much larger than the *Ovis/Capra* spp., and must be regarded as the predominant meat suppliers throughout the Iron Age. Sheep were in second place but increased in importance during the middle and late Iron Age. A similar tendency towards the increased importance of sheep during the Iron Age has been noticed elsewhere in Southern England.²

Romano-British

Features of this period produced 427 fragments of bone. They were originally analysed in two groups; one of late first and early second century date from the rectangular enclosure ditch and pits, and the other of fourth century date from the corn-drying oven and associated pits. There do not appear to be any significant differences between the faunas of the two groups and they are considered together.

Cattle (*Bos* sp.); 22.9%

Six individuals were represented in the second century enclosure ditch by mandibles, phalanges and forelimbs. Hind limbs were largely missing, and this suggests a selection of joints. Dentition does not show much wear. Long bones from the fourth century corn-drying oven were frequently broken and some immature individuals were present. From Pit 777 came four unfused vertebral bodies which had been butchered. The vertebral spines had been cut away and were found nearby.

Sheep/Goat (*Ovis/Capra* spp.); 48.9%

Represented particularly by a large number of loose teeth which may reflect differential preservation. Forelimbs, extremities and mandibles were represented. Dentition does not show much wear in general. The individuals were small, similar to Soay sheep in size. Sheep predominate among the fauna from the fourth century corn-drying oven, where they are represented in the main by mandibles and teeth.

Horse (*Equus* sp.); 15.9%

Two individuals were represented in the second century enclosure ditch by scapulae and by five loose adult molars. Pit 777 contained the femur, tibia and loose teeth of one individual. A substantial part of the skeleton of an immature horse was found in Pit 780. The skull was fragmented but most of the vertebral column was present and articulated. The maxilla indicated an age of 1-4 years. Both scapulae were present but not the limbs. From the same feature came a single scapula and the mandible of a second horse aged about one year. None of these horse bones showed any marks of butchery.

Pig (*Sus* sp.); 5.6%

The fourth-century corn-drying oven produced a single large tusk, possibly from a wild boar (*Sus scrofa*) - 0.22%. Another smaller, probably domesticated individual is present and an immature animal is represented by a single unerupted tooth.

Dog (*Canis* sp.); 1.8%

A total of eight bones were identified. One individual was represented in the second century enclosure ditch by two loose teeth and one phalanx, and the corn-drying oven produced two molars.

Cat (*Felis* sp.); 0.23%

Parts of the skeleton of a kitten from Feature 897.

¹ M. J. Lawrence and R. W. Brown, *Mammals of Britain* (1967), pp. 65-68.

² B. W. Cunliffe, *Iron Age communities in Britain* (1974), pp. 172-3.

TABLE XIX

Animal bones from Romano-British features

	<i>Bos sp.</i>	<i>Equus sp.</i>	<i>Ovis sp.</i>	<i>Sus sp.</i>	<i>Aves</i>	<i>Canis sp.</i>	<i>Cervus elaphus</i>	<i>Pisces</i>	<i>Cetacea</i>	<i>Homo sapiens sapiens</i>	<i>Rodentia</i>	<i>Felis sp.</i>	Totals	
Skull	2	1	2									*	5	
Mandible	13	7	10	5									35	
Maxilla		2											2	
Vertebrae	8	10	11					1	2				32	
Pelvis	2	1	4		1								8	
Humerus	6	1	9										16	
Radius	6	2	10										18	
Ulna	1	2	1							2			6	
Scapula	6	2	6										14	
Metacarpal	2	3	8		1								14	
Femur	1	3	1?		1					} 4			6	
Fibula					1									1
Tibia	4	3	7											14
Metatarsus	2		9			1							12	
Talus	2												2	
Calcaneum	3	1	5				1						10	
Phalanges	9		8		3	1							21	
U. canine				1	1	1	2?						5	
premolar	3	3	3		1								10	
molar	10	10	53	2		4							79	
incisor	1	3	1										5	
L. canine				5			1						6	
premolar	1	1	2	1									5	
molar	14	12	45	5		1							77	
incisor			5	5									10	
Astragalus	3	2	2										7	
Horn/antler	1		5				1						7	
Total minus skull	98	68	209	24	9	8	5	1	2	2	4	1	427	
Percentage	22.95	15.9	48.9	5.6	2.1	1.8	1.17	0.23	0.46	0.46	0.93	0.23	100.7	

TABLE XX
Animal bones from Anglo-Saxon features

	<i>Bos sp.</i>	<i>Ovis sp.</i>	<i>Sus sp.</i>	<i>Equus sp.</i>	<i>Cervus elaphus</i>	<i>Capreolus capreolus</i>	<i>Felis sp.</i>	<i>Gallus sp.</i>	<i>Anser sp.</i>	<i>Aves (unidentified)</i>	<i>Conger conger</i>	<i>Merlangus merlangus</i>	<i>Talpa sp.</i>	<i>Rana sp.</i>	<i>Microtus agrestis</i>	Totals
Skull																
Mandible	3	2	1						2				2		1	11
Maxilla			2						1							3
Vertebrae	2										1					3
Pelvis	4	1	1													6
Humerus	3							1						2		6
Radius		4	1					1								6
Ulna		1	1					1								3
Scapula	1	2	2	1				1				1				8
Metacarpal	4	2	5													11
Carpals							1									1
Femur	1	1	1					1		1						5
Tibia	1	1						1		1			1			5
Metatarsal	1	3														4
Talus	1			1												2
Calcaneum		2														2
Phalanges	3	5	1													9
U. premolar	3		1													4
molar	1	7	5	1	1											15
incisor		3	2													5
L. premolar		3	1													4
molar	5	16														21
incisor	1	2														3
Hyoid	1															1
Antler						1										1
Total	35	55	24	3	1	1	1	6	3	2	1	1	3	2	1	139
Percentage	25.17	39.50	17.26	2.15	0.7	0.7	0.7	4.3	2.1	1.4	0.7	0.7	2.1	1.4	0.7	99.64

Red Deer (*Cervus elaphus*); 1.17%

Represented by a molar and a phalanx from the enclosure ditch, by two molars from the corn-drying oven, and by a tine from hearth 891.

Man (*Homo sapiens sapiens*); 0.46%

Two ulnae of a baby and part of an adult skull from the corn-drying oven.

Birds (*Aves*); 2.1%

Nine bones were found including domestic fowl (*Gallus* sp.—0.22%) from the corn-drying oven.

Whale (*Cetacea*); 0.45%

A vertebral body and spine found in the second century enclosure ditch. Probably from a stranded individual, parts of which were carried up to the site.

Fish (*Pisces*); 0.23%

See report by Andrew Jones, below.

Rodents (*Rodentia*); 0.9%

Four bones, probably intrusive, from the fourth century corn-drying oven.

General Remarks

During the Romano-British period sheep predominated in terms of the numbers of identifiable fragments. This continues a tendency towards the increasing importance of sheep noted in the late Iron Age. However in terms of meat weight cattle and sheep were probably of roughly equal importance.

Anglo-Saxon

There were 139 identifiable bones from this period. Of these the majority are from the sunken hut structure XLVIII, with a smaller number from Structure VI, and few fragments from postholes of the rectangular buildings.

Cattle (*Bos* sp.); 25.2%

All individuals were mature with the exception of an unfused vertebral body from Structure XLVIII and one individual of about one year represented by the unfused proximal end of a phalanx found in Structure VI.

Sheep/Goat (*Ovis/Capra* spp.); 39.5%

These were the major component of the fauna in terms of the numbers of identifiable fragments. Three of the individuals represented are lambs, and there are a further four bones with unfused epiphyses from immature individuals.

Horse (*Equus* sp.); 2.2%

Represented by three bones of mature animals.

Pig (*Sus* sp.); 17.2%

Three bones were from piglets, one of which was newly born. Five bones had unfused epiphyses and were from immature individuals.

Cat (*Felis* sp.); 0.7%

One unfused femur from an immature animal.

Red Deer (*Cervus elaphus*); 0.7%

An upper molar.

Roe Deer (*Capreolus capreolus*); 0.7%

An antler.

Birds (*Aves*); 7.8%

Two pieces of mandible and one head of a coracoid were from domestic goose (*Anser* sp.—2.1%). The domestic fowl (*Gallus* sp.—4.3%) was represented by a radius, ulna, sternum, humerus, tibia and femur.

Fish (*Pisces*); 1.4%

See report by Andrew Jones below.

There were also bones of burrowing rodents and amphibians which are likely to be intrusive: a pair of mandibles and a tibia of the mole (*Talpa* sp.—2.1%); three humeri of frog (*Rana* sp.—1.4%) and a mandible of the field vole (*Microtus agrestis*—0.7%).

General Remarks

The sample is a small one but no particular selection of bone appears to have been operative. The assemblage from Structure XLVIII was distinguished by a particularly large number of fragments of bone too small for identification. These were mostly cut mid-shaft fragments of long bone.

Conclusions

Throughout the history of this site from the Neolithic to the Anglo-Saxon period the vertebrate fauna was overwhelmingly dominated by domesticated species. The Neolithic sample is small but sufficient to show that sheep/goat, cattle and pigs were domesticated.

During the Iron Age the dominant elements of the fauna were cattle and sheep present in roughly equal numbers. Cattle, of course, would have produced a much greater meat weight. It has already been noted that an increase in sheep began during the middle Iron Age. This increase continued until the site's abandonment in the sixth century A.D., and may reflect some change which was taking place in Downland ecology.

Sheep (possibly with a few goats) were more than twice as numerous as cattle during the Romano-British period, horse remained the third species at 16% and the proportion of pig fell to 5.6%. Other probable domesticates were dog, cat and domestic fowl. The Romano-British fauna may be compared to that from the first and second century villa at Newhaven.¹ On that site cattle were the most important species, followed by sheep, dog, horse and pig in that order of decreasing importance. The greater emphasis on sheep at Bishopstone may be explained by its Downland location compared to Newhaven in the adjoining river valley. Equally it may be the result of the obvious difference in economic status between the two sites.

The small number of bones from Anglo-Saxon contexts indicates that sheep continued to be the dominant members of the fauna, with cattle in second place and pig perhaps rather more important in the economy than during the Romano-British period. Cat, domestic fowl and goose were also kept.

Domesticated animals accounted for 92% of the bones from Neolithic contexts, 96% in the Iron Age, 95% in the Romano-British period, and 97% in the Anglo-Saxon period. During all periods a fairly constant figure of about 5% of the animal bones was contributed by hunting, fishing and fowling. These activities doubtless added a certain variety to the diet, despite the fact that in terms of meat weight their contribution was small. Fishing and fowling are however liable to be somewhat underrepresented, the bones are very small and less likely to be spotted during excavation. It should be said however that water sieving and froth flotation failed to produce any small fish bones, and it is perhaps more likely that they were seldom preserved on this site.

The portions of animals represented by bones suggest that in the main they were kept either for home consumption or that they left the site on the hoof. There was however some evidence for the selection of joints. The post-cranial skeleton of pig was poorly represented during all periods, and this was also found to be the case at the Romano-British site at Newhaven. This may point to the marketing of carcasses. During the Romano-British period hind limbs of sheep and cattle were underrepresented compared to the forelimbs. This may indicate that selected joints were going to market. A rather anomalous feature of the animal bones from all periods is that burnt bone appears consistently to be that of sheep.

It has not been possible to do much detailed work on the ageing of the animals represented. The dentition of each species during all periods indicates a majority of adult animals. Over-wintering does not seem to have been a problem. Teeth seldom exhibited excessive wear and slaughter seems generally to have taken place when animals were in their prime condition. Bones of horse did not exhibit any butchery marks, and in a number of cases several bones from a single individual were found articulated together. The suggestion is that horse was used primarily for traction and that it was perhaps not eaten.

THE FISH BONES

by Andrew Jones, B.Sc.²

Meagre (*Argyrosomus regium*)

One vertebral centrum from Pit 729, layer 1, which is dated to the late second century A.D. The Meagre is not a regular inhabitant of British waters, but in late summer large individuals wander into the English Channel and occasionally further north. It is most frequent off the coast of West Africa, Portugal, in the Bay of Biscay and in the Mediterranean. It is usually taken from shallow water and will enter estuaries.

The identified bone compares closely in size and form to the penultimate caudal vertebra of a specimen in the British Museum (Natural History) which was from an individual 160cm. long. The flesh is excellent to eat but being uncommon Meagre are not regularly caught commercially or by sea anglers.

Feature 729 also produced one brachioistegal but the species from which it came could not be identified.

Conger Eel (*Conger conger*)

One vertebral centrum from the Anglo-Saxon sunken hut Structure XLVIII. Conger eel is usually found amongst rocks or on rough ground and is common in the English Channel. It is most often caught on hooks at depths between 20-60 metres. The identified centrum is from a large specimen, at least 100cm. in length.

Whiting (*Merlangius merlangus*)

One clavicle fragment from the Anglo-Saxon sunken hut Structure XLVIII.

Whiting is a common fish inhabiting depths of 30-100 metres. It rarely exceeds 40cm. length, and is one of the most important fish to be taken by small boat fisheries. A variety of techniques are employed in its capture, i.e. nets, trawls and hooks.

¹ A. Gebbles, 'The animal bones,' in M. G. Bell, (1976), op. cit., pp. 254-255.

² My thanks are due to Mr. A. C. Wheeler of the British Museum (Natural History), for his help in confirming the identifications.

? Mackerel (*Scomber scombrus*)

A vertebra from the Romano-British enclosure ditch. It displays the condition hyperostosis, a bone swelling generally encountered in old age, which makes the identification uncertain.

RESOURCES OF THE SEASHORE

by Martin Bell

The Marine Molluscs¹ (Table XXI)

Most of the examples reported here were found during the final season of excavations when every mollusc was saved, they have however been supplemented by smaller samples from earlier seasons. The molluscs have been divided into seven groups according to the date of the features in which they were found.²

The Neolithic group is almost entirely from Pit 357 with the exception of four limpets from Pit 710. The only really important mollusc is the mussel at 97.5%. There are however much smaller proportions of other edible species; oyster, common cockle, pullet carpet shell, limpet and the cuttlefish (*Sepia officinalis*). Two examples of the latter are also present in early Iron Age contexts; presumably this squid-like creature was eaten as it is today in parts of the Mediterranean.³

Mussels continued to predominate during the later periods but in the Iron Age they were somewhat reduced in importance. This group is more varied with significant numbers of periwinkles, limpets, oysters and cockles being collected. There are also occasional examples of several other species, not all of which are likely to have been eaten. The smaller late Iron Age sample (124 pieces), shows that the edible species noted in early Iron Age contexts continued to be exploited but on a smaller scale compared to the large proportion of mussels, 79.6%. The non-edible species are virtually absent during this period. The importance of mussels at this time may, in part, be a function of the small sample, since by the Romano-British period the number of mussels had again fallen to approximately the early Iron Age level. By comparison with both the earlier and later samples the oyster appears to have played a rather more significant part in the Romano-British diet. Such could be the result of a more organised shell-fish industry, which might be inferred from the numbers of marine molluscs found on inland Romano-British sites.⁴ An interesting member of the early Romano-British and later groups, though a terrestrial mollusc, is the garden snail, *Helix aspersa*. This is an edible species, but of course we have no proof that it was eaten here. Its occurrence in the Bishopstone sample tends to support the general belief that it was a Roman introduction.⁵ The overall impression from the Romano-British period is of a more varied mollusc diet continuing the trend towards variety noted in the Iron Age contexts. This is in contrast to the virtually monospecific picture from the Neolithic.

The Anglo-Saxon period saw something of a return to the increased importance of the mussel, 81.76%. The only other significant mollusc was the common periwinkle, and both the oyster and limpet declined considerably in importance.

Interpretation of these results is not an easy matter, changes from one period to the next may reflect changes in the species available, thus ecological change in the vicinity, or they may reflect changed preferences on behalf of the collectors. It is particularly unfortunate that the predominant mollusc of the total assemblage, the mussel (76.02%), is one with fairly catholic ecological preferences. Today it is the predominant species on the chalk rocks east of Newhaven, but it is also a species which flourishes in the muddy estuaries of Devon and Cornwall,⁶ which we may suppose are somewhat similar habitats to the Ouse in prehistory. Much the same is true of the oyster, which is found below low water on the Sussex coast, but it flourishes particularly in shallow tidal creeks and estuaries. Oyster beds are reported to have existed on the Ouse flats west of Rookery Hill during the Post-Medieval period.⁷ A small number of species including the common cockle, cuttlefish, common periwinkle and *Calliostoma zizyphinum* would also tolerate both marine and estuarine conditions. *Cardium edule* in particular prefers the vicinity of estuaries. There are two species which may be taken as good indicators of brackish water or estuarine conditions. Of these perhaps the most interesting is an example of *Scrobicularia plana* from Neolithic Pit 357. This inhabits salt marsh channels and estuaries, and was common near Newhaven in the Salts and mud flats in the middle of the nineteenth century.⁸ Furthermore there are three examples of brackish water *Hydrobia* sp. found by T. P. O'Connor in soil samples from Iron Age features.

Certain other molluscs which collectively account for 14.7% of the total show a very distinct preference for the intertidal zone on rocky shores. These are *Nucella lapillus*; *Littorina littoralis*; *Gibbula umbilicalis*; *Monodonta lineata*; *Ocenebra erinacea*; *Littorina littorea*; *Littorina saxatilis*; *Nassarius reticulatus* and *Patella vulgata*. Suitable habitats are today found on the wave-cut platform west of Newhaven and east of Seaford. It is possible that if parts of the Ouse valley were flooded in prehistory then suitable habitats may once have existed below the estuary cliffs. One of the major natural agencies in the reclamation of the Ouse valley was the development of a

¹ I am grateful for helpful advice on this section from Dr. K. D. Thomas.

² The numbers given in Table XXI are the number of valves with hinge teeth in bivalves, and the number of shells with apical fragments in gastropods.

³ J. Lellak, *Shells of Britain and Europe* (1975), p. 230.

⁴ S. S. Frere, *Britannia* (1967), p. 299.

⁵ J. G. Evans, 1972, op. cit., pp. 175-6.

⁶ N. Tebble, *British Bivalve Sea Shells*, B.M. Nat. Hist. (1966), p. 41.

⁷ They were for instance visited by Charles Dickens, 'Old Towns by the Sea,' *Household Words* (21 Oct. 1876). In the mid-nineteenth century the oyster trade at Newhaven was of some importance, up to 130 boats participated in their collection in mid-Channel and there were beds in Mill Creek and Sleepers Hole. Information from Mr. G. Sims.

⁸ Mrs. Merrifield (ed.), *A Sketch of the natural history of Brighton and its vicinity* (1864), p. 84.

TABLE XXI

Marine Mollusca from the settlements

	Neolithic	Early Iron Age Features	Iron Age Enclosure Ditch	Late Iron Age Features	Second Century Romano- British	Late Romano- British	Anglo- Saxon	Totals
<i>Mytilus edulis</i> L. Mussel	2437	234	227	98	615	104	3456	7171
<i>Buccinum undatum</i> L. Whelk		3	16		1		4	24
<i>Ostrea edulis</i> L. Oyster	23	22	56	6	206	44	66	423
<i>Cardium edule</i> L. Common cockle	8	34	5	5	34	3	7	96
<i>Venerupis pullastra</i> (Montagu) Pullet carpet shell	24	7	13	1	106	16	12	179
<i>Scrobicularia plana</i> (da Costa)	1							1
<i>Patella vulgata</i> L. Common limpet	4	50	91	4	249	24	30	452
<i>Littorina littorea</i> L. Common periwinkle		43	43	6	189	30	588	899
<i>Pecten maximus</i> (L.) Great scallop			1		1	2	1	5
<i>Helix aspersa</i> Müller Garden snail					29	19	51	99
<i>Sepia officinalis</i> L. Common cuttlefish	1		2					3
<i>Anomia ephippium</i> L. Saddle oyster		1	2				2	5
<i>Cardium tuberculatum</i> L. Rough cockle		6	13	3			5	27
<i>Pecten</i> sp.			1				1	2
<i>Chlamys striata</i> (Müller)			1					1
<i>Nassarius reticulatus</i> (L.) Dog whelk		13	2					15
<i>Littorina littoralis</i> (L.) Flat winkle		7	2		1		3	13
<i>Gibbula umbilicalis</i> (da Costa)			1					1
<i>Monodonta lineata</i> (da Costa)		1	1					2
<i>Ocenebra erinacea</i> (L.) Sting winkle		3	3					6
<i>Nucella lapillus</i> (L.)			4					4
<i>Calliostoma zizyphinum</i> (L.) var. <i>lyonsi</i> Painted top		2						2
<i>Chlamys varia</i> (L.) Variegated scallop							1	1
<i>Littorina saxatilis</i> (olivi) Rough winkle		1					2	3
<i>Hydrobia</i> sp.		2		1				3
Unidentified		1						1
Total	2498	430	484	124	1431	242	4229	9438

shingle bar by longshore drift. This shingle is a particularly suitable habitat for *Venerupis pullastra*, which was abundant on the shingle around Bishopstone tide mills in the mid-19th century.¹ Six species of little numerical importance (0.66%) are inhabitants of the area below the low water mark, and in certain cases down to deep water. These are *Pecten maximus*; *Chlamys varia*; *Anomia ephippium*; *Buccinum undatum*; *Chlamys striata* and *Cardium tuberculatum*. Such are likely to have been collected as 'dead shells,' some perhaps for ornament like a perforated example of *Buccinum undatum* from Saxon hut XLVIII.² To this we must add at least two limpets from the same feature; the apical areas of these were missing, and they were worn and rounded by wave action showing that they were collected as 'dead' shells. Other shells of deeper waters, like the scallop and the rough cockle, might equally have served as tools.

One or two inedible or very small species seem likely to have found their way to the site attached to seaweed. *Anomia ephippium* commonly attaches itself to the holdfasts of large seaweeds.³ A similar preference is shown by *Littorina saxatilis* which feeds on and around the Channelled Wrack on the high shore. Particularly convincing are thirteen examples of *Littorina littoralis* which is generally found on the seaweeds *Fucus* and *Ascophyllum*.⁴ This together with the evidence of the Bryozoans presented below is perhaps a reasonable circumstantial basis for suggesting that the inhabitants of this site collected seaweeds for manure or fodder, as indeed the people of many areas did in historical time.

Crustaceans

Crab. A claw was found in the late Iron Age Pit 920. Most probably it is from the edible species *Cancer pagurus* L. Barnacles. These were found in two features. Pit 423, which belongs to the early Iron Age pre-enclosure phase, contained four, and Pit 917, of Romano-British date, contained 108 pieces. They are acorn barnacles, almost certainly one of the two most abundant species, *Balanus balanoides* or *Chthamalus stellatus*; both are found on rocky shores. How they arrived on the site is uncertain, they commonly attach themselves to oyster and scallop shells, but none of these were so attached, equally they could have been brought on driftwood or even rocks.

Bryozoans

Four examples of these colonial marine organisms, similar in appearance to sponges, were found. Two were from the Iron Age enclosure ditch, layer 1, one was from the bottom of Pit 791 and the fourth was unstratified. They have been examined by Miss Pat Cook of the British Museum (Natural History) who reports that they are all of one species:—

Turbicellepora avicularis (Hincks) Bryozoa Cheilostomata

This is a fully marine species of deepish water which is found below about 20 metres. Three of the specimens are quite large and were probably some years old. They are commonly washed up on the beach after a storm. The writer knows of no particular use to which Bryozoans were put in prehistory, but the possible explanation for their presence here was suggested by Miss Cook who has found them amongst seaweed collected for manure.

GEOLOGICAL MATERIALS⁵ (Table XXII)

by Martin Bell

A brief mention has already been made of the geological materials collected in each period, in particular those used for the production of artifacts. It now remains to discuss the total assemblage of 1,139 pieces, and to identify the sources from which they were drawn. In a few cases we can be fairly specific about this, having identified likely exposures during field surveys. Figure 55 shows these and the basic geology of the site's environs. Five main geological areas were exploited as sources of stone, and they are discussed in order of their increasing distance from Rookery Hill.

(a) Upper Cretaceous

The site is on Upper Chalk and the numerous flints found in this were the major raw material for the production of Neolithic tools. However, during later periods flint and chalk were little used for artifacts. Thirteen Iron Age and Romano-British objects were of chalk, but three of these were of types not available on the hill. Two such exhibited borings of the piddock, *Pholas dactylus*, indicating that they were obtained from cliff falls on the seashore. Also probably from cliff falls were pieces of chalk conglomerate found at the junction between Upper Cretaceous and Eocene deposits just east of Seaford Head near TV 512975. Pieces of hard chalk were also found and are probably Melbourne Rock which occurs at the base of the Middle Chalk. This outcrops on the scarp slope of the Downs, the nearest exposures being in the vicinity of Itford Farm. Upper Cretaceous fossils, those of echinoderms and *Ostrea*, together with pieces of pyrite, are naturally present on the site and need not therefore have been collected. In view of the dominance of Upper Cretaceous deposits in the local landscape it is surprising that only 5.5% of the geological materials were drawn from this source.

¹ Mrs. Merrifield, 1864, op. cit., p. 84.

² Probably this hole was made by human agency, it is rather angular and rough to be the work of a carnivorous mollusc. See also a perforated mussel shell from Pit 357.

³ C. M. Yonge, *The sea shore* (1949), p. 166.

⁴ A. Graham, *British Prosobranchs*, Synopsis of the British Fauna (N.S.), No. 2 (1971), p. 58.

⁵ Advice on certain identifications was given by F. G. Dimes of the Geological Museum, London, and by the Palaeontology Department of the British Museum (Natural History).

TABLE XXII

Geological materials from the settlement

	UPPER CRETACEOUS			MARINE			EOCENE						LOWER CRETACEOUS WEALDEN					NON SUSSEX ROCKS							Total				
	Melbourne rock	Upper Cretaceous fossil	Pyrite	Chalk Conglomerate	Quartzite Pebbles	Foreign Pebbles	Kimmeridge Shale	Sarsen	Ferruginous Sandstone	Ironstone Conglomerate	Yellow Sandstone	Limonite concretions	Eocene Fossil	Iron pan	Upper Greensand	Lower Greensand	High Wealden Sandstone	Horsham Stone	Siltstone	Quartzite	Micaceous Sandstone	Mica-schist	Granite	Fine grained Sandstone		Coal or lignite	Shale	Haematite	Other foreign stones
Neolithic		1	7			2		5	7	7																		2	31
Early Iron Age Features	8	1	4		15	1		12	9	17	6	1	2	3	1	5	5										1		91
Early Iron Age Ditch	1	5	5	2	66	19	1	8	23	66	6	1		7	12	11	58		1						1	1	1		295
Late Iron Age Features	2	2	1		15	2		3	1	19		2		3		1	7		1			1							60
Early Romano-British	1	1	4		9	7		12	15	11	7	30		2		5	13		1	1		1		1	3				124
Late Romano-British	1	2			2	1		2	26	24	16	15		3	1	24			7					1			1		126
Anglo-Saxon		1	1				1				13	1																	17
Unstratified	2	5	3	1	12	8		12	32	208	22	4	1	20	1	29	20	1		3	2	1	1		6		1		395
Total	15	18	25	3	119	40	2	54	113	365	58	53	3	38	15	75	103	1	10	4	2	3	1	2	10	1	2	4	1139
	5.54%			14.62%			58.67%						18.52%					2.63%							99.98				

(b) *The Beach*

Small flint pebbles were numerous notably in the final fill of the Iron Age enclosure ditch, and in the vicinity of the Anglo-Saxon buildings, for which they probably served as flooring. Only foreign and utilised pebbles were saved and amounted to 161. Foreign stone pebbles were mostly from areas of old hard igneous and metamorphic rocks such as the West Country, and included a few sizeable granite boulders. Some could have travelled to Sussex as ballast on boats. There are however a proportion of foreign stone pebbles on Sussex beaches, and it has recently been asserted that they arrived during a Pleistocene glaciation of the English channel.¹ More problematic is the presence of two pebbles of Kimmeridge Shale; similar pebbles are common on Dorset beaches, but it is debatable whether large pieces of this relatively friable stone would escape comminution sufficiently long to reach Sussex. 14.6% of the geological materials had been rounded by beach rolling.

(c) *Tertiary Rocks*

A major source of stone was an outlier of the Woolwich and Reading Beds on Castle Hill, Newhaven. This was also exploited as a source of clay during the Iron Age. The beds outcrop on the cliff between TQ 450001 and TQ 435000. Some of the stone was rounded and had clearly been collected from the beach. This included the enormous blocks of yellow sandstone and ironstone conglomerate used to construct the late Roman corn-drying oven. The largest block measured 1m. by 0.7m. by 0.30m., and can only have been brought from Castle Hill with great difficulty. Sarsen stones are also of Tertiary date, but they are residual rocks scattered on the Downs, and were presumably therefore collected from fields. There were 38 pieces of iron pan, but these could equally have developed on Tertiary or Wealden strata and were excluded in calculating the percentages. Rocks of Tertiary date accounted for 58.6% of the geological materials and, omitting the sarsens, 51.9% was probably obtained from Castle Hill.

(d) *Lower Cretaceous Wealden Rocks*

There were sufficient materials from this source to indicate that the inhabitants of the site made excursions into the Weald, during which they collected materials suitable for querns, rubbers and hearthstones. Most of the Upper Greensand was of a particularly bright green variety that outcrops on the beach at Eastbourne in the vicinity of TV 6097.² Lower Greensand was especially favoured for the production of querns, all the recognisable rotary examples of late Iron Age and Romano-British date being of this material. Lithologically the Lower Greensand is remarkably varied but most of the samples have a virtually identical lithology, and clearly come from one area, not yet identified. The nearest Lower Greensand exposures are 16km. north of the site where the Ouse valley crosses the Lower Greensand ridge near Barcombe. There are also quite a number of pieces of High Wealden sandstone, that is from the Ashdown and Tunbridge Wells sandstones which outcrop in areas that may have been visited in the search for iron. Wealden rocks account for 18.52% of the total.

(e) *Non-Sussex Rocks*

Twenty-nine pieces, omitting pebbles, had travelled some distance to reach the site and were mostly fashioned into artifacts. Five were pieces of micaceous sandstone or micaschist used for whetstone. The Carboniferous Coal Measures or Millstone Grit are a likely source for two pieces used as rubbers. Two pieces of iron oxide are tentatively identified as haematite, this material was used to give a surface finish to early Iron Age pottery³ including, probably, some examples from Bishopstone. Six of the ten pieces of 'coal' may be dismissed as unstratified, the remainder are also doubtful since some could be lignite from the local Eocene deposits. Rocks which do not occur in the Cretaceous and later geology of Sussex account for 2.6% of the total.

Discussion

Comparison of the sources of stone exploited during various phases in the site's history is complicated by the fact that once a piece had been brought to the site it was liable to be subsequently re-used. Many stone artifacts showed several phases of utilisation. Between the early Iron Age and late Romano-British periods the sources of stone were exploited in roughly the same proportions. The small Neolithic sample (31 pieces) produced no evidence for the exploitation of Wealden deposits but included two rocks not found in Sussex. The Saxon sample (17 pieces) is even more impoverished with only Upper Cretaceous and Eocene rocks. Much of the stone used in this period was probably obtained from earlier features by robbing, for which there is other evidence.

Taking all periods together about 76% of the geological materials could have been obtained within a 3km. radius of the site. Local geological materials were more important in the early Romano-British site at Newhaven,⁴ where 98% could have been obtained within a 2km. radius of that site. The difference is one of function, at Newhaven stone was used for building whereas at Bishopstone it was sought for querns, rubbers and hearthstones.

Non-Metallurgical Slags

Fifty-seven pieces of a slag-like material were found in the following Iron Age features:— 4, 11, 228, 895 and all layers of the enclosure ditch; a small piece also came from Romano-British Pit 929. The material was white to grey in colour, of light weight and vesicular texture, it crumbled fairly easily. Analysis of a sample from Pit 228 showed that copper, tin and lead were absent, and the sample was a silicate containing approximately 5% iron and

¹ G. A. Kellaway, 'Glaciation and the stones of Stonehenge,' *Nature*, No. 233 (Sept. 3, 1971), p. 30.

² Information and a specimen from Mr. P. Wilkinson.

³ K. P. Oakley, 'A note on haematite ware,' in R. E. M. Wheeler, *Maiden Castle, Dorset* (1943), pp. 379-380.

⁴ M. G. Bell, 1976, op. cit., pp. 298-299.

rather less aluminium.¹ Non-metalliferous slags of this kind are known to result from the vitrification of wood ash, seaweed ash, cow dung and burnt straw.² What appears, from the description, to be a rather similar material was found during excavations of the Red Hills in Essex.³ However at Bishopstone this slag was never found adhering to clay objects used in salt production, but tiny pieces of the slag were used as filler in some of these objects. An anomalous feature is that despite its absence of clay objects, small patches of the slag were found adhering to the surface of ordinary pots, for example Iron Age vessel 39. Without more extensive analyses we cannot say with certainty which of the range of possible processes was responsible for the slag.

METALLURGICAL SLAGS

by Henry Cleere, B.A., F.S.A.

Only three samples were found in Iron Age contexts, one from the early Iron Age enclosure ditch, layer 2a, was a piece of iron forging slag, the other two, from Pit 228, were bronze slag. From the second century Romano-British enclosure ditch came pieces of very dense ferruginous slag, probably from a bloomery. Pit 729 produced a fragment of hard-baked clay with a porous white deposit on the outside. This accretion is not associated with ironworking, and might be slag formed during the working of some non-ferrous metal such as lead. Posthole 924, part of late Romano-British Structure LXII, contained a piece of iron slag possibly from a bloomery. A number of other pieces of certain bloomery slag and cinder, together with a piece of furnace clay lining with slag attached, were found in the nucleation of fourth century finds in the top soil above this building. In addition eighteen other samples were examined from the top soil. Almost certainly they may be associated with one of the excavated settlements, as post-Saxon finds were rare on the hilltop; which settlement is uncertain, most probably the Romano-British. These samples included two fragments of bronze slag, a piece of possible bloomery tap slag and fifteen pieces of iron forging slag.

Samples from the top soil above Structure LXII were bloomery slags certainly related to iron smelting, as were probably a number of the other samples. However, the paucity of material found suggests that it was brought in from elsewhere since even small bloomery sites, such as that at Pippingford Park,⁴ produced amounts of slag measurable in tonnes rather than grams as in this case. Much the same may be said of the iron forging residues and bronze melting slags.

ABSOLUTE DATING METHODS⁵

Thermoluminescent Dating

Two sherds of Iron Age pottery fabric 2a from the enclosure ditch on the southern side were analysed by the Research Laboratory for Archaeology and the History of Art at Oxford. This was done, during an early stage in the excavation of the Iron Age site, at the request of Mr. Thomson in order to determine whether the pottery was Iron Age or Saxon. The results were as follows:—

Sherd No. 128 a 1.1: TL Age 1030 B.C.

Sherd No. 128 a 6.1: TL Age 850 B.C.

Average TL Age 950 B.C.

Probable limits of error 650-1250 B.C.

David Zimmerman

The results show that the sherds are Bronze Age or early Iron Age. Subsequent and larger finds of pottery from the same context have since been confirmed that they date to the latter period. How these absolute dates compare with the relative archaeological dating of the pottery has been discussed in the general section on the Iron Age period.

Thermoremanent Magnetism

In September, 1969 The Research Laboratory for Archaeology and the History of Art at Oxford took samples of the *in situ* oven wall of feature 627. Archaeological evidence indicated that the oven was Saxon. The aim in taking these samples was not so much to date the oven but to help compile a thermoremanent magnetism curve for the migration period.

¹ The analysis was carried out by Mr. E. Bickerstaff by courtesy of the Parker Pen Company, to whom I am grateful.

² R. T. Evans and R. F. Tylecote, 'Some vitrified products of non-metallurgical significance,' *Bulletin of the Historical Metallurgy Group*, vol. 1, 9 (1967), pp. 22-3.

³ J. H. Jenkins, 'Remarks on Dr. Flinders Petrie's Theory,' *Proc. Society of Antiquaries of London*, vol. 23 (1909-1911), pp. 90-96.

⁴ C. F. Tebbutt and H. F. Cleere, 'A Romano-British bloomery at Pippingford, Hartfield,' *S.A.C.*, vol. 111 (1973), pp. 27-40.

⁵ For a general explanation of these techniques see M. S. Tite, *Methods of physical examination in archaeology* (1972).

Radiocarbon Dating

The following results have been obtained by A.E.R.E., Harwell.

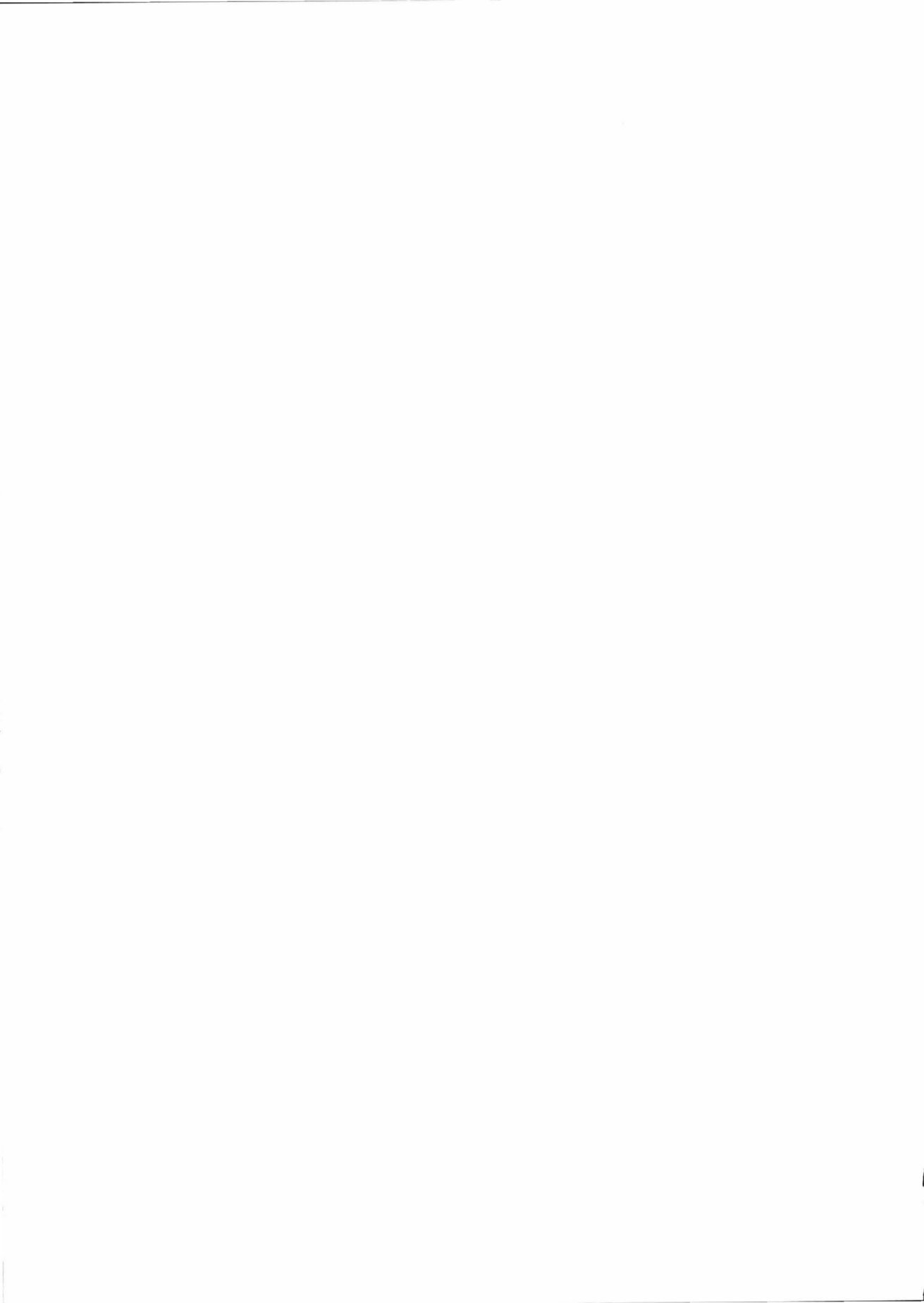
- (1) From Neolithic Pit 357, layers 4-7; charcoal sample:— Har—1662: Age bp in years, 4460 ± 70 bp; 2510 ± 70 bc.
- (2) From Pit 11, layers 3 and 4 in the area of early Iron Age settlement; charcoal sample:— Har—1086: Age bp in years, 2220 ± 80 bp; 270 ± 80 bc.
- (3) Charcoal from fairly large oak timbers in postholes 464, 454 and 463 of Anglo-Saxon Structure XXXV:— Har—1663: Age bp in years, 1630 ± 70 bp; ad 320 ± 70 .
- (4) Neolithic Pit 570, layers 1, 1a and 3, charcoal sample:— Har—1660; sample waiting for small counter.
- (5) Neolithic Pit 357, layer 2, charcoal sample:— Har—1661, sample waiting for small counter.
- (6) Iron Age posthole 253, layer 1, part of Structure VIII in the area of early Iron Age settlement, charcoal sample: sample waiting for small counter.

R. L. Otlet

Recent research has shown that it is necessary to calibrate radiocarbon dates in order to convert them to calendar years. At present calibration is only approximate and has not been attempted in this report. It may however be of interest to readers to calibrate the above dates by reference to the recently published bristlecone pine calibration curve.¹ The effect of this factor on Iron Age dates has been outlined in a recent paper which includes a calibration curve for the period.²

¹ C. Renfrew, 'British prehistory: changing configurations,' in C. Renfrew (ed.), *British Prehistory* (1974), pp. 1-40, the calibration chart is Fig. 1.

² G. J. Wainwright and V. R. Switsur, 'Gussage All Saints—a chronology,' *Antiquity*, vol. 50 (1976), pp. 32-39.



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